THE CRITICAL READING AND THINKING

ABILITIES OF MALAY SECONDARY SCHOOL PUPILS

IN SINGAPORE

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ABSTRACT
THE CRITICAL READING AND THINKING ABILITIES OF MALAY SECONDARY SCHOOL PUPILS IN SINGAPORE

Research on the education of Malay pupils, a minority group in Singapore, is sparse and is normally centred on Malay under-achievement in schools in comparison to other ethnic groups in Singapore. This study attempts to fill in the gap in research by studying one of the factors that might be related to the achievement of Malay pupils, that is, namely their critical reading and thinking abilities.

While critical thinking and reading skills were identified as important skills to be acquired, these two areas were not given proper emphasis in the Malay language curriculum. Research in this area may contribute not only to a better understanding of the nature of critical reading and thinking, but also help to identify the pupils' strengths and weaknesses in the construct, information useful for curriculum development and improving their performance in schools.

In investigating the critical reading and thinking abilities of Malay pupils, I have undertaken two lines of inquiry in this study. The first line of inquiry focussed on the development of two instruments : the Malay Language Critical Reading Test (MLCRT), designed to assess the critical reading ability of the pupils, and The Critical Thinking Disposition Inventory (CTDI) intended to measure the pupils' disposition to think critically. The second line of approach was directed towards developing a model of the relationship of the correlates of critical reading and thinking ability, and also their relationship with selected variables.

Three versions of the test on critical reading, the Trial MLCRT and the Actual MLCRT and the Revised MLCRT were developed . The Trial-MLCRT, a 100-item test, was piloted on 353 pupils while the Actual MLCRT and Revised MLCRT were standardized on a sample of 1444 students from five grade levels in secondary schools. The test items were originally designed based on ten subskills, namely, to elicit the ability to evaluate deductive inferences, the ability to evaluate inductive inferences, the ability to evaluate the soundness of generalizations, the ability to recognize hidden assumptions, the ability to identify bias in statements, the ability to recognize author's motives, the ability to identify facts and opinions, the ability to identify sources, uses and relevancy of materials, the ability to recognize similarities and differences and the ability to

evaluate the strength of arguments. In the revised MLCRT, henceforth refered to as RMLCRT only nine subskills comprising 65 items were retained.

The results of the validity and reliability studies based on the RMLCRT show the instrument to be reliable and valid for pupils from the Normal or Express stream, and for all five grade levels. Factor analysis of the subskills of the RMLCRT indicates one main general factor, the core critical reading subskills, to be its underlying trait. However, the result of factor analysing the items failed to give a clear picture of the underlying construct.

The second instrument, The Critical Thinking Disposition Inventory (CTDI), is a new instrument developed especially to measure pupils' critical thinking disposition. It was composed of 38 items which was shown to be internally consistent with the main scale. This instrument was standardized on 1024 pupils, in the same way as the RMLCRT. The reliability of the CTDI was found to be high and suitable for all five grade levels, for the Normal as well as for the Express stream pupils and for both genders. An exploratory factor analysis of the CTDI items revealed one main general factor as the underlying construct.

The second part of the study which utilized a subsample of 580 pupils was mainly focussed on presenting a model of the correlates of critical reading ability among Malay pupils in Singapore. The result indicates general ability, Malay language competency, general reading comprehension ability, grade level, age and sex, socio-economic status and critical thinking disposition to have an effect on critical reading ability. General ability was revealed to have the largest effect, showing its importance in determining critical reading ability. Malay language and reading comprehension were shown to have quite large effects, attesting to the importance of the language and reading factor, even surpassing that of critical thinking disposition which has a small but significant effect on critical reading ability.

Discussion of the findings, uses of the instruments, its implications for syllabus design and suggestions for further research in the area were also presented.

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INTRODUCTION AND BACKGROUND OF THE STUDY

In Part 1, Chapter 1 introduces the problem under study and explains the relevance of critical thinking and reading in the Malay language curriculum in Singapore. Chapter 2 will present a brief description of the historical background of the problem under study, which involved the Malays in Singapore.

CHAPTER 1
INTRODUCTION TO THE PROBLEM

1.1 Introduction

Singapore is fast becoming a prosperous industrialized country having achieved spectacular success in many areas, most important of which are in its economic, technological and educational developments. In the next phase of Singapore's overall national development, popularly called the 'Next Lap' where national efforts would be directed towards the pursuit of a more affluent and gracious way of life, education features as an important area of development. This is because the government feels that the most important 'investment' for the future rests on the development of its human resources, particularly the present generation of young Singaporeans in the school system who are the future citizens and leaders.

In tandem with this development, the education system is presently geared towards achieving excellence in all aspects, in every subject area, for all pupils irrespective of their social and ethnic origin. The education system in Singapore is based on meritocracy. It is highly competitive and students put a lot of effort into passing examinations. The pass rate of national examinations taken by pupils at significant stages of their schooling, for example, the Primary School Leaving Examination, the number of candidates for the General Ordinary Level Certificate Examination (GCE 'O' Level) and the General Advanced Level Certificate Examination (GCE 'A' Level) has been increasing year by year since 1973. (Please refer to Appendices 1, 2, and 3). The pass rate of the PSLE increased from 78.3% in 1973 to 88.8% in 1984, for the GCE 'O' Level, the percentage of pupils passing with 3 'O' level subjects increased from 40.8% to 66.6%, and during the same period, the GCE 'A' level pass rate increased from 10.4% to 26.6%.

Although Singapore students as a whole have made great strides in examinations as exemplified in the results of the national

examinations, there was some concern regarding their poor thinking skills and their propensity to regurgitate facts without giving their own interpretation. In the report given by the University of Cambridge Local Examination Syndicate on the Singapore candidates' general performance on the General Paper, [1] a marked contrast was noted in performance between those questions involving recall of facts and questions which require the candidates to criticize what they have read.

This may be due to the neglect of critical reading and thinking in the school curriculum. Goh (1989), in his study on the teaching of reading comprehension in Singapore schools, finds that out of 3,400 minutes of observed teaching, less than 300 minutes or about 9% of the time was given to critical reading of the texts, which he defined as an inferential and critical interpretation of the structure of the text as it relates to its overall meaning. Furthermore, Singapore youths were said to shun serious books and prefers to read only light materials like magazines and cartoons.[2]

The importance of reading has been stressed by Masuri, a well-known Malay poet who once remarked that eventually all aspects of knowledge in this modern world would have been publshed in book form as reading materials for mankind. [3] In the words of the then Minister of State for Education,

> *to be truly excellent, we need a nation of people who are not only well informed, but who are also reflective, perceptive and compassionate. These qualities can be effectively acquired and nurtured through reading.* [4]

Singapore, being at the confluence of the East and West having a high level of information technology, and enjoying easy availability of information and published materials from all sources whether from within or outside the country, calls for a certain degree of selection and critical appraisal. The public and therefore the students should develop critical awareness and skills in making rational decisions on the content and nature of all kinds of

published materials, not only propaganda and advertisements. Critical reading and thinking should therefore be taught in the school curriculum in order to develop critical readers and thinkers needed by society.

The relevance of critical thinking and reading has been acknowledged by educators and philosophers alike. Critical thinking has been claimed to be the basis of progressive thinking and thus valued by democratic social institutions. Marzano et al (1988) went so far as to claim that

> *The success of any democratic system depends on the individual's ability to analyze problems and make thoughtful decisions. A democracy thrives on the productivity of its diverse constituency - a productivity fostered by free, critical, and creative thought on issues of common interest.*
>
> (Marzano, et al 1988:2)

The objective of any education system is to develop individuals who are not only able to acquire knowledge receptively, but also to use the knowledge thus acquired rationally and independently and who can think. Central to this issue is the ability to not only comprehend and to interpret what is read, but also to evaluate what is read critically using one's own judgment. This ability is vital to the preservation of democracy, and should be taught and nurtured in our schools.

Reading in any language is a process that requires thought. Reading is an intellectual activity which involves not only surface reading, that is the decoding of written symbols but also requires complex mental processes to get to the meaning of the author and beyond. Reading could be used as an instrument to gain knowledge and information and thereby requires active thinking on the part of the reader.

Thorndike as early as 1917 had explained that:

Reading is a very elaborate procedure, involving a weighing of each of many elements in a sentence, their organization in the proper relation to one another, the selection of certain of their connotations and the rejection of others, and the cooperation of many forces to determine final response.

(Thorndike 1917: 329)

Reading critically in any language therefore requires rational thinking. It involves not only drawing inferences from what is read but also evaluating and applying it. It also requires vigorous critical judgment.

To be able to read critically in any language means to be able to read the thought behind the piece of writing as language and thought are inseparable. To the Malays, language is thought to be an exemplification of the soul - "Bahasa Jiwa Bangsa" and "Bahasa Menjunjung Budaya" literally honoring the culture and the speech community by exhibiting good upbringing and morality. Thus language, culture and psychology, in the Malay psyche for example, were seen to form one inextricable whole (Tham, S C. 1990).

At the same time, language is also an instrument of cultural transmission - changes in a language reflect changes in the cultural values of the speech community. As the Malays came in contact with Eastern, Islamic and Western ideas, profound interactions and changes had occurred which must have had an impact on their cognition- thinking in general and critical thinking in particular. It is from this backdrop that the cognition of the Malays with regard to critical thinking will be explored.

If linguistic categories reflect the nature of society's dominant socio-economic character (Tham 1990), then the scarcity of words denoting concepts related to thinking or the process of thinking could be cited as evidence of the lack of importance attached to critical thinking in general. In Malay there are few original words related to thinking and thoughts; examples are "fikir, ingat, rasa,

percaya, kira, taakul, akal, rasional, kritikal", and among such words, were those loaned from either Arabic or English. For instance the word 'fikir', Arabic in origin, can mean 'opinion, think, extrapolating, reflect and remember, depending on the contexts, but no word or expression could convey the concept of being 'critical minded', hence the English loan word 'kritikal'.

Facts about the culture and value systems of a society could also be derived from the sayings, proverbs, and social myths. The Malay language and culture is rich in proverbs or 'peribahasa', a store of nature-knowledge and common sense notions from observations of phenomena and occurrences in the Malay eco-cultural system, which are used to transmit meanings and concepts. A content analysis of a collection of peribahasa by Mohd. Adnan (1990)[5] was conducted by the researcher to substantiate the view regarding the lack of importance placed on critical thinking in the Malay value system. Out of 2,259 proverbs listed, only approximately 159 or 7% were classified under the category of knowledge and advice; and only 1.2% can be classified as related to thinking or thoughts.[5] Therefore few *peribahasa*, if any, refer to ways of thinking or how one should react to, or to reflect during the process of thinking.

Yet another source of evidence comes from Malay literature. In the old Malay traditions, knowledge and literature were spread mainly through the oral traditions of story telling, the so-called non-literate culture. Classical Malay literature which in the Malay concept includes everything that uses words or language in a creative way [6] is rich in folklore, mythology, legends and poetry, but in the traditional Malay society "*kritikan sastera hampir tidak ada*", (Safian H, Md Thani A. & Johan J, 1981) literary criticism is almost non-existent. Abdullah Munshi, the pioneer in the new form of Malay literature was very vocal and caustic in his criticism on the feudal systems and Malay society during the early days of British settlement, but he did not produce any material on literary criticism, a formal critique that looks at literary product as an object by itself separate from the author, audience and society.

Literary criticism lagged far behind the genre of Malay novels, short stories and modern poems which were popularised by early newspapers. The earliest form of literary critism was by Za'aba, writing in 1927 on "How to compose" (Safian et al, 1981). The few essays of criticism during that early period fused literature with nationalism. The authors were mostly Western-educated and writing was a means of fulfilling nationalistic ambitions (Hashim Awang, 1973)·

Although there was also a significant number of literary critism with Islamic backgrounds, literary criticism as a whole was the monopoly of the Western-educated. This is because literacy in the secular sense, apart from the traditional literacy in religious and Quranic studies had become common with the advent of mass secular education. Literacy is highly encouraged in Islam, in fact the first word uttered in the Revelation of Prophet Mohamed was 'Iqra' , which means *read* , but the implementation or manisfestation of the literary spirit was confined to reading aloud the Quran with little or no understanding. Thus critical traditions deeply rooted in the West, like individualism, were introduced only through Western education .

Critical reading or getting to the in-depth meaning of holy books is a highly prestigious scholarly exercise in the Muslim world, but it failed to make any inroads into the deeply religious Malays prior to western education as literacy was confined to the feudal elites around the palace grounds. In fact, even Abdullah Munshi would not have written such caustic remarks if he was not free from the royal order having obtained protection from his British friends (Safian H, Md. Thani A, & Johan J. 1981).

Malay society was feudalistic in nature, the highest Malay value being 'Budi' or personality ideal. Loyalty and integrity, truthfulness, kindness and humility are very pervasive. (Tham 1990). Critical thinking, in the traditional society at least, is an aspect which received little support or concern in the hierarchy of Malay values, in the interaction between the palace and their Malay

subjects, being critical was usually treated as dissent, uncooperative, negative behaviour in opposition to consensus and collectivism. In any case, critical thoughts should be kept to oneself for the sake of ' face saving '.

Besides critical thinking, reading is also a comparatively new habit which had not been fully cultivated in the culture. Although the written language had undergone three major script changes from Palava to Arabic to Roman letters, the tradition of reading was rather limited to the elite in the palaces. Traditionally, among the 'rakyat' (common people), the learning of 'reading' was limited to 'pronouncing' or 'reading aloud' verses of the Quran. As the possession of knowledge of the Holy Book is highly revered, reading traditionally, was also highly formalized with the purpose of comprehending and interpreting the true meaning of the Holy Word of God which is accepted as the Absolute Truth by Muslims. Critical interpretation and evaluation of the content of the Quran was therefore directed towards uncovering the actual, hidden meaning as the veracity, validity and authenticity of the Text had been accepted and established through religious belief.

Reverence towards reading, or the author of any written form, coupled with the tendency towards conformity could result in a society which lacks the active critical thinker valued by modern society. On the other hand, industrialization and modernization, in the form of education had somewhat changed the way of thinking, the pattern of relationship among families and general life-style creating tensions between traditions and modernization. In the West critical thinking is a valued commodity, highly pursued and even become the established criteria for admission to institutions of higher learning. With universal education through the English language, the Malays in Singapore had become bilingual and possibly bicultural adopting the core Malay and Islamic values while at the same time accepting certain Western values which may include critical thinking.

Within this scenario the present Malay student could be faced with the dilemma of cultural incompatibility and tensions between traditional practices and the demands of modern living. It will be interesting thus to find out how critically minded they are in their thinking and reading.

1.2 Aims of the Study

Recognizing the relevance of research in critical thinking and reading on Singapore students in general and the Malay students in particular, the present study is focused on the examination of the critical thinking and reading ability of Singaporean Malay pupils in Malay language.

The population to be studied is Singaporean pupils taking Malay as their second school language or *Malay as a second language* [7] as it is termed locally. The target group will be Malay pupils at the secondary school level, that is Secondary one through five; who are undergoing their schooling through the national education system.

The most crucial aspect of this empirical study is to acquire a set of instruments to measure the ability to read and think critically. Therefore to achieve the above research objective, a critical reading instrument to be called the Malay Language Critical Reading Test (MLCRT) and a Critical Thinking Disposition Inventory (CTDI) to measure pupils' ability and disposition towards critical reading and thinking will first be constructed and standardized. Both instruments will then be used to study the occurrence of critical reading and thinking 'in context', that is, the relationships between critical reading and thinking ability with selected learner variables such as the personal, social and language background of the pupils.

It appears that in selecting the area of critical reading, one is exploring the skills related to comprehension of the written texts or reading materials in the Malay language. From the standpoint of the Malay language curriculum, this area of research is of

importance as it attempts to understand the nature of critical reading and the specific skills underpinning the ability to read critically in relation to the pupils' ability.

1.3   The Need for Teaching Critical Reading in the Malay Classrooms.

The ability to read well in the mother-tongue has been a major objective of our education policy and is being explicitly stated in the curriculum.   Moreover, since critical reading is a form of higher-order reading ability (Stoodt 1989), the understanding of its nature and development will contribute to more knowledge and understanding in the area of critical reading comprehension in Malay language in particular and in the nature of critical reading ability in general.

Critical reading is especially important when one considers the recent drive towards the teaching of thinking skills in schools [8], whether teaching it directly as a separate independent programme or indirectly, through the incorporation of "more thinking components" in the various school subjects . Critical reading as the literature indicates is the application of critical thinking. While the theoretical contribution of this proposed study towards the infusion of more 'thinking' components in Malay language teaching could not be ascertained, the construction of the test materials developed for the study will be a direct material contribution to the subject area and the population concerned.   Knowledge of the pupils' ability in reading critically could be referred to in designing a reading programme that may include specific instruction in critical reading skills or in designing reading lessons that are structured to foster the development of such skills.

1.4.   Justification of the Study

In a research study undertaken by the Institute of Education, Singapore, on the functional objectives of Malay language learning

it was indicated that higher-order reading objectives specified in the Malay language syllabus, such as inferencing and finding the main idea of a passage, were found to be poorly performed by pupils at both the primary and secondary levels (Abdullah & Hadijah, 1989). Earlier, Supki (1985) found that it is in the higher cognitive taxonomy (referring to Bloom's Taxonomy on the cognitive domain), that is application, analysis and synthesis in reading comprehension tasks, that the Malay secondary pupils were weaker in, not in lower-order comprehension skills. In one respect, this study of higher-order reading skills focusing on the critical evaluation of reading materials is an extension of, or a more in-depth investigation into, one of these problematic aspects of reading skill identified in the earlier work. Consequently, the outcome of the study will increase our understanding of the nature of the different facets of reading, which is a prerequisite towards developing a more effective teaching and learning of the Malay language.

By conducting a simultaneous study on reading and thinking, a new understanding of the relationships and nature of these constructs or concepts will hopefully surface. Moreover, it will be of great benefit if, as the outcome of the study, critical reading and thinking skills could be incorporated in the language or reading curriculum for Malay pupils in schools. The findings of the study will provide useful feedback and information to policy makers and teachers in general, in their development of the curriculum and teaching materials.

The choice of Malay pupils, who are a minority in Singapore, as the subjects of this research could be justified as Singapore is not a homogeneous society, and studies done in Singapore normally pertain to the Chinese majority population. Moreover as the Malays form a distinct group separate or different from the mainstream Singaporean who are mainly of Chinese origin, they have a unique historical, cultural, religious and socio-economic orientation and perspective of their own. This cultural factor would not have

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totalled 2,263 or 25% of the total enrolment of 8,974 (Wan Hussein, 1990).

It is in subjects like Mathematics and English and Science that most Malay pupils are weak in (Appendices 6, 7). The strength of the pupils is in subjects like Malay language, Islamic Religious Knowledge (presently removed from the curriculum), and in the Arts. Therefore if any benefit can be derived in studying the critical reading ability in Malay language, the language in which these pupils are good at, the benefit could possibly have a multiplier or transfer effect to other subject such as English. The potential for transfer of reading ability in Bahasa Malaysia into English had been shown by Yap (1981). Reading ability in Bahasa Malaysia correlates with reading comprehension ability in English (r=.4696 significant at the .01 level): Yap posited that good L1 (Malay) reading comprehension helps reading in L2 English to a certain extent.

With this factor in mind, it is justifiable to attempt a study of only one ethnic group in Singapore so that a more in-depth knowledge and information which takes into account the unique situation a specific racial group could be gained.

Presently there is a dearth of research especially on Malay pupils in Singapore. Since the Malays form only a minority of the population, most of the research done on Singapore pupils actually focused on and drew upon the ethnic Chinese children as subjects of study and little or no distinction was made between the two groups in most of the findings. Gowan, and Torrance (1965) and Torrance, Gowan and Aliotti (1970), for example, studied the creativity of monolingual and bilingual children in Singapore, but very few of their subjects were Malay children and reports on the specific effect of monolingualism and bilingualism of Malay children per se are not unavailable. A similar though lesser situation applies to studies on Malaysian children where the composition of the sample may or may not include ethnic Malay

Available research on the Malays in Singapore was more focussed toward examining the social, economic and cultural factors that contributed towards their low academic achievement in schools in general. No studies have been conducted either in the area of critical reading in English or in Malay language, whether on the overall Singaporean children or specifically on the Malay students. This will be the first study to develop a standardized critical reading and thinking test in Malay.

So far research on critical reading in languages other than English has also been very sparse. Through this study on critical reading in the Malay language, evidence on the operation of the concepts and skills pertaining to reading critically in another language other than English will be available for later comparative purposes as well as to test the generalizability of the research findings on critical reading in a non-English context. The question of whether critical reading is a common skill applicable to any contexts or languages or whether it is a specific skill shaped by unique cultures and tradition could then be addressed.

What motivates the present study is also the under-achievement of the Malays in the socio-economic and educational field and the wish that the findings of the study could be utilized as a basis for educational improvement of the Malays. It was suggested by Keats, Keats & Rafaei (1976) that training in one language of a bilingual child could benefit the cognitive functioning in his or her other language. If this is true, then teaching critical reading in Malay will have the potential of exerting a beneficial effect on their acquisition of another language, English, and also probably on their academic performance in general.

Footnotes:

(1)   Report of the University of Cambridge Local Examination Syndicate (1985) , Singapore General Paper GCE 'A' Level Examination, Examiners' Reports on the work of candidates, Nov/Dec 1982, Part 3.

(2) Dr. Lee Tzu Pheng , National University of Singapore lecturer, reported in The Straits Times, 13th Sept 1990.

(3) Masuri, S.N. reported in The Straits Times 9th Sept 81.

(5) Sidek Sanif in a speech on reading at the Second national Reading Conference, reported by Straits Times, 2nd July 1988.

(5) Mohd. Adnan Mohd Ariffin (1990), Tikaman Bahasa. Kuala Lumpur: Dewan Bahasa Pustaka. Here he categorised the saying and proverbs into eleven sections, 1. Knowledge and advice, 2. Marriage and Family, 3. Means of livelihood, wealth , 4. Man's Fate, 5. Friendship, Animosity and Conflict, 6. Bad Conduct, 7. Lifestyles when in Abundance and Poverty, 8. Habits and Comparative Behaviour, 9. Respect and Humbleness, 10. Customs, Traditions and governance, 11. Miscellaneous.

(6) The definition of classical Malay literature made by Ismail Hussein (1974) in The Study of Malay Literature With A Selected Bibliography, Dewan Bahasa Pustaka, Kuala Lumpur.

(7) The term second language in Singapore refers to second school language or mother tongue. There are at present only three second languages, namely, Mandarin for pupils of Chinese origin, Malay for the Malay pupils and Tamil for Indian pupils although for some Indian pupils Tamil is not their mother tongue.

(8) The Straits Times, 23rd March 1988 reported a pilot project conducted by the Ministry of Education, Singapore, in the teaching of thinking skills using the De Bono method in 15 top secondary and primary schools in 1987.

(9) In the Singapore Primary School System pupils are channeled to one of the following streams at the end of Primary Three: Normal Bilingual course leading to the Primary Schools Leaving Examination (PSLE) in three years for those who passed Pr. 3 ; Extended Bilingual course leading to the PSLE in five years for those who failed Pr. 3 but passed Pr. 2; Monolingual course which is a non-academic course designed for the less academically inclined for those who failed both Pr. 2 and Pr.3.

(10) In the Singapore Secondary School System pupils are channeled to one of the following streams depending on ther PSLE results: The Special stream and the Express stream leading to the GCE 'O' in four years, and the Normal stream leading to the PSLE in five years for those who passed their GCE 'N' Level examination at the end of four years of secondary school.

CHAPTER 2
THE HISTORICAL AND EDUCATIONAL BACKGROUND OF THE
MALAYS IN SINGAPORE

2.1   Introduction

The purpose of this chapter is to present the historical developments of the Malays and education in Singapore. This is deemed relevant so as to provide a more comprehensive background to allow for a better understanding (than is normally the case) of the context, issues and its relevance to the present study.

2.2.   The Early History of the Malays in Singapore

Little was known and documented on the early history of the Malays in Singapore prior to the founding of Singapore by Raffles in 1819, except that it was one of the dependencies of the kingdom of Sri Vijaya centred in Sumatra, known then as 'Temasik'. In the Malay Annals it was recorded that it was Sang Nila Utama, a Malay prince from Sumatra who gave the name Singapura to Temasik upon which he built a settlement. Later it was overrun by the Majapahit kingdom of Java and until 1819 when Stamford Raffles founded a British settlement there, it was ruled by Temenggong Abdul Rahman a minor prince of the Johor-Riau empire.

The Malays are the indigenous people of Singapore and the archipelago. Today a sizeable population of Malays could be found in Malaysia, Indonesia, Brunei, Thailand and Singapore. The Malays are Sunni Muslims who stick faithfully to the school of Shafii. Islam had come to peninsula Malaysia in the 12th century via India through Muslim missionaries. Before the coming of Islam, the Malays were Hindus; and traces of Hindu influence in Malay life are still evident in non-material relics, like customs and ceremonies in birth, marriages, and the installation of a new ruler. However these Hindu influences are falling into disuse with the revitalized process of

Islamization and increasing modernization. Before becoming Hindus, the Malays lived in animism as was also a large part of south-east Asia then. The central figure in the traditional culture was the "pawang" or the shaman whose repertory consisted of the practice of magic, incantations, amulets and divination from leaves and candle flame. The traditional pursuits of the Malays were agriculture, fishery and seamanship. They were also good at weaving, wood-carving, bronze and silver crafts.

2.3 The Malay Language

The Malay language belongs to the Austronesian language families which originated from the Yunnan plateau of southern China. Two waves of large-scale migration which occurred between the year 4,000 B.C. and 1,500 B.C. had brought the Malay people to the area known as the Malay archipelago. Singapore is situated in the heart of this spread of islands and peninsula. Over the period of a few thousand years, several varieties and dialects of the language evolved, one of which is the southern-Malay dialect spoken by a large majority of the Malays in Singapore, southern Malaysia and parts of Sumatra. (Asmah 1983). This is the language now known variously as Bahasa Malaysia, Bahasa Indonesia and Bahasa Melayu and it is the symbolic national language of Singapore.

2.4. Political Developments in Singapore

When Raffles first landed in Singapore in 1819, there were about a thousand Malays with their ruler Temenggong Abdul Rahman, and an insignificant number of Chinese agriculturalists. Within four months of British rule and protection, according to Raffles, the population increased to about 5,000 people. In 1821 there was a Malay majority of 4,474 from a total population of 5,894 people, but by the turn of the century a stable pattern of ethnic composition of 72.2% (or 164,041) Chinese, 15.8% (or 35,988) Malays and 7.8% or 17,041) Indians was established. (H.E. Wilson 1978).

In 1832 Singapore, which had already made tremendous progress as a trading post, was made the centre of the Straits Settlement which also included Penang and Malacca. In the next 100 years Singapore grew in importance as a great sea-port and trading centre of the whole region. Political developments in the years following led to full internal self-government in 1959 with the British still controlling its defence and foreign affairs. In 1963 Singapore attained full independence by joining the Federation of Malaysia, but the marriage was short-lived - Singapore was separated from Malaysia in 1965 and became a republic, achieving full independence.

2.5. A Brief History of the Malays in Singapore

It had been established that the Malays had been the original inhabitants of Singapore and prior to the founding of the island by the British, there was already a stable social organization of Malays, the "Orang Laut" (proto-Malays) and a small number of Chinese. During the period of British rule, a significant number of Malays at first from Johor and Malacca (from the accounts of Abdullah Munshi) then from the peninsula and the surrounding islands, made their homes in Singapore. Sparse records of Malay movements were available but it is accepted that unlike the Chinese and Indian immigrants, normally whole families came out, probably because of the shorter distance and relative ease of travel. By 1930, the Malays formed the most settled of the three communities in Singapore, hence in the 1931 census it was recorded that 73,4% of the Malay community had been born in Singapore or elsewhere in "British Malaya", compared to 36% Chinese and 18% Indian (Wilson 1978). It is important to understand that in the Malay point of view they were the "sons of the soil" and their "migration" to Singapore was just a movement between one area to another or from the rural areas to the city. This fact had always been the underlying assumption of British policies, during the colonial rule.

2.6. The Malays and Education in Singapore

Prior to the introduction of modern secular schools, education for the Malays existed in small establishments concerned with religious instruction: the reading of the "Koran" and the teaching of Arabic. The beginning of modern secular education in Singapore was traced to Sir Stamford Raffles, the founder of modern Singapore, who initiated the establishment of the Singapore Free School, later renamed Raffles Institution in 1826. At the outset twelve Malay boys mostly related to the royalty were admitted to attend the first Malay class, and by 1840 the number had increased to fifty. However, this system was short-lived; it was discontinued in 1842. (Sidek 1990). As for the rest of the population, by the turn of the century, free elementary education for Malays, and a variety of private schools, government-aided schools were available.

In singapore as a whole, during much of the colonial period the system of education was characterized by separate independent systems or parallel streams of schooling based on ethnolinguistic differences. This is due to the initial lack of government interest and funding in education which led to the establishment of unaided Cantonese/Chinese schools and later English missionary and Indian schools. Initial government involvement in education was restricted to the encouragement of vernacular schools for the Malays and the award of grants to the English schools. In the early years of its establishment education was focused on the development of basic literacy and numeracy including the learning of local languages, such as Malay, Chinese and Siamese.

2.6.1 Education During the Colonial Period

The first Malay school, Telok Blangah Malay School, was established in 1856, which was soon followed by another in the same year. Then two more schools were built in 1867 and in 1878 including a short-lived college for training Malay teachers. It was encouraging that in 1919, a hundred years after the founding of modern Singapore, there were 17 Malay government schools for boys, 3 Malay government girls school and 2 Malay aided schools with a total enrolment of 1613 pupils. The grand total of enrolment in all types of schools in Singapore at that period was 11,079 pupils. Thus even during that period Malay school pupils formed 14.6% of total enrolment (Wilson 1978).

Gopinathan (1974) described the Singapore education system from 1900 to the outbreak of the Second World War as the period which saw the growth and extension of compartmentalization of education with different types of school systems - Christian mission schools, government Malay schools, government English schools and community and estate-run Chinese and Tamil schools. Schools were also divided along ethnic and linguistic lines, such as education through the medium of English, Malay, Chinese and Tamil. In addition there were differences based on the curricula and quality of teaching staff and resources.

With regard to Malay schools, lessons were restricted to learning reading and writing in the "Jawi" script. A report from the Select Committee of the Legislative Council in 1870 revealed that the vernacular schools had done "little or no good" and in almost every instance, the sole object of schooling was aimed to teach boys to read a few chapters of the Koran, without any teaching of general knowledge. The product of the Malay schools was therefore ill-equipped for a vocation, and no significant changes were implemented in the curriculum to address the issue, except that heavy emphasis was exercised on the teaching of basketry and

handicraft, even when such skills were found to be of little use in the Singapore context. Repeated assertions on the part of the government on the "dignity of labour" suggested that" in the official view at least Malays were a race apart in that, collectively and individually, they must necessarily have a special aptitude for handicrafts. A contrary view from the Malay perspective was voiced by Mohamed Unus Abdullah, a member of the Legislative Council who questioned the wisdom of the policy by asking how a Malay boy would become an up-to-date fisherman when he is no longer at the sea-front, how he could be a better agriculturist than his father when in Singapore there is no agricultural areas in sight. (Wilson 1978)

The effect of the official policy was unmistakably detrimental to the Malay students even though the system was intended to safeguard the socio-economic position of the Malays as a result of the massive immigration of the Chinese and Indians. In terms of funding, although the official policy was supposed to be supportive of Malay education, the Malay schools in actual fact received very little support in comparison to the funds received by English as well as even by Chinese education. In 1938, 19.1% of the government expenditure on the education budget was spent on English primary and secondary education, 4.2% on Malay education, 3.8% on Chinese education and 20.5% on vocational education. By 1954 the official expenditure on English and Chinese education had increased substantially, but the expenditure on Malay education dwindled to only 4%. The average cost to the government per Malay pupil was only in the region of $17 annually, whereas the average cost to the government per pupil in attendance at English medium schools was approximately $30. In summary it could be established that in policy and practice the colonial government had been more supportive of education for the immigrant population than the natives.

It was assumed that the Malays were not in favour of English education, but the following fact seems to contradict the view. It

was recorded that in 1920 despite frequent pleas forwarded by the Malays, Winstedt, the assistant director in charge of Malay vernacular education, continuously declined to permit the teaching of English in Malay schoo s. It was only after the Japanese occupation of the island that English was introduced as a subject in the Malay schools as had been implemented in the other vernacular schools.

Throughout the colonial rule higher education which only meant secondary school education for the Malay school leavers was non-existent. But Malay students who passed Standard 1V from vernacular schools before the age of eleven were permitted to continue in English schools. They were placed in intensive English Language classes and were expected to complete the equivalent of four standards in two years. While this policy is defendable to some extent because of the use of the mother tongue in the foundation stage, in practice, even the brightest Malay students found themselves at least two and generally more years behind students who had started their initial schooling in the English schools.

There was clearly a dichotomy between the government's expressed policy towards the promotion and support of the Malay education during the colonial and the implementation of the policy. Whether intentionally or unintentionally the system had provided most of the resources , facilities and funding to the immigrant population who were able to take advantage behind the policies, rather than to the natives. This inequality in the resources and benefits obtained through education among the natives and the non-natives created the germ for tension and resentment in future years. Thus the result of the educational reforms was divisive rather than unifying for the nation as a whole.

The diverging educational system produced at least two classes of people, the English-educated and the vernacular-educated people who were culturally, intellectually and economically divorced from

one another (Chai 1971). A small number of Malays did receive education from the English medium schools, but generally it was more accesible to children of the Europeans, the Straits Chinese and the Eurasians. It was only after the war that meaningful educational changes took place.

2.6.2. Education during the Post War Period

During the short period of Japanese occupation (from 1942 -1945) some form of limited schooling was available. Besides the introduction of the Japanese language and a more pragmatic and utilitarian form of the curricula, little changes were effected with regard to the school systems. The Malay schools and pupils were the least affected by the new regime, though enrolment understandably fell. On the whole the occupation of the region by an Asian imperialist opened the eyes of the Malays to the weaknesses of the Western powers thought to be impregnable otherwise; and the Japanese did succeed to fan Malay nationalism which had began to emerge just before the war.

With the reestablishment of British rule after the Second World War in 1945 there were expectations of major changes to come - changes in political, social and educational terms. In 1946, while Singapore was still under the Crown Colony, an educational programme referred to as the 10-Year Plan was introduced. Some of the reforms introduced included equal educational opportunities and the development of secondary, vocational and higher education. It was during this period that English was introduced as a subject in the Malay schools after the third year of schooling.

Following the introduction of English in the Malay schools, a Reorientation Plan was introduced for vernacular schools in which English was introduced from Primary One as a school subject right through to Primary Three after which all instructions in all other subjects except Malay language were to be entirely in English. At

the end of Darjah VII the pupils sat for the same Primary School Leaving Examination together with pupils from the English medium schools. The result of such a plan was disastrous: very few Malay pupils managed to enter in the English stream secondary schools, let alone pass the School Certificate Examination under such disadvantaged conditions. Most of the pupils who failed in the examination had to leave school as Malay secondary school was non-existent. It was under these circumstances that the Peoples' Action Party (PAP) when it came into power established the Malay secondary schools as recommended by the 'All Party Committee' commissioned three years earlier. Consequently the Reorientation Plan was abolished, and pupils were able to acquire a secondary education through the Malay medium. By 1963, the first batch of Malay medium students took their School Certificate Examination in the Malay language. The political climate wh ch was in the direction of merger with Malaya under Malaysia to a large extent acted as a catalyst in the sporadic expansion of the Malay secondary schools which peaked just before the political separation of Singapore from the Federation.

2.6.3 Education During The Post Independence Period

The post-Malaysian period marked a watershed in the history of education in Singapore. The necessity of charting an independent system forced some rethinking and the realignment of the national educational objectives to the more specific economic needs of the new nation. English, and not the Malay language, was promoted as the preferred language of administration, inter-ethnic communication as well as the language of education. To a large extent this pragmat c choice of the preferred language signalled the demise of the newly-formed Malay schools as well as other ethnic-language based schools of the Chinese and Indian communities. In the case of the Ma ay schools, the last cohort of Primary one pupils were registered in 1973 following the closure of the Tamil schools which happened a few years earlier. Supprisingly the demise of the

Chinese schools was arrested, with the timely intervention of the Special Assistance Schools (SAP) status to nine surviving Chinese schools then, mainly with the expressed purpose of maintaining the positive aspects of Chinese school traditions.

Although education through the Malay and Tamil mediums was not possible, the teaching and learning of the languages as a subject was preserved under the bilingual policy which had been the main 'pillar' of the education system. All pupils were required to learn their ethnic languages, grouped under the term "second language", if the medium of school instruction is in English. English is termed as the "first language" as it is the language of instruction in all schools. A pass in second language is a compulsory admission requirement in Junior Colleges, Pre-university Centres as well as tertiary institutions.

The main motivation behind the compulsory learning of second languages or mother tongue is to maintain the various Asian cultural roots and traditions to the younger generations who showed trends of becoming "culturally bankrupt", and uprooted from their own rich traditions   Furthermore,

> *the traditional values of the East in Chinese, Malay and Tamil culture can be diluted and dissipated as these non-English-medium schools are phased out.*

(Seah and Seah 1983:255)

Thus with the whole school population within the national system of education through the English medium of instruction, another phase of development had been achieved. Yip et al (1990) described this period (between 1965 - 1979) as a period of "qualitative consolidation". Many imaginative and innovative ideas were introduced. The first to be tried out was the "integrated school" system where pupils from different mediums or streams shared the same building and administration, then came the "language exposure" policy, the "basic school" system and many others. Despite these

changes, a major restructuring of the education system covering the management of schools, the curriculum, the educational administrators at the Ministry, teachers professionalism, was implemented following the publication of the so called Goh Report (1979).

The Goh Report recommended a new education system based on the academic streaming of pupils at the primary, secondary and post-secondary levels. The rationale behind streaming was that this could provide an opportunity for the less able pupils to develop at a slower pace than the more capable ones. Streaming at the primary level was based on performance in class tests, and at the point of admission to secondary schools, on performance in an end-of-primary-level examination known as the Primary School Levaving Examination (PSLE). Streaming at the post secondary level was also based on performance at a national examination. The abler group will take their GCE 'A' Level examination in two years at the Junior Colleges whereas the other pupils who also qualify but have poorer results will take the same examination in three years time at the Pre-university Centres. Lateral transfers were permissible if the pupils showed that they had passed the specific school or national examinations.

The outcome of the New Singapore Education System was a more effective schooling in terms of the number of passes at the PSLE, GCE 'O' Level, 'N' Level and 'A' level examinations. Prior to the implementation of the New Education System (NES) more than 60% of pupils who sat for their PSLE and 'O' Level Exam failed in one or both languages (English anf the mother tongue). Only 19% of each cohort passed in both languages at 'O' Level.

The nineteen-eighties marked another significant phase of educational innovation in all school levels and tertiary institutions with emphasis now focused on the goal of achieving excellence in education. This is now reflected in the various policies and

management changes in the schools, colleges and universities. This striving towards excellence in education reflected greater understanding and the close relationship between the various social and economic institutions and education. Not least is the greater realization of the value to be achieved by the proper use, organisation and exploitation of its human resources .

More recent changes in the education system (Appendix 8) have been implemented in 1993 where in the primary school system, Primary 4 pupils who sat for the streaming examination will be channeled to EM1 (English and mother tongue at first language level), EM2 (English at first language level and mother tongue at second language level) and EM3 (English and mother tongue at oral proficiency level), based on their ability. After the Modified PSLE (in secondary schools) pupils will also be channeled to different courses where English and mother tongue learning form the basis of streaming. Beginning from 1995, Mother tongue languages will be taught as Basic Chinese, Malay or Tamil, or Higher Chinese, Malay or Tamil depending on the pupil's academic stream - Normal Technical, Normal Academic, Express or Special Express Stream. The vocational institutes were also upgraded to the Institute of Technical Education where pupils who were unable to gain entry into the Junior Colleges and Polytechnics may continue their education.

2.7 The Context of Malay Language Learning in Singapore

In the Singapore education system, it is compulsory for every student to learn both English and his or her mother tongue namely, Chinese, Malay or Tamil (which was recently modified to include a number of Indian languages. In the case of Malay pupils they will be required to learn English, which is the language of instruction as the first school language, as well as learning Malay as a second school language. Presently at the secondary level, Malay is taught as a Second Language, but beginning from 1995, depending on the pupil's stream in schools, Malay will be studied as Basic Malay, Malay Language or Higher Malay. The main objective of learning the mother tongue is to enable the pupils to gain an insight into their own ethnic and cultural traditions and values associated with their ethnic origins.

The assumption behind this policy is that the learning of one's own ethnic language will provide an access to a more effective inculcation and appreciation of one's cultural identity. It is believed that the loss of ethnic identity, deculturation, and the consequent rootlessness, seen in the acceptance of some Western values and life-styles among the young Singaporeans, are the consequence of the loss of mother-tongue competence (Gopinathan 1980). Thus this inculcation of the positive aspect of Asian values through the teaching of the specific ethnic languages is deemed necessary as a protection against excessive influences of westernization.

In general, there was less adoption of western culture among the Malays, observable in the sparse use of English as home language compared to other communities in Singapore, but the recent figures released on the languages Singapore pre-school children use most frequently at home (see Appendix 9), indicated that 89.3% of the Malays speak their mother tongue at home, whereas only 67.9% of the Chinese and 30% of the Indians do so with regard to their own mother tongues. This was cited as one of the causes for the lower

performance of Malay students in schools relative to that of other ethnic groups as English is used as the medium for teaching all school subjects. (Bibi Jan Ayub 1992).

2.8 Educational Challenges Facing the Malays

One of the major challenges facing the Malays in Singapore is in education which is perceived as instrumental in social mobilty and economic advancement. The general view, like the one expressed by the then Prime Minister, is that:

Malays, unlike the Indians and other minorities,
had not risen up through the school system and
into the university. (1)

Frequently cited was the comparatively poor performance of the Malay pupils with respect to that of the other racial groups (refer to Appendices 1, 2 and 3). The Malay pupils were identified as being weaker in English, Mathematics, Science and other academic subjects.

A larger number of Malay pupils were enrolled in the weaker academic streams such as the Monolingual and the Extended streams at the primary level, and at Normal stream at the Secondary Level, in relation to other ethnic groups. (Data provided in Appendices 4 and 5). Fewer Malay pupils qualify for the Junior Colleges and at the universities. In 1983 there were only 384 Malay undergraduates in the National University of Singapore and for the year 1982/83, only 291 Malay students were enrolled at the Singapore Polytechnic with a further 106 students at the Ngee Ann Polytechnic. These figures compare unfavourably with enrolment figures at the less prestigious Vocational Institutes where a significant number of those enrolled were Malay students who totalled 2,263 or 25% of the total enrolment of 8,974 . (Wan Hussein 1990).

Various attempts by the community in their effort towards the betterment of their educational standing were made. Particularly evident is the contribution of the various organizations like MENDAKI, AMP, Majlis Pusat, MUIS and others in conducting week-end classes, tuition and in the awards of bursar'es. One common call made by the Malay leaders is the lack of research on Malay pupils which could provide some kind of data or framework for further improvements.

FOOTNOTES:

(1) Lee Kuan Yew, 15th July 1990 in a statement addressed at the People's Action Party Malay Affairs Bureau.

PART TWO

REVIEW OF LITERATURE

The major approach taken in reviewing the literature pertaining to critical reading presented in this section is as follows:

Chapter 3 will review the definition of critical reading and its place in the context of reading comprehension and critical thinking. This will then be followed by Chapter 4 which will discuss the measurement of critical reading and thinking ability as well as highlight some of the measures developed to test the construct. Finally, Chapter 5 reviews the relevant research on the factors related to critical reading ability and its teaching.

CHAPTER 3
THE DEFINITIONS AND NATURE OF CRITICAL READING

3.1. Introduction

Critical reading had taken root from two of the most important and long-established disciplines - that of philosophy and psychology. But it is in education that it makes the greatest impact and contribution, particularly in the teaching of reading and the more recent interest in the *teaching of thinking*. A review of the development of the concepts of critical reading shows its myriad interpretations and how it had developed from a little known construct to its more recognizable and stable form gaining a special place in the field of reading and thinking research.

Research into critical reading more commonly labelled as 'the application of critical thinking in reading situations' had started about the 1920s after Thorndike's (1917) influential statement that reading is reasoning, and good reading involves critical thinking. Thus an inextricable link was forged between critical thinking and reading, which actuallized in the label 'critical reading' being used by what is now regarded as classic research in the area of critical reading.

The development of critical reading had since followed just behind the main thoughts in both the reading and the thinking movement, whether in the aspect of theory or teaching application. Consequently, any new developments in either of the fields are bound to affect the nature of, the interpretation and therefore the focus of research in the area.

3.2. The Definitions of Critical Reading

The definitions of reading as of critical reading have changed markedly over the past 70 years not only through research in the field of reading, but rather it being embedded in the two main areas of general reading and thinking. Critical reading has been viewed both as a product as well as the process of reading comprehension and critical thinking. The present sect'on will thereby attempt to

trace the development of reading and define critical reading in relation to the general reading comprehension context.

3.3 Critical Reading and Reading

The traditional definition of critical reading placed it as a subset of reading comprehension. Reading comprehension in turn was also a component of reading. Therefore before attempting to define critical reading, a brief discussion of what reading is, should be attempted.

Reading is recognized as an extremely complex task, which depends on a multiplicity of perceptual, linguistic and cognitive processes. Early theorists such as Bloomfield described it simply as:

> *producing the phonemes of one's language when one sees the written marks which conventionally represent these phonemes.*

(Bloomfield 1961:10)

When reading, readers were thought to proceed letter by letter to unlock the sounds, combine them into words, then string the words into sentences. Once the sentences are in oral form, comprehension was thought to take place automatically.

The above conception of reading that focuses on the encoding of symbolic features of the written word, which Perfetti (1988) termed as 'apprehension' , represents the position of the '*bottom-up*' *theories of reading*, 'bottom-up' meaning beginning from the texts to the reader (McCormick 1988). Therefore as a prerequisite to comprehension, it is the ability to decode or translate printed symbols into the understood language (Turner 1988). This is demonstrated by LaBerge and Samuel (1977), where children are shown to be unable to simultaneously give adequate attention to both decoding and comprehension. The author concluded that in order for a reader to attain complete comprehension and understanding, decoding must become more or less automatic.

Typical, was Smith's (1975) contention that fluent reading entails two fundamental skills: firstly, the prediction of meaning and the

"*sampling* " of surface structure sufficiently to make predictions certain; and secondly, making the most efficient use of cues to meaning available from visual information found in the printed text .

But further developments view reading as more than a mechanical skill that entails the decoding of written symbols to sounds, it is even more than the ability to understand the word, the sentence or the explicit meaning of the text presented. Reading in essence is a constructive thinking process that includes the *comprehension* of explicit and implicit meaning of texts and it is in this slot of reading comprehension that critical reading occupies.

Gans (1940), Smith (1972) , Sochor (1959) , and Wolf et al (1968) among many others all defined critical reading as a type of reading comprehension and the skills pertaining to critical reading includes a number of reading comprehension skills. Crossen (1948) is one of the early writers of critical reading who believed that critical reading involves a number of general comprehension skills such as:

- gaining a clear and correct grasp of the sense meaning of the selection read,
- gaining an accurate perception of relationship, both expressed and implied,
- evaluating precisely the content as to its validity, comprehensiveness, accuracy and usefulness to the reader's purpose, and
- drawing correct conclusions, and making valid inferences about what is read.

Before 1959 the term 'crit'cal reading' was used by authorities in three ways; firstly as a major heading under reading comprehension ; secondly, as a higher level general comprehension activity, and finally as a rather specific comprehension ability (Sochor 1959).

Gans (1940), for example also used the term 'critical reading' to refer to specific ability in solving comprehension problems beyond what is explicitly stated: namely in distinguishing the relevant from the irrelevant materials in problem solving. As a sub-set of comprehension skill in the total framework of reading, critical reading was thought to encompass a set of skills that can be

distinguished for the purposes of instruction and measurement, but is not completely separable from other reading skills. (Wolf et al 1968)

Other researchers were more bent towards defining critical reading not only as a set of specific skills of reading comprehension, but as a higher level comprehension ability or what is now popularly termed as 'higher-order' comprehension ability, a term used with reference to Bloom's cognitive taxonomy. But regardless of how the term is used, Sochor claimed that

> *it invariably represents reading comprehension that involves, firstly the facts as presented in the selection of text, and secondly, the use of higher mental processes.*
>
> (1959:47)

3.4   Levels of Reading Comprehension and Critical Reading

The question of levels of reading comprehension preoccupies a substantial number of reading theorists like Smith (1972), Rosenshine (1980), Carver (1973), among others. This issue will be discussed as it directly affects where and how critical reading is conceptualized in this bottom-up perspective of reading.

The main lines of thought underpinning the idea of levels of reading comprehension refer to the degrees of difficulty or complexity of the process involved in the act or the skill of comprehending. Some skills were thought to be easier to achieve, some other skills were classified as basic and necessary before other higher or superordinate skill could be functional. But despite some inconclusive evidence many theorists agreed that the most basic and fundamental level is the *literal level* where the reader reads in a somewhat passive and receptive manner, in other words he is trying to receive only what the author had to say. Next is *interpretative* reading, which is reading beyond the lines or between the lines. The reader is thought to bring knowledge and experience to the act of reading, draws inferences, and applies reading to life situations; but no interaction between prior knowledge and reading was mentioned.

In this connection, Betts (1950) identified two types of reading comprehension, the *assimilative type* and the *critical type,* although he asserted that depth of comprehension is a matter of degree. Reading of the assimilative type emphasizes the identification and recall of facts whereas reading of the critical type emphasizes higher thought processes having to do with the selection of ideas and the organization of information. To him both the assimilative and the critical type of reading comprehension are not dichotomous.

Pursuing the same question of levels of comprehension, Sochor (1959) in her research on critical reading in Social Studies and Maney (1958), studying the same topic in Science, defined critical reading as the ability to obtain a level of interpretation higher than that needed for literal interpretation. They listed thirteen reading comprehension skills as representing critical reading or higher comprehension.

Smith (1963) went further to place critical reading at the highest level beyond the literal as well as the interpretative level of comprehension in his hierarchy of reading skills where literal reading, that is understanding the denotation of words, ideas, or sentences in context, came first; second comes, interpretative reading , which is obtaining deeper meanings not directly stated in the text, and, finally, critical reading, the highest level, which includes skills such as evaluating the quality, the value, the accuracy, and the truthfulness of what is read.

This is in contrast to what Gray (1949) earlier believed - that literal reading has a critical nature because getting the literal meaning necessitates the accurate perception of words, the fusion of separate meanings into ideas, grasping the organization and relationship of ideas, and a reasonable fluency of perception. There is thus some overlap of the terms used: literal reading in some way overlaps with the term assimilative reading; namely in the type of skills involved.

Thus although there is some d'sagreement in what constitutes critical reading, most researches have contended that critical

reading ability cannot be inferred from a measure of literal reading although literal and critical reading cannot be separated entirely . In other words, in order to read critically one must be able to comprehend the literal message intended by the person writing the material.

Taking the same line of thought, Artley (1959) stated that although literal comprehension is ordinarily conceived as the process of identifying and recalling facts, it need not be a non-critical process, he added that

> *the process of securing an author's ideas as he states*
> *them may involve varying levels of criticalness ranging*
> *all the way from a low-level type of interpretation to a*
> *very careful and critical   analysis.*

<div align="right">(Artley 1959:123)</div>

A substantial body of research in reading comprehension focussed on the investigation into this question of levels or hierarchies in reading which are closely tied to the question of what are the skills or abilities which is unique to reading comprehension and hence to critical reading, and are these unique skills distinct in nature. Smith, Carver, Davies, Spearitt and others had attempted to examine the above questions empirically.

In reviewing the issue of levels or lists of comprehension skills enumerated by reading researchers across five fairly authoritative reading organizations, Rosenshine (1980) found that the number of skills could generally fall into three general types: locating details which are the simplest and involve recognition, paraphrase and/or matching; simple inferential skills which refer to the ability to draw inferences after reading short segments of a passage and complex inferential skills which includes the ability to draw inferences after reading longer segments and passage.

Some *unique* comprehension skills were also cited by Rosenshine (1980). These representative skills have a bearing on critical reading as it shows much overlap between reading comprehension skills and   critical reading skills.   Some of the skills relevant to critical reading are stating point of view from which story is told, giving an account of similarities or differences in the content or

plot of selections, making inferences about what would happen if circumstances were different, and evaluating ideas in a selection. Others such as 'listing characters to match given dialogues, giving setting or time and matching characters with their traits, actions and speech" are more general in nature. But Rosenshine summarized that there was a consensus among researchers that reading comprehension entails about seven skills:

- recognizing sequence,
- recognizing words in context,
- identifying the main idea,
- decoding detail,
- drawing inferences ,
- recognizing cause and effect, and
- comparing and contrasting.

(Rosenshine 1980 : 540)

But empirical supports for the discreteness of these skills were lacking. Davies (1968 and 1972) attempted to obtain empirical support for the distinctness or discreteness of these comprehension skills. Using his most thoughtfully planned and meticulously gathered set of data, Davies selected test items to measure eight hypothesized reading comprehension skills, did item analysis on those items and then categorized the homogeneous items representing the skills studied. After employing "uniqueness analysis" Davies identified five unique skills. These were:

- recalling word meanings
- finding answers to question
- drawing inferences from content
- recognizing a writer's purpose, attitude, tone, or mood, and
- following the structure of the passage.

Some of these skills were rather vague and too general, such as finding answers to questions. In 1972 Davies applied factor analysis to the same data and four clear factors out of the original five, emerged. However his analysis could not be fully supported as he factor analysed the subtests or components of reading comprehension instead of pooling all the items together.

Subsequently Spearitt (1972) and Thorndike (1974) also reanalyzed the same set of data to confirm or reject the presence of unique skills in comprehension. Spearitt (1972) applied "maximum

likelihood" factor analytic procedures to the data and obtained four separate skills:

- recalling word meaning
- drawing inferences from the content
- recognizing a writer's purpose, attitude, mood, and tone
- following the structure of the passage

Finally, Thorndike's reanalysis of the data however, failed to distinguish any unique comprehension skill. Thus there were few consistent findings relative to the large number of skills that could statistically be identifiable as discrete reading abilities.

The above account of the research on skills of reading comprehension shows clearly the main problems in defining the specific skills that could be called comprehension skills, clearly empirical support for such a notion is at best incomplete. Looking through the list of skills, the above studies revealed that at least two of the skills which were empirically supported could be classified as critical reading skills, namely drawing inferences from content and recognizing a writer's purpose, attitude, mood and tone.

Clearly critical reading and reading comprehension skills overlap in some instances but most reading theories contended that critical reading be placed at the highest levels or hierarchy of reading skills if there is a hierarchy at all (Turner 1988). Some explanation is indirectly provided by Cunningham (1987) who advanced a useful distinction between the 'process' of discourse comprehension and the 'product' of comprehension. While both the process and the product of comprehension involve the use of prior knowledge, he asserted that it is the *product of comprehension*, that is, what is retained in semantic memory, that may be described as literal, inferential and creative depending on the mixture of textual and schematic elements which make them up. These distinctions, he added, are not distinct levels of comprehension, but are levels for overlapping areas on a continuum between the purely textual or literal and the purely schematic or creative .

Literal comprehension products are simply those products that have deep structure equivalents in the text. In Cunningham's opinion, a literal "product of discourse processing" would be one that, if it could be compared to the text, would be synonymous in meaning to part of it .

Inferential comprehension products, Cunningham argued, are those that contain a mixture of textual and schematic elements in combinations, lack deep structure equivalents or equivalence in the text, neither deny nor ignore any part of the text and it completes or extends the text consistent with the comprehender's expectation, purposes for comprehending, or knowledge. To him inferential comprehension products that consist almost entirely of schematic elements are termed creative response. The term 'creative response' could be a level by itself or a sublevel of inferential comprehension It is clear that critical reading falls under creative reading, and to a certain extent the process inferring also involved critical evaluation.

The question of hierarchies of skills in general reading comprehension therefore was unsupported by research evidence (Rosenshine 1980). Sochor (1959) and Maney (1958) whose studies will be discussed shortly found that critical reading is in fact, in the higher hierarchy of reading comprehension levels. More recently various authors on critical reading such as Turner (1988), Stoodt (1989) implies hierarchy in general reading comprehension when critical reading is classified as higher-order reading comprehension.

Can critical reading itself be subdivided into subcritical reading skills or levels within the reading comprehension hierarchies? Hypothesizing the answers to this question had been the main preoccupation of critical reading researchers who were beset with other conceptual issues of critical reading. These will be dealt with subsequently. For the present, we shall summarize the definition and nature of critical read ng in terms of the process and product of reading comprehension.

3.5 Critical Reading as a Process of Reading Comprehension

Critical reading as most researchers agreed is a higher form of comprehension - seen as a *product* of comprehension it is a state where the reader is able to uncover the implicit meaning of the written word, the motive of the writer based on his background knowledge and experience. Frank Smith (1982) described this 'state of comprehension' as a condition *where no uncertainty exists that is when we have no unanswered questions.* In other words a critical reader has achieved the state of critical comprehension when he or she is satisfied that the inferences or meaning he obtained from reading is consistent with his own interpretation, when all contradictions are resolved.

Another way of looking at comprehension and therefore critical reading is describing it as a *process* of achieving comprehension. Undergoing the process of comprehension, the reader is actively working out the meaning of the text as it should be intended by the author or as what seemed true to him. This is in line with the theory of reading comprehension known as the 'top down' theory where the meaning does not reside in the text, it is the reader who is not only engaged actively as a responder to the text but is also bringing in and contributing his own past experiences and pre-existing world knowledge with him . In other words, reading is interacting or *communicating* w th the text and the author (Widdowson 1978). Following this it is therefore fair to conclude that critical reading is communicating with the author and the texts before any judgment on the validity or the veracity of the material could be made.

Spiro et al (1980) viewed reading as a multilevel, interactive process, that is a text must be analyzed at various levels, with units of analysis going from the letter to the text . In addition to processing the explicit nature of the text, the reader must bring considerable preexisting knowledge to the reading comprehension process. The interaction of text-based and knowledge-based processes and of levels within each is essential to reading comprehension. Because the meaning of the text is only partially determined by the text itself, reading must be an inferential,

constructive process characterized by the formation and testing of hypothesis or models about what the text is about. This process is similar in many ways to problem-solving. Finally according to Spiro (1980) reading is *strategic.* It is a flexible process that is adapted to the purposes of reading at a given time and is monitored to determine whether the purposes are being met.

In summary, effective reading and therefore critical reading then, must be an interactive communicative process, what the author said must make sense, be consistent with reality as is understood by the reader besides with itself, and it must be united around a single goal or the main idea around which a passage is organized. If the meanings are obscure then there will be delay in decision until further reading offered a meaning that had the characteristics that facilitate comprehension, such as having internal consistency, is consistent with reality and with the overall goal of the passage and the reader. Meaning is therefore 'constructed' as opposed to being 'extracted' from the text.

The above 'process perspective', has important bearing on how critical reading is understood and defined. Many theorists shifted or focused their definition of critical reading away from the 'level or hierarchy' perspective, basing it instead on the 'process' framework. Worden (1981) for example declared strongly that critical reading is not a product but a process of thinking. This process element concurs with the way critical reading process is described both as a thinking product and as the process of comprehending a written text or text processing. The schema theory of reading comprehension provides an explanation of how the reading process is envisaged. It offers an influential significance in understanding the nature of reading and critical reading comprehension and is discussed below.

This nature of text-processing and how prior knowledge of the reader is organized before resulting in 'comprehension', which was investigated by Kintsch and Yarbrough (1982), Rumelhart (1980) and van Dijk (1977) opens a deeper understanding to reading comprehension process (hence critical reading comprehension) and is described below.

Kintsch, W and Yarbrough J.C. (1982) in analysing text processing done by readers noted that a reader may comprehend the words but not the meaning of a sentence, or can understand sentences but still be confused by the overall organization of the text. They then identified two levels of comprehension: firstly the *micro processes* that involve *local understanding* of the text that proceeds phrase by phrase and sentence by sentence with attention to all the details in the text. The second level is the *macro level* which is concerned with global understanding, with how readers form an overall idea about the gist of the text. But they maintained that these levels of comprehension are not perfectly correlated; hence a text may be difficult to process at the micro level but not at the macro level, and vice-versa.

Readers were understood to use various strategies in executing a series of steps in the comprehension process that will assure adequate understanding relative to comprehenders' goals and available cognitive resources. Readers learn to rely on cues in a text that can help them to derive meaning. Rhetorical strategies provide means for forming the macrostructure of the text (that is the gist, overall organization and main points). Hence a well-formed rhetorical organization of the text should facilitate macro-structure formation. However it need not have any effect at all on the local processing of the text.

Van Dijk (1977) and Kintsch (1977) working on text or discourse comprehension described a model of the processing stages of comprehension which extends from sensory input to behavioral language use ("speech acts") in "response" to the text. Intermediate to these are stages of word identification, syntactic analysis, (which yields linguistic structure), semantic analysis (which yields conceptual or propositional content), and pragmatic analysis, yielding the topic of discourse. These stages are interactive and recursive.

The two "stages", that is, the semantic and the pragmatic stages are both reductive: the semantic stage reduces phrases and sentences to propositions; while the pragmatic stage further reduces this propositional microstructure to the propositional macrostructure.

The formation of "macro-structures", which are in fact summaries is central to the comprehension of discourse. The macro structures of the text are a higher level version of the text that are presumed to be the underlying components of the text structure that are stored by an individual (Scardamalia and Bereiter 1984). These

> *Macro-structures are assumed to be semantic structures of discourse whose meaning and reference is defined in terms of their constituents' meanings. . . . the meaning of macro-structures is a function of the meaning and of the constituent propositions.*

(van Dijk 1977:28)

These macro-structures are formed in the course of reading a text by means of four macro-rules which according to van Dijk are :

1. generalization - which generalizes proposition and sequences of proposition to a "super-concept"
2. delet'on which "deletes full propositions" which are irrelevant";
3. integration which deletes information which "has been integrated into another proposition of the discourse"; and
4. construction, which is perhaps most characteristic of all macro-rules as it organizes micro-information by combining sequences of propositions which function as one unit at some macro-level. It reduces information without simply deleting it; and it introduces information at the macro-level that is "new" in the sense of not being part of the text base .

Thus during the process of comprehending generalization of the relevant information, deletion of irrelevant information, integration of information and construction of new information occur to form macro-structures. These new information are in fact 'reconstructed' during the occasion of recollection from specific memories. The basis on which these memories are reconstructed is called the 'schema'.

The *schema theory* was thus focussed on kinds of knowledge, how knowledge is stored and how it can be accessed and used by the reader or thinker in the process of comprehension. The central notion to this theory is that all knowledge is packaged into units which are the schemata, an abstract representation of gener'c concept of an object, event or situation.

These schemata, the highly abstract mental frameworks of knowledge, operate in a superordinate fashion to interpret information. Individually, schemata is a protypical representations of some aspect of world knowledge, and contain slots or placeholders which can be instantiated through an assignment of values (or information) from either the environment, memory or by default (inferred values). The knowledge contained in schema is *our conventional knowledge of the world* (van Dijk 1977:18) and according to Rumelhart,

> *it extends at the upper levels to ideologies, and at the lower levels to patterns of excitations associated with letter-recognition. Thus all our generic knowledge is embedded in schemata which can be instantiated during the process of comprehension.*

> (Rumelhart, 1980:40).

A reader thus comprehends a message if he or she is able to construct or activate a schema that gives a good account of the objects or events described. Thus 'instantiation' is a process of finding the most plausible interpretation of new information in order to integrate it with the existing information provided in the text.

The process of comprehension is identical to the process of selecting and verifying conceptual schemata to account for the situation or text to be understood. Accordingly to Durkin (1980) reading comprehension involves:

> *filling the slots in the appropiate schemata in such a way as to jointly satisfy the constraints of the message and the schemata .*

> (Durkin 1980:6)

Nevertheless, schemata can also differ with respect to the degree of detail with which they account for a situation. This can be attested by passages which can be understood at many different levels of abstraction such as a passage which, depending on the levels of detail and specificity of the structure of the schemata, could be interpreted differently to depict either a conversation, a conflict, a case of exhortation or a threat. Ordinarily a situation is not accounted for by a single schema, but a set of interre ated schemata.

3.6 The 'Schematic' Explanation of Critical Reading

The schema theory of course applies to critical reading. The gist of the schema theoretic view to critical reading could be summarized thus:

- critical reading is a process of attaining comprehension.
- the reader already has a schema or meta-knowledge about reading as well as the content.
- during comprehension the reader instantiates the relevant schema or schemata that helps him to interpret the texts
- more than one level of schemata instantiation could occur until a stage of consistency is reached.

Critical reading therefore involves ongoing assessment of the text and the author: the reader weighs and compares the meaning, where sometimes more than one coherent version is possible.

The schema theory suggests the 'instantiation' of background knowledge of the reader in the process of comprehension. It could be infered that the critical reader as opposed to the 'naive' and 'passive' reader would have developed a predisposed 'critical schema' that acted as a sift towards the extraction of meaning from the text. The levels of the true meaning of the text as opposed to the intended meaning of the text could be more transparent to a reader who possessed the relevant critical schemata than those who are not so disposed.

We have discussed that the process of reading critically could be explained in part if not wholly by the schema theory. But the schema theory itself founds parallel in critical thinking, as Rumelhart posited as the ability to evaluate written works from a variety of vantages both external and internal to the text, allows a reader access to higher levels of comprehension.

The next section will therefore discuss the definition and nature of critical reading with reference to critical thinking theories.

3.7 Critical Reading and Critical Thinking

Besides reading comprehension the other twin forming the basis for the definition and nature of critical reading is critical thinking. Critical thinking has usually been defined in terms of thinking process. Such stable definitions of critical reading as *critical thinking applied during reading situations*, as provided by Russell (1956) are consensusly adopted by many reading theorists. Mainly critical reading is defined as *involving higher mental processes* (Petty, 1956, Stoodt 1989, Thistlewaite 1990), it involves *thinking beyond simple recall* (Williams 1959) and *analytic thinking* (Turner 1988). To Sochor, (1959) thinking is abstract and symbolic, utilizing what are commonly called experiences. These experiences are related and organized into concepts and generalizations and applied as needed during reading. Critical thinking at times appears to be differentiated from thinking in general but it has an inseparable relationship with critical reading. The inseparable nature of critical reading and thinking is best illustrated by Petty, (1956) in describing the thinking that goes into reading,

> to really think while reading, to evaluate, to judge what is important or unimportant, what is relevant or irrelevant, what is in harmony with an idea read in another book or acquired through experience, constitutes critical reading ability. (Petty 1950:300)

The concept of critical thinking could generally be traced back to the work of John Dewey (1909), who first discussed *reflective thinking* in his book *How We Think*. In 1941 Edward Glaser conducted an experiment into the teach·ng of critical thinking using a range of teaching materials which he devised, based on a number of specific critical thinking abilities such as distinguishing relevant from irrelevant writing. The pupils' *critical thinking abilities* were assessed at the end of a ten-week course on the subject, taught by teachers trained by Glaser. These critical thinking abilities were applied during the reading task.

Russell (1956) not only defined critical thinking as involving the inspection of facts and includes arriving at some conclusions with

regard to verbal and non-verbal statements. Thus he said that critical thinking is:

> *the process of examining both the concrete verbal materials in the light of related objective evidence, comparing the object or statement with some norm or standard, and concluding or acting upon the judgment made.*   (Russell 1956:301)

It was Ennis (1962) who pioneered the basic inquiry into the field of critical thinking through his detailed and complex conceptions of the fundamental proficiencies and dimensions of the correct *assessing of statements* . *Assessing of statements* can involve *reading,* o r *listening* to statements being communicated. His detailed scheme for the analytically distinguishable dimensions of the concept of critical thinking were initially the *logical dimensions* which cover judging the alleged relationships between meanings of words and statements, such that a person who is competent in this dimension knows what follows from a statement or groups of statement by virtue of their meaning. Another one, the *criterial dimension* covers the judgement of idea presented, while the *pragmatic dimension* covers the impression of the background purpose and the decision; that is whether the statement is good enough for the purpose (Ennis 1962).

Ennis listed twelve aspects of statement assessments some of which overlapped, covered by or were embedded to the three dimensions mentioned earlier. These aspects formed the basis for competencies or abilities underpinning the behaviour of the critical thinker. The lists of the aspects were :

* grasping the meaning of the statement,
* judging whether there is ambigu'ty in a line of reasoning,
* judging whether certain statements contradict each other,
* judging whether a conclusion follows necessarily,
* judging whether a statement is specific enough,
* judging whether a statement is actually the
   application of a   certain princip e,
* judging whether an observation statement is reliable,
* judging whether an inductive conclusion is warranted,
* judging whether the problem has been identified,

- judging whether something is an assumption,
- judging whether a definition is adequate, and lastly
- judging whether a statement made by an alleged
  authority is acceptable.

(Ennis 1962:84)

It can be seen that the above list is no different from the skills in critical reading except that it is more broadly based to include listening skills as well as reading skil s. The above list of proficiencies and skills of the critical thinker was by far the most detailed and complex developed, but something more than skill appears necessary for critical thinking. In recent years Ennis (1985) expanded the *pure skills* conception by adding a set of tendencies termed *dispositions* requisite for critical thinking. The list of dispositions includes such characteristics as being open-minded, paying attention to the total situation, seeking reasons, and trying to be well-informed.He posited that the critical thinker not only uses both the skills or proficiencies but also exercises those proficiencies. Retaining much of his earlier conceptions of critical thinking, in 1987, Ennis simply defined the concept as *reasonable reflective thinking that is focused on what to believe and do.* (Ennis 1987:10)

Though simply stated the above definition formed one of the strong basis for inquiry into what critical thinking really is. It must be reckoned, however, that the root notion of critical thinking, to Ennis is simply argumentation, that is the correct assessment of statements, and the presentation and clarification of a list of nine major aspects of critical thinking. (Ennis 1964).

Steinberg (1985) advanced the theory that the skills involved in critical thinking are of three kinds: metacomponents, performance components and the knowledge-acquisition components. *Metacomponents,* the highest in the taxonomy includes recognition that a problem exists, defining the nature of the problem, ordering and acting on the problem so that a solution can be found. *Performance components,* he said, are the executive processes used to execute the instructions and provide feedback to them. *Knowledge-acquisition components* are the processes used to learn concepts and procedures. The theories of critical thinking proposed

by Ennis and Steinberg are not in opposition but complementing one another.

In the field of education Bloom (1956) had proposed a hierarchy of taxonomy for cognitive information processing which had in fact been widely utilized as a basis of ordering comprehension hierarchies. At the lowest level of the taxonomy is 'knowledge', followed by the next level - 'comprehension' which requires one to go beyond knowledge. At the next higher level is 'application', which is a level higher yet in that the individual must also be able to apply what he or she has comprehended. A level higher up still is 'analysis', which requires one to appraise critically what one comprehends and applies. Still higher is 'synthesis', which requires putting together in a somewhat creative way the knowledge one has analysed. Finally the highest level is 'evaluation', which is a broad and critical appraisal of the knowledge one has analysed and synthesised.

This 'evaluation' level, the highest level, is where critical reading is placed as critical thinking is 'evaluative' reading: the evaluation of arguments, assembling background knowledge, generating hypothesis and predictions , and testing these hypothesis. (Turner 1988, Erikson 1987)

The above definitions of critical thinking according to Matthew Lipman (1988), one of the earlier proponents of the teaching of critical thinking in schools, are too narrow or too vague. The outcome of critical thinking, he pointed out, should be good judgment. He therefore proposed a definition of critical thinking which stresses the 'good' judgement aspect of thinking; to him critical thinking :

> . . . . *is skillful thinking, and the skills are proficient performances that satisfy relevant criteria. When we think critically, we are required to orchestrate a vast variety of cognitive skills, grouped in families such as reasoning skills, concept-formation skills, inquiry skills, and translation skills. Without these skills we would be unable to draw meaning from written text or from conversation . .*

(Lipman 1986:43)

More recently, Tierney et al (1989) viewed thinking critically as involving the ongoing judgment of one's own thinking, a view which is also consistent with the spirit of Ennis's current definition but it implies making a commitment of thinking about ideas - ideally from different perspectives - as well as thinking about the quality and the nature of that thinking.

The above notion of critical thinking is also parallel with that of Booth's (1974) who believed that to be genuinely critical is to judge on the basis of thought; and Link (1985) who suggested critical thinking as comprising the mental processes, strategies and representations people use to solve problems, make decisions and learn new concepts.

3.8 Implication of Critical Thinking Theory for Critical Reading

The judgement and disposition factors which interact while one is in the process of reading or thinking put full focus on being critical on the attitudes, tendencies and dispositions of *the reader* himself. Ennis (1985) had reiterated that it is the critical dispositions of the reader which reacted together with his abilities that resulted in critical reading. Specifically, the reader reads with what she has already seen and what he or she is seeing in the text he is reading. (Turner 1988). In critical reading the reader composes previous experience to elements in the new material such as content, style, expression, information and ideas, opinions, or values of an author.

In fact critical reading is a *values clarification* process. (Turner 1988). The reader's values and beliefs are activated during the process of making the judgement, together with his or her dispositions.

The skills and dispositions of critical thinking are many and varied, but the identification of the specific critical reading abilities and the skills are wrought with many difficulties, mainly with the inconsistent use of the term creative and critical thinking where creative reading is sometimes used for labels which seems equivalent to critical reading.

3.9 Creative and Critical Reading

The term *creative reading* was used by Nardelli (1957), Russell (1949), and Sheldon (1955), among others. Yaokam (1955), used *analytical reading* and MacKim (1955) and Tinker (1952) used *critical evaluation* to refer to the skills similar to critical reading. Smith and Barrett (1974) preferred the term *evaluation* as the more appropriate to critical reading, firstly because the word *critical* seems to carry a connotation of fault-finding or of judging things unfavorably, and secondly because *evaluation* seems to have a broader connotation which implies the making of both positive and negative judgment.

As had been mentioned earlier critical reading is often confused with creative reading. In fact one of the most difficult reading comprehension components to distinguish is between critical and creative reading. Some authors categorize both as having the same abilities or skill vaguely distinct from the other, thereby using the term interchangeably and denoting skills belonging to the other. Others in contrast, think that both denote separate skills. This is because both are classified as higher mental processes and both are subsets of reading or specifically reading comprehension.

For example Nardelli (1957) used the term creative thinking to what others had described under the label critical thinking. Nardelli's definition of creative reading is such:

> *it is an attribute of suspended judgement with regard to reading materials, the ability to read beyond the superficial, factural statements of the printed page, the ability to recognize author's intention and propaganda materials.*

(Nardelli 1957:595)

It can be infered that both critical and creative reading are similar in that both involve higher, more difficult levels of thinking and comprehension, both involve interaction of the reader with the substance of reading material, and both aim at a search for personal purpose and meaning in reading. Creative reading, to Torrance (1962) is the application or the manisfestation of creative thinking or creativity in reading. Creative thinking meaning the process of

sensing gaps or disturbing, missing elements and forming ideas or hypotheses concerning them.

To Torrance, reading creatively involves either a heightening of anticipation or doing something with what has been read. Both of these approaches involve some degree of elaboration of what is read. This line of definition refers more to the use of creative imagination or the application of insights or the creative process in the generation of new or novel ideas as an outcome of the reading experience.

But it was Stauffer (1969) who provided a distinguishing clarification to the issue, he declared that while the two processes are not sharply distinct from the other, *each will remain somewhat apart because each represents different functions and different uses.* . The critical reader uses more analytic, evaluative thinking for the careful appraisal of writing which involves reasonable control of feelings. In contrast, creative reading involves a deliberate endeavour to go beyond the information available, to seek for the novel, for the divergent possibilities and for sensible expectations and assumptions. (Stauffer 1969).

Turner (1988), in the same line of thought defined creative reading as reading with awareness of the stimuli of imaginative thought present in reading materials. Such stimuli may be in the form of problems sensed or of new ideas or ways of expressions. Therefore when a person reads creatively, he or she incorporates the ideas and information garnered from reading into new and creative problem solving. Thus,

> *critical reading involves analytic thinking for the purpose of <u>evaluation</u> of what is read. In contrast, creative reading involves selective and productive thinking for the <u>purpose of divergence</u> from that which is read.* (underline added)

(Turner 1988:186).

Creative readers thus bring *themselves* to the reading process - their own ideas, feelings, attitudes and values. For the creative reader books are more than storehouses of thought - they are the grist for their own thinking.

The above definitions of creative reading show clearly the link between critical reading and creative thinking. Creative thought is assumed to involve attending a problem from a new direction, or in a novel way. Creative thinking is simply an extension of the normal processes of human thinking and a creative person is someone who operates with the same kind of processes all human beings operate with, although perhaps in a level or quality that others are seldom able to achieve.

Guildford (1950) well-known for his identification of a large number of abillities contributing to human intellect proposed that the factors that are important to thinking abilities are of two kinds: divergent thinking and convergent thinking ability. Many theorists place divergent thinking closer to creative thinking and convergent thinking to critical type of thinking.

It follows that, in extending the concept of creative thinking to creative reading, and critical thinking to critical reading, the main distinction in being a critical reader and a creative reader mostly lies in the degree of divergence the reader engages in his or her normal understanding of the text: with the critical reading nearer the convergent side of the continuum and creative reading to the divergent side of it.

This issue of the nature of relationship between critical reading and creative thinking was studied experimentally by M.J. MacDougall in her research in 1966 using the Ohio State University Critical Reading Test and the Minnesota Tests of Creative Thinking as the main instruments. She divided the 332 fourth, fifth and sixth graders from twelve classrooms in Ohio into two groups, one, the experimental group was given direct instruction in specific critical reading skills; while the control group received special enrichment in the curriculum through the use of children's books.

The major find'ng reported was that there was a low but significant relationship between critical reading and creative reading scores in grades four and five, but no significant relationship was found for the grade six group. Of the factors of fluency, flexibility, originality and elaborat'on; flexibility in creative th nking showed the highest

relationship with critical reading. However, MacDougall attributed the lack of success in finding a substantial relationship between critical reading and creative thinking to the experimental nature of the instruments used to assess creative thinking and critical reading abilities, and to the manner in which both sets of skills were taught during the experimental period under investigation.

Nevertheless the above study gives us a strong indication of the possible differences between creative and critical reading as could be read from the low correlation between the two constructs.

Recently Stoodt (1989) classified critical reading together with creative reading, as a form of *higher-order thinking*. She believed that critical readers must be able to recognize the author's purpose, point of view and use of language; they should test the author's assertions against their own observations, information and logic. In addition, she introduced the *semantic* skills concept in critical reading which are primarily concerned *with the ways in which words are used to influence readers*. Semantic skills include the understanding of denotative (formal dictionary meaning) and connotative (the emotional response to a word) uses of words, use of vague and precise words, and the use of words in a persuasive manner. (Stoodt 1989)

Critical readers, therefore, should also suspend judgements which meant avoiding jumping to conclusions, while gathering the necessary data on which to base their eventual subjective evaluation. Critical reading should be approached with an open-minded, problem-solving sensibility. (Stoodt 1989).

The current thoughts on the characteristics of the critical reader are aptly represented by Thistlethwaite's statement:

Critical readers use their background knowledge as well as what the writer says to evaluate what they have read and make a decision. This decision may be to accept what the writer has said, to disagree with it, or to realize that additional information is necessary before an informed judgment can be made.

(Thistlethwaite 1990:587)

Socio-ideological values therefore interact with the reader exacting influencing forces which colour the interpretation of the author's message and content of the text. In the words of Braga (1990),

> *Critical reading practices must take into account questions of social antagonism, power and resistence. The lack of attention to either social power or human agency may lead to non-critical reading attitudes which are being labeled as 'naive' and 'passive' reading.*
>
> (Braga1990:32)

Socio-ideological issues must be taken into account if one is to be critical as meaning production and consumption occurs within relations of power, and some specific language and uses are favoured with certain social situations.

The scope of reading critically should not be limited to certain types of reading material, such as advertisements, editorials, and promotional brochures. Truly, critical reading should cover even such factual material as the news story on the front page of the newspaper or a science or history text as illogical reasoning, bias, and use of emotional language can be seen in any form of writing. Above all critical reading should begin with dispelling the black and white conception of the nature of text comprehension and to stress the right of the reader to question and make critical appraisal of the piece of text.

3.10 Summary and Conclusion

Research in the nature and inter-related concepts of critical reading was characterized by many definitional problems which is still inconclusive. In the early development of critical reading research, it was confused with creative reading, nevertheless the definition of critical reading had begun to firm up. Although some writers argued that reading is a 'creative' process, in which even the smallest of interpretation requires creative imagination, critical reading should be distinguishable from 'traditional' view of creative thinking and responses which were more concerned with the production of novel ideas and judgements, and was very much independent from textual information. A more accomodative stance

is to regard critical reading as utilizing creative and imaginative ways of thinking.

It is currently accepted that critical reading *is* a critical thinking process defined in a particular situation of reading. Critical thinking is a form of higher-order thinking which is not equivalent to critical thinking alone, but to a fusion of critical and creative thinking (Lipman, M 1991). By extending Lipman's (1991) conception of higher-order thinking to *higher-order reading* , it is possible to have a clear differentiation from the two related concepts - critical and creative reading: firstly, higher-order reading involves both critical and creative reading and secondly, *critical reading* involves reasoning and critical evaluation during reading while creative reading involves craft, artistry and creative judgement. Therefore *critical reading is a subset of higher-order reading* which is a level higher than literal reading.

The schema theory of reading posits that schemata are formed from experiential knowlege or knowledge of the world stored in the reader's mind, including the value systems or beliefs held by the reader. The readers' input knowledge or value systems through interactions within society, also imposes ideological and political structure to a small or larger degree depending on the disposition and, cognitive state of the reader. Hence socio-cultural and politico-ideological perspective is indirectly brought into action when the relevant schemata is activated.

During the process of reading both cognitive and affective factors of the reader are being activated before the cues or meaning derived from the text become clear to the reader. Thus the tendencies or set of attitudes condusive to being critical, or critical *disposition* as well as the critical thinking *ability* of the reader could be brought to the reading comprehension *process* . When the state of inconsistency or contradiction detected in the processing of meaning is resolved the *product* is comprehension of meaning. This process continues until all meanings are evaluated and a state of equilibrium or satisfaction is achieved.

The specific thinking skill to reading must involve interaction with the text and this interaction, while dependent on the background knowledge, values and beliefs of the reader, will only be activated in particular reading situations or tasks. The readability of the text, its density of information, the organization besides the author's style plays an important part in comprehension, whether literal or critical.

Thus the specific ability to read critically would depend on the stimulus and therefore could be directly related to the ability to solve the 'problem' or to clarify the inconsistencies in order to reach balance. The ability is only dominant when the situations are present; that is when both the ability and the dispositions are present only then will it be activated.

In conclusion, it had been shown that the definitions and the nature of critical reading could be explained from the perspective of both the reading comprehension and critical thinking theories. There remains the question of assessing the construct which will be dealt with in the next chapter.

CHAPTER 4
ASSESSING CRITICAL READING ABILITY

4.1. Introduction

While numerous established reading tests and critical thinking tests are available for the primary, secondary and tertiary levels, critical reading tests are still a rarity. Research done in the area of critical reading had been constrained by the scarcity and inadequate measuring instruments to assess the construct of critical reading ability for the different levels and age-groups of students. As a result, most investigators doing research in critical reading have to develop their own tests to serve the particular purpose and level or age-groups intended.

The heart of the problem in measuring critical thinking/reading ability is in defining the boundaries of what is critical reading and what are the components or skills which underlie it. Only after identification of the specific skills or subskills to be included in the construct of critical reading ability could the test be constructed. Henceforth the issues in the assessment of critical reading ability will be discussed.

4.2. Critical Reading Skills

Two approaches typify the identification of critical reading skills: one approach is the armchair way of mere listing of the skills elicited from basal readers or theorising, the other is through empirical research. Harris's (1950) list is typical of the first type. He listed four types of critical reading skills that could be distinguished from reading among which are the ability to decide correctly whether a particular sentence or paragraph supplies information relevant to a question or topic and the ability to detect and resist the influences of undesirable propaganda. Also of the same category is that of Williams's (1959), who analysed the provision of critical reading in basic readers at the elementary schools and subsequently discovered 33 critical thinking skills from the 186 thinking abilities that appeared in the series.

Following this, Shotka (1967) then outlined eight skills for developing critical thinking at the first grade level. Some of the important ones are to get evidence and to evaluate the evidence by finding bias, validity and reliability of the evidence before drawing conclusions.

No empirical evidence was given to test the validity of those supposedly critical reading skills, except in defining and clarifying some of the concepts. The skills listed such as "assume what is true for the sake of testing", are either too vague, or in other instance too broad such as "put findings together and organize them" . A more recent product of such nature is in the construction of checklists which are useful to classroom teachers. Typical example is the one by Martin and Crammond (1984) who used the term creative reading instead of critical reading, but with items similar to Turner's and Wolf et al's. The list of skills is listed below:
- expressing feelings or emotions about things read,
- apply information read to different settings,
- make guesses about what will happen next ,
- think about other ways the story might have ended,
- question why characters behave in certain ways,
- add his/her own ideas to the author's ideas,
- compare author's conclusion with other possible conclusions,
- relate what is read to to his or her own experience,
- visualize what is read
- see questions left unanswered by the author, etc.

To a large extent the above array of critical reading and reading comprehension skills do match rather well with Ellinger's (1967) conceptual representation of critical reading ability in relation to total reading ability. Her critical reading skills were categorised into three main groups, semantic and logic, general authenticity and literary analysis. From these, the skills were further subdivided into various subskills such as judging the reliability of information, detecting material fallacies, and others which came under Semantic and logic. Hence critical reading ability was conceptualised as a mixture of reading , thinking and logic 'skills' or subskills'. In addition, a special group of skills was accorded for literary analysis

which in essence, divides the skills further into two separate critical reading subskills - one for expository material and another for literary analysis. There is no doubt that to Erlinger, critical analysis of literary materials is somewhat different from critical reading of other non-literary texts.

The above categorization of skills formed the basis of Wolf et al's (1968) landmark study on critical reading ability, but here, the approach to skill identification was different in that empirical measures were adopted to test the skills. This research team produced a comprehensive instrument to measure the construct of critical reading - The Ohio State University (OSU) Critical Reading Test designed for elementary and intermediate school level.

Nevertheless, the empirical type of skill listing was pioneered not from the above study but from earlier studies which originally examined whether critical reading is relatively independent from general reading comprehension abilities. Notable among them were studies by Maney (1958), McCullough (1957), Nardelli (1956), Osborne (1939), and Sochor (1958). They confirmed that the "ability to do critical reading was relatively independent of the ability to read literally even though literal reading comprehension was found to be a pre-requisite.

In the same line of inquiry, Worden (1980), constructed a model of critical thinking/reading model where he identified several skills of critical reading abilities. In the Model, Worden posits that critical thinking which is subjective in nature is a process of thinking and its initial step rests in the identification of the background experiences, feelings, beliefs, values, external guidance and knowledge. Critical thinking is manifested in critical reading, which is actually critical thinking employed during reading . The critical thinking/reading components which he thinks are necesary for one to think critically are reasoning, deduction, induction, assimilation and discrimination. However he maintains that not all the skills are implemented at the same level of effectiveness.

Figure 4.1
WORDEN'S CRITICAL THINKING/CRITICAL READING MODEL

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                    ┌─────────────────────┐
                    │  CRITICAL READING   │
                    └─────────────────────┘

┌────────────┐  ┌────────────┐  ┌────────────┐  ┌────────────┐
│ Assessment │  │ Assessment │  │ Assessment │  │ Assessment │
│    o f     │  │  of FACT   │  │    o f     │  │ of AUTHOR'S│
│ AUTHENTICIY│  │ VS OPINION │  │COMPLETENESS│  │   STYLE    │
└────────────┘  └────────────┘  └────────────┘  └────────────┘

                    ┌─────────────────────┐
                    │  CRITICAL  THINKING │
                    └─────────────────────┘

┌──────────┐ ┌──────────┐ ┌──────────┐  ┌─────────────┐  ┌───────────────┐
│REASONING │ │DEDUCTION │ │INDUCTION │  │ ASSIMILATION│  │DISCRIMINATION │
└──────────┘ └──────────┘ └──────────┘  └─────────────┘  └───────────────┘

┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌────────┐ ┌────────┐
│BACKGROUND│ │ CULTURAL │ │ FEELINGS │ │KNOWLEDGE │ │BELIEFS │ │ VALUES │
│EXPERIENCE│ │INFLUENCE │ │          │ │          │ │        │ │        │
└──────────┘ └──────────┘ └──────────┘ └──────────┘ └────────┘ └────────┘
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- -
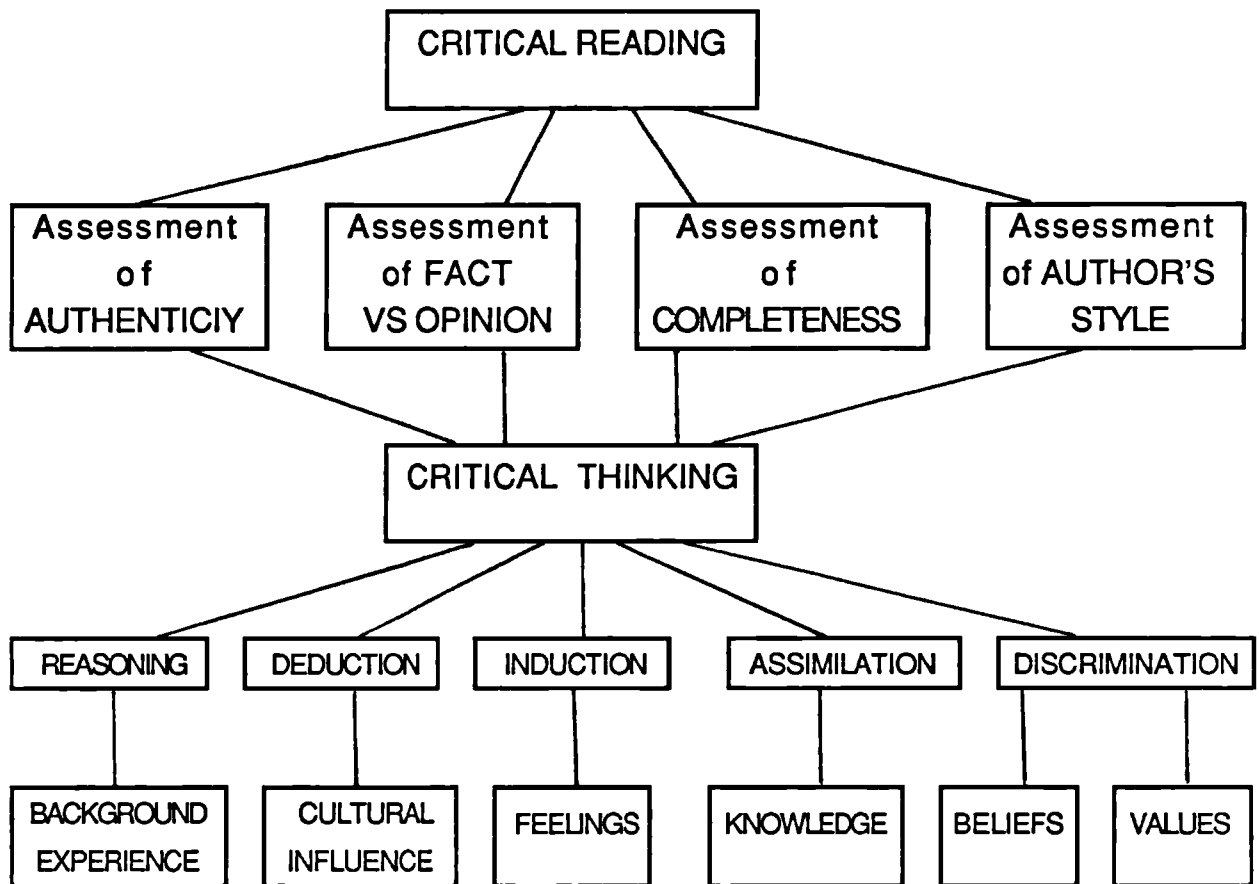
From the above model which was developed after thorough review of literature and consultation with as many as 40 reading experts, Worden identified four separate skills in the area of critical reading/thinking. The skills are:

i.   assessment of authenticity   (Is the story true or false? Could the story be make-believe?)

ii.   assessment of facts versus opinion (Is there some form of propaganda used? Is there a statement that can actually be proven or disproven?)

iii. assessment of completeness (Does the information make sense with previous knowledge? Has there been any essential information omitted?)

iv. assessment of author's style (How does the author use his literary technique to establish mood? What is the author trying to accomplish by creating this composition?)

(Worden 1981 : 279-280)

There was low correlation between items and skills and after factor analysing the items for construct validity, Worden finally concluded that

critcal reading should be thought of as a 'general' area of reading comprehension and not approached as a series of subparts.

(Worden 1981:2)

The question of skills or subskills underlying critical reading ability is therefore still inconclusive, but issues in the construction of critical reading tests is not limited to only the question of the construct. As any other tests psychometric consideration is also of paramount importance.

4.3. Critical Reading Tests

In this section four critical reading tests, The Sochor Critical Reading Test 1959, the Maney Test 1959, The OSU Critical Thinking Test, 1968 and the Worden Critical Thinking/Reading Appraisal (1980) will be reviewed. The Sochor and Maney will be reviewed together as the format and theoretical framework underlying the two tests are similar, except that Sochor's test is designated for social studies and Maney's test is targeted for science.

4.3.1 Sochor's Critical Reading Test for Social Studies and Maney's Critical Reading Test for Social Studies.

These tests are considered to be important in the development of critical reading test, as it represents an early attempt to develop a psychometrically sound critical reading instrument. As was reported, both studies were not specifically aimed at the construction of a critical reading test but rather it was a product of research to investigate certain aspects of general reading

comprehension. The aspects that are relevant to critical reading are the relationship between literal and critical reading in social studies and science, the relationship between each related critical reading skill, the relationship between general reading ability and critical reading ability, and the relationship between critical reading and verbal intelligence. The tests that were constructed in order to investigate the above aspects were The Intermediate Reading Test - Social Studies and The Intermediate Reading Test - Science targeted for Grade 5 pupils which include a literal comprehension and a critical reading section. The same experimental design and sample were utilised by both authors in conjuction for their dissertation in 1952.

The preliminary edition of the tests which were designed to appraise both literal and specific critical reading comprehension skills were validated against 143 children in Grades 4, 5 and 6. The revised tests called the experimental edition was administered to representative sample of 513 pupils ranging from 10 years to 14 years six months.

In the critical reading section, thirteen critical reading skills were set up, and items were constructed to measure the specific critical reading skills in two separate content areas, one in social studies and another in science. Items were constructed to test the readers':

1. background experience in reference to a concept used in the selection (functional vocabulary test);
2. ability to identify similar usage of a given word in a selection (semantic variation of vocabulary test);
3. abillity to distinguish the central topic of the selection from subordinate one (central theme test);
4. ability to identify the key, or most important idea in the story (key idea test);
5. ability to draw specific conclusion indirectly from the material given (inference test);
6. ability to identify a general conclusion (generalization test);

7. ability to apply information from the selection to a problematic situation (problem solving test);

8. ability to see the relationship among ideas in a series (association of ideas test);

9. the ability to perceive relationship between two pairs of ideas (analogy test);

10. ability to recognize the word or words to which a selected pronoun refers (antecedent test);

11. ability to determine a time sequence (sequence test);

12. ability to determine relevancy of ideas to a particular selection (extraneous idea test);

13. ability to identify the author's primary motive in writing (author purpose test) (Sochor 1959 :50).

This reading test was reported by the authors to be evaluated by means of a reliability test and three techniques of estimating item validity: the standard error of the difference between proportions, an estimate of the product-moment coefficient of correlation based on the upper and lower 27% of the distribution, and inspection of the total number of choices for each distractor. But the results of the above validation procedure was not available, therefore it is difficult to guess the validity of the items and the test as a whole .

The concurrent validity of the test was established through correlation with other similar measures such as with literal comprehension. The Sochor Test correlates .23 with literal comprehension when verbal intelligence was held constant and .61 otherwise. The Maney test reports a low correlation between the two aspects of the test. Correlation of critical reading in social studies and with general reading comprehension measured by Gates Reading Survey Form !, Level of Comprehension, gives a result of .64 while the correlation of critical reading in science shows "substantial relationship". With verbal intelligence, measured by the Pintner General Ability Test, Form A, critical reading (Sochor's Test) correlates .69 and Maney also reported "substantial" relationship. The above substantial relationship between the two critical reading tests and general reading comprehension and the

Verbal intelligence test provides evidence to the construct validity of the two instruments.

Several weakness could be discerned in the items: Firstly, some of the test items were rather vague and overlapping, it was not clear whether the items represent literal comprehension or critical reading. Some items were classified as critical reading skill but were more appropiately classified as low level interpretation or literal reading skill.

Another aspect unresolved in the test is with regard to the test of vocabulary, which is an important reading skill to be acquired especially at primary level . Some of the test items for 'association of ideas' and 'analogy tests were in fact vocabulary test items. There was no attempt to construct items pertaining to logic which is an important dimension of critical reading.

As an early attempt to measure critical reading, generally, the Sochor and Maney Critical Reading Tests could be considered as a good measure of critical ability at that level, although the tests cannot be fully recognized as purely measuring the ability to read critically in the content area. Perhaps the level the test was intended (the primary level) exerts limitations on the construction of items - the items should that should be easy and readable enough to be understood by the elementary school pupils but at the same time it should be able to challenge them to exercise their critical judgements.

4.3.2 The Ohio State University (OSU) Critical Reading Test

The Ohio Critical Reading Test was originated by Wolf and her associates in their comprehensive study to test the feasability of teaching critical reading to elementary school children. Team members of the project developed three forms of the test, one each for Level 1, Level 2 and the Intermediate Level. The number of items constructed for the levels were 42, 46 and 54 respectively. The

tests were divided into three sections, labeled as Logic, General and Literature section

In the Logic section, the important skills identified were recognizing and evaluating the validity of writing, examining the validity of an argument, determining appropiate use of all, some, and none statements, recognizing and evaluating the reliability of printed materials and discovering unstated premises and conclusions. Also included was the skill at recognizing and discovering ways to test the reliability of printed information, determining the soundness of premises and conclusions and many others. Some of the skills are distinguishing between vague and precise words, recognizing the difference between connotative and denotative meanings of word, recognizing the persuasive use of words through such devices as name calling, glittering generalities and plain folks, and evaluating the effectiveness of the use of words according to the author's purpose.

The General section includes items that evaluated the subjects' ability to identify author's and publisher's point of view and biases, the ability to judge the author's qualifications and to make comparisons of related content from various sources. Some of the skills are distinguishing between vague and precise words, recognizing the difference between connotative and denotative meanings of word, recognizing the persuasive use of words through such devices as name calling, glittering generalities and plain folks, and evaluating the effectiveness of the use of words according to the author's purpose.

For the evaluation of Literary materials, items constructed were on story structure, character development, story setting, format, theme of the story and the author's use of literary devices. These lists of skills for critical reading for persuasive materials formed the basis of item creation, and represent a wide range of skills pertaining to critical reading. It marks the first comprehensive attempt to measure the ability to read critically independent of general reading ability.

From the skills listed above, the *Ohio State University Critical Reading Test for Primary and Intermediate Grade* was developed based through item analysis performed on the results of trial administration of the test on 3,017 primary and intermediate grade students. .Criteria for selection of the items include item difficulty, discrimanating power and balance among incorrect alternatives. The internal reliability (K.R. 21) of each form of the tests at each grade level was above .80.

The tests were normed on two occasions, the Fall norms were 3,123 subjects while the Spring norms were based on only1,868 subjects. The subjects came from 46 school systems spread out in four geographical areas

The concurrent validity of the tests was obtained by comparing the OSU Test with teacher's ratings. Teachers were asked to list the five highest and five lowest readers in a randomly selected group. On the whole the teachers' selection did match the test at an acceptable level. The construct validity of the test was done concurrently with the experimental phase. Here correlational data with other tests such general reading comprehension, IQ tests and personality tests was used as evidence of construct validity.

The comprehensiveness of the OSU tests, the large sample for norming of the tests plus the evidences of construct and concurrent validity could be cited as reasons for regarding the OSU Critical Reading Test as one of the best test in the area and was often used by other subsequent researchers in the area of critical reading.. But as any other test, there is room for improvement; for example the number of items could be made larger so that a more comprehensive coverage could be attained. The reliability of the test could also be improved upon. The matching of the items and the skill could also be done less subjectively, for example through other expert opinions.

4.3.3 The Worden Critical Reading Appraisal

The above test was developed by Worden, T.W. (1980) and targeted for Grade 3 to Grade 6. The test instrument was based on The Worden Critical Thinking/Critical Reading Model described in the earlier section. Items for this Critical reading/thinking appraisal were based on the four skills identified, taking into account the reading level of the target group. A lot of effort was done to obtain validity of the test, specifically, its face and content validity which was determined by reading experts as well as a panel of twelve judges who categorized each item according to the specific skill areas.

Two phases of test administration were performed on third, fourth, fifth and sixth Caucasian and Black pupils from the middle to the upper middle class population. Item analysis was performed for every item. The result of the first test administration showed the items to be too easy, ranging from .6 to .9. Consequently, some of those easy items where the distractors were relatively not functional were deleted, but improvement was minimal. The discrimation indices of the items were also reported to be low but acceptable.

In terms of reliability, results from the first and second administration showed the instrument to be highly reliable and consistent, .84 and .80 respectively and within an acceptable range of standard error (2.6); but in general the study failed to reveal any correlation between individual items and the skill the items was written to measure in spite of the elaborate procedure to obtain the content validity from reading experts, such as rating and categorising of individual items into its respective subskill. Perhaps differentiation of items from the four subskill was not very marked, the skills overlapped and some of the item could be represented under a number of skills.

Examples of items which were no different from items of literal comprehension are quoted below as illustrations:

For the passage:

The family was hot and tired from their long trip. They had been on the road for four days. The land was dry and hot. Indians had just attacked them once, but by working together, they could protect each other. Life was quite dangerous for a family that was trying to live in a new territory. These people always had to face bad storms, high winds, and wild animals. They even experienced broken wagon wheels, serious illnesses, and sometimes death.

The items constructed were:

1. This story is probably

a) true   b) a joke   c) a poem   d) not true

2. The author wanted you to

a)   make fun of the family

b)   know the family was always safe

c)   feel sorry for this family

d) care very little about the family.

3)   This story probably took place

a) last year   b) long ago   c) in the future   d) this year

4)   The family was known as

a) pioneers   b)   cattle ranchers

c) wagon drivers   d)   foreigners

5.   In your opinion, this family

a) probably never had fun together

b)   still found time for a little fun

c)   stayed in the wagon all of the time

d)   never helped anyone else.

6.   One word that would describe this family is

a) unfriendly   b) selfish   c) brave   d) helpless.

Items 4 and 6 above for example, could be classified as a vocabulary test normally used in assessing general comprehension ability. Item 1, regarding the type of text or author's style was rather too easy as the distractors given, like whether the text is a poem, was clearly too improbable. Items on inferencing ability were also very few, like item number 5 above. In view of the few items representing 'pure' critical reading ability, the above instrument lacks credibility as one which really measures critical reading ability independent of general reading comprehension ability. Furthermore items on logical thinking like the ones constructed by the Ohio Critical Reading Test developers were not represented at all.

This weakness of the test could also be attributed to a number of other factors, besides the quality of distractors. The facility of the items is high and the discrimination power of the items were very low. The number of cases were also too small, only 326 for the first administration and 292 for the second. It could be reasonably infered that some of the weakness could be due to the characteristics of the sample, but there is no way of knowing as the representativeness of the sample was not reported.

Worden's research demonstrated the difficulty of designing a reliable and valid instrument on critical thinking/reading ability, even when adequate consultation with experts were done

4.3.4 Other Critical Reading Tests

From the Florida State University, Gall, S.S. (1973), Spivak, J.L.E.(1974) and Culyer, R.C. (1973) conducted a series of studies on the growth of critical reading ability for the various grade levels utilizing The Intermediate Critical Reading Test, a 32-item test developed by Gall. Downing, F.M. (1974) also constructed a critical reading test pitched at the advanced level, in conjunction with her study on the growth of critical reading ability for advanced students in grades thirteen and fourteen.

Other studies include those conducted by Jaini Y (1986) and Powell (1987). Jaini evaluated the status of critical reading skills instruction in selected elementary schools. The critical reading skills listed in the literary form section includes characteristics of biography or fantasy, while the logic section refers to skill such as detecting hasty generalizations.

Powell, D.D (1987) constructed a Fallacies in Reading Test for the purpose of investigating the critical reading ability of Black freshmen, sophomores, seniors and juniors. Seven skills pertaining to fallacies in reasoning were constructed: appealing to conformity, improper data, stereotyping, false authority, either-or, part-whole, and sexism. The instrument which was reported to be reliable and valid for the target group showed no significant differences in critical reading ability among fthe undergrades of this predominantly Black Institution.

4.4   Critical Thinking Tests

Unlike critical reading tests, tests on critical thinking are available in published form. For the elementary level, Ethel Maw's Critical Thinking Test is available for the Grades Four, Five and Six. The 70 items test were divided into three sections with sample answers and clear directions given for test administrators. The Watson Glaser Critical Thinking Appraisal and the Cornell Critical Reading Test are available for Grade 9 through adulthood and college level respectively. Tests which measure specific aspect of critical thinking include the Cornell Class-Reasoning Test, Form X developed by Ennis, Gardiner, Morrow, Paulus and Ringel in 1964, the Cornell Conditional-Reasoning Test, Form X developed by the same authors as the latter, the Logical Reasoning Test developed by Hertzka and Guilford wh'ch was aimed at high school students, college students and adults, and Test on Appraising Observations developed by Norris and King in 1983 aimed at grades 7 through 14.

The *Watson-Glaser Critical Thinking Appraisal* is said to be the most established one and is available in two forms aimed at grade 9

through adulthood. This originally 100 item powerful test on critical thinking is composed of five sub-tests: inference, recognition of assumptions, deductions and interpretation and evaluation of arguments. There are sections testing skills on induction, assumption identification, deduction, logical conclusion, and argument evaluation. The revised Watson-Glaser Test Form A and B consist of 80 items each, divided into subtests on Inference, Recognition of Assumptions, Deduction, Interpretation and Evaluation of Arguments. Two types of item content were dealt with; items with neutral content dealing with the weather, scientific facts or experiments and other subject matter which do not evoke strong feelings or prejudices, as well as items with controversial content on political, economic and social issues.

Govier, T (1987) in 'Critical Thinking about Critical Thinking Tests' gave a critical analysis which was mainly focussed on the format and content of the test, not on its psychometric properties. The dimensions covered by the test was said to be narrow even allowing for the fact that some aspects of critical thinking were not within the scope of multiple-choice questions. In Govier's words:

> *Its instructions are philosophically garbled in an unnecessary and unhelpful way.. Within the covered range, there are many contestable items. More than ten per cent of the total items are of this type*

(Govier 1987:259)

He further criticised some problematic aspects of instructions are so extreme that genuinely critical thinkers might become positively angry with the test and thereby do badly. He specifically attacked the way the directions of the tests was constructed in which the testees were asked to favour the 'general welfare of the United States' in their evaluation of statements which is contrary to being value neutral and critical. More important, the content analysis of the test revealed certain flaws in the form of omission of important sections such as on reasoning by and about analogy; sections on fallacies, both formal and informal; on judging credibility of sources; definitions of context; sensitivity to ambiguity, vagueness, and emotionally loaded language; reasoning about and to

explanations; causal reasoning and empirical confirmation in experimental contexts. Another weak aspect is the very considerable duplication that exists between sections. *The different titles for the sections disguise the fact that very similar questions appear in each* . (Govier, T 1987: 257)

The proportion of contestable items was found to be too large, 11 items out of a total of 80 items, or 14 percent. The psychometric properties of the test is good. The manual reports a split-half internal consistency coefficient of .69 to .83, other measures of reliability were not reported but a stability of the test over time measured by a correlation between responses of same subjects at two time periods gives a correlation of .73. The correlation between scores on alternate forms A and B was also high, at .75.

The validity of the tests were difficult to assess, but high correlation of the instrument with traditional measures of general intelligence such as the Otis-Lennon Mental Ability Test and reading scores were reported. This test was normed on a large number of sample and groups of adult. The manual provides a percentile norms for each of the various groups which is useful for comparative and diagnostic purposes.

The Cornell Critical Thinking Test Level Z designed for college level students is reviewed henceforth. This test developed by Ennis in 1983 and subsequently revised in 1985 consists of 52 questions to be done in 50 minutes. There are seven sections to the test: the first has 10 questions dealing with deductive consequence and contradiction and are *more syllogistic in nature, not propositional and modal.* (Govier 1987). The test questions are set in strong value-laden contexts, so that there is emphasis on being able to reason neutrally with suggestive content.

The second section consists of 11 questions, on semantics or faults in reasoning , it mostly tests the ability to evaluate emotionally loaded language, arguments and claims that trade on ambiguity, and tacit persuasive definitions - problems due to the use of language.

The third section, with four questions, requires respondents to evaluate 'believability' or credibility of people as sources of knowledge and the plausibility of the claims they make.

The fourth section has 14 questions, deals with evaluation specifically inductive confirmation reasoning by describing an experimental situation, and getting testees to comment on the empirical conclusions and implications. The fifth section, with only four questions, again deals with inductive experimental reasoning , but has different thrust, in that testees are to comment on the logical significance of various predictions. The sixth section also with four questions focussed primarily on word meaning, how words are implicitly defined on the basis of their use in a given context. The seventh and final section, consisting of six questions, requires testees to comment on unstated assumptions behind arguments and remarks.

Although the scope of the above test is considerably broader than the Watson-Glaser Test, nevertheless a number of features on argumentation, reasoning, and critical analysis were not included. No questions on judgement of relevance, analogies, conductive (cumulation of factors) arguments, calling for balancing pros and cons were given. A number of fallacies such as straw men, *ad homoniem*, the argument from ignorance, guilt by association, deductive fallacies like denying the antecedent were also omitted. (Govier 1987)

An important minus factor is the use of invented materials where unrealistic arguments or passages are used, probably to ensure maximum clarity and neutrality of the items. In addition, although the number of contestable questions is small, only seven, but this represents about fifteen percent of the total test items.

The above test could be considered as a good test as it cover has a wider range of skills, the instructions were stated clearly-without either outrageously deviating from or obscurely trading upon standard logical terminology. The test is also amenable to public

scrutiny having established channels for improvement by tapping a large number expertise from the classrooms.

Only one test of critical thinking ability utilized the essay format. Under this category comes the *Ennis-Weir Critical Thinking Essay Test* (1985) developed by Ennis and Weir which are aimed at grade 7 through college. It is also intended to be used as a teaching material and incorporates skills such as getting to the point, seeing the reasons and assumptions, stating one's point, offering good reasons, seeing other possibilities (including other possible explanations), and responding appropiately to or avoiding equivocation, irrelevance, circularity, reversal of an 'if-then' (or other conditional) relationship, over-generalization, credibility questions, and the use of emotive language to persuade.

The test is constructed in the form of argumentation. The testees were presented with a complex argument in the form of a letter to a fictitious newspaper editor about a familiar problem. They were required to read and evaluate the arguments presented in the letter and then write their own responses and judgments to the arguments in the form of an essay, where they were to defend their judgements with reasons. Scoring by raters was facilitated by a numbering format of the paragraph.

Werner P.H. (1991) in a review of the test appreciated the ability of the test not only to address the evaluative aspects of critical thinking, but also its ability to tap in the creative aspect of critical thinking in a holistic and naturalistic way, as it offers open-ended responses divergent responses could be obtained and this poses different problems regarding rating of scores. Elements of subjectivity will ever be present although the test manual reported a high inter-rater reliability of .86 and .82. The test is limited in practical use due to its time-consuming nature unlike multiple-choice items, but its greater use for diagnostic purposes through the proper identification of weaknesses and strengths of pupils in the skills assessed should be appreciated.

4.5 Summary and Issues Related to the Construction of Critical Reading Tests

The Sochor and Maney test and the OSU Critical Reading Test Worden's Critical Reading/Thinking Appraisal and observed good psychometric practices where reports on the reliability and validity of their tests were made available; but in most other cases strict methodological procedures in test construction were not observed and the validity and reliability of the test constructed remain unknown. Some of skills chosen by researchers were rather subjective, and did not hinge on strong theoretical framework of the construct of critical reading. In some respect this neglect was a result of the studies being of the experimental type where the main function of the instrument was to measure the outcome of the specific critical reading instruction specified in the respective research design. Another important issue is the narrow coverage of the dimensions of critical reading skills or abilities - some tests just measure one or two main skills but claim the test to measure general critical reading ability.

As the tests constructed are essentially a type of reading test, the readibility of the passages and suitability for the grades in wh'ch the tests are intended should be considered but these were sometimes not addressed in the test construction. In some tests, the multiple-choice questions constructed were unbalanced with the distractors of the question varying too widely in number, giving unequal 'guessing element' to different items. The number of items were sometimes too small to show ability in critical reading . Another aspect is the test format where aspects of clarity and interest are sometimes not considered. The most problematic aspect of test construction is the question of 'confounding', where the items constructed were claimed to measure critical reading when in actual fact it coud be taken to measure other skills as well. In other word, critical reading research seems to have a weak basis of construct validity.

An important contribution in clearing some of the main issues pertaining the construct validity of critical reading and critical thinking and their interrelationships as well as their relationships with reading, scholastic aptitude and achievement was examined by *Follman,J and Lowe, A.J* in 1972-1973. Through thorough empirical examination in two parallel series of psychometric research on critical reading and thinking of fifth and twelfth grade pupils they tried to uncover the basic issue of whether critical reading and critical thinking have unique variances and whether the skills or subskills of critical reading are distinct from each other .

Their fifth grade samples consisted of 58 typical fifth grade pupils, mostly white, from lower or middle socio-economic classes at Ballast Point Elementary School, Tampa Florida. Subjects were administered with the following tests: The *Intermediate Reading Test - Science* (Maney, 1952), the *Intermediate Reading Test - Social Science,* (Sochor, 1952), *The Cornell Critical Thinking Test Form X* (Ennis and Millman 1961), the *California Test of Mental Maturity,* a scholastic aptitude test, the *Metropolitan Achievement Test Intermediate Level, Form A,* of Durost, et al., (1959). The two critical reading tests used for the study were the *Critical Reading Test for Science,* and *The Critical Reading Test for Social Studies.*

The twelfth grade subjects were from Robinson High School, Tampa, Florida, also mostly white and coming from lower or middle socio-economic class. As the pupils differed in age, maturity, reading level, etc. a different set of parallel tests on critical reading, thinking, scholastic achievement and aptitude test were given. The tests were: *Reading Comprehension Test* by Martin (1939), which consists of five critical reading subtests; the *Test of Critical Thinking Form G* by American Council of Education, (1951), which consists of nine critical thinking subtests; the *Nelson-Denny Reading Test, Form A* by Brown, (1960); the *Lorge-Thorndike Intelligence Test* by Lorge and Thorndike, in 1954, to test scholastic aptitude; and the *Florida Statewide Twelfth Grade Tests Form PRT (FLA),* developed by Swineford (1968).

For each grade, a parallel series of three sets of statistical analyses were employed: namely, the correlational and factor analysis of subtest scores and total test scores for the first set; the psychometric tests of the test items, as the second set, and finally, canonical correlation, partial correlation, multiple regression and part correlation of the subtest and total test scores.

The results revealed that critical reading did involve some critical thinking subskills, but other measures tested were not. In the Fifth Grade analysis, factor analysis and rotation of the 17 subtest scores indicated first a *general factor* accounting for 46 % of the variance and consisting of loadings in excess of .52 for all subtests except critical thinking - that is specifically, finding assumptions and literal reading in science . Four group factors were extracted from this general factor. The major group factor extracted consisted essentially of critical reading in science, critical reading in social science, literal reading in social science, critical thinking - deduction, aptitude factor - non-language, achievement factor - word knowledge, reading and language skills. Thus the factor viewed was a complex of language, reading and thinking activities, particularly vocabulary, reading, interpretation and inference. The second factor consisted of numerical and study skills factor, the third factor seemed to be concerned with the relevance of evidence, while the fourth factor was largely error variance.

In the twelfth grade factor analysis of the 30 subtests, a strong group, close to general factor, accounted for 46% of the variance and having loadings in excess of .35 from all subtests except the two non-verbal subtests, was observed. On rotation, the large group factor identified was the language factor. Another factor was composed of all the critical reading subtests, critical thinking - recognition of assumptions, critical thinking - pertinent information, and critical thinking - valid inferences. But the critical thinking subtests did not load together.

The set of factor analyses on both the fifth and the twelfth grade data therefore revealed remarkable consistency. The total test

score correlations across the two levels were about .6 between critical reading and thinking tests. The above findings showed important evidence that critical reading overlaps substantially with language, reading and thinking activities, particularly vocabulary, and also some other thinking activities.

The Follman and Lowe (1972-73), thus revealed two major conclusions, firstly that the construct of critical reading has little if any unique variance, and the secondly, that critical reading overlaps profoundly with language ability, notably vocabulary. The relationship between critical reading and critical thinking was found to be much weaker, *in fact virtually may not exist independent of verbal ability.* (Follman and Lowe 1972-73). Although a comprehensive review of the tests indicated that the tests used in the study were psychometrically sound, any conclusions about the nature of the definition of critical reading and thinking, the author argued, remains to be established.

Of the few research studies conducted in the specific field of construction of critical reading instrument was the one attempted by Janice Arnold Dole (1977). Lamenting the lack of theoretical studies addressing the persisting inconsistencies in critical reading research, she conducted a validation of the construct of critical reading on three tests designed to measure crit'cal reading ability _ The Critical Reading Tests developed by Sochor and Maney in social science and science as well as the critical reading test in English she developed herself. The specific objective of the study was to determine if critical reading could be differentiated from the theoretically related construct of literal reading.

The above study was conducted using the multi-trait multi-method analysis, whereby the resultant pattern of correlation matrix based on the breakdown of constructs by content area as well as by methods was employed to measure both the convergent as well as the discriminant valid'ty of the instruments.

Four hundred and thirty six sixth level students underwent the tests whose finding indicated moderate convergent validity for the constructs of critical reading. The multi-trait method matrix, Janice Arnold Dole (1977) claimed, failed to establish any discriminant validity among the construct and the content areas with a possible exception in literal reading in English and in Science which tended to come closest to establishing heteromethod and nomomethod validity. In conclusion the study indicated the empirical difficulty in understanding and operationalizing critical reading constructs which had failed to demonstrate any distinctness which can be empirically determined.

Arnold-Dole (1977) study is significant as it is able to show the weak basis on which the critical reading constructs are based. Further it also dispels some of the earlier confidence one has on the use of the Sochor- Maney test. There is no doubt that a more robust instrument to measure the elusive critical reading ability has become a necessity and a challenge.

4.6   Conclusion

Various attempts to measure critical reading/thinking abilities had been discussed. To summarize, it seems appropiate to stress the lack of proper instruments to reallly measure the construct of critical reading ability.   If critical reading is thinking critically during reading, then both approaches and dimensions of reading comprehension skills as well as critical thinking skills should be incorporated together.   Critical *reading* tests should not ignore the critical or 'logic' aspect of the construct with the result that the test is similar in format and content to reading comprehension.   On the other hand critical reading tests cannot be modelled in totality on critical *thinking*   tests as certa'n textual, linguistic and syntactic features have to be addressed in order to qualify as a real measure of critical reading.

For practical reasons such as being more 'reader-friendly' or 'test-friendly', critical reading tests have to be readable as well easy to

administer, and in this situation, the pencil-paper test is most suitable. But there are limitations regarding this form of multiple-choice test items which should be recognized. Critical reading and thinking tests have to deal with articulated thought about small, easily described issues where answers do not normally diverge due to differences in political or ethical perspectives or on the basis of different background knowledge. Questions and illustrative materials have to be minimally susceptible of divergent interpretations, they have to be clear-cut and expressible in brief phrases, they cannot presume very much background knowledge about any particular substantive issue unless those to whom the test is given can be expected to have uniform knowledge. These are condition which would rarely be met in actual practise.

As the material used for critical reading tests must not be susceptible to a variety of interpretations, therefore interesting figures of speech, irony and sarcasm, and suggestive ambiguities will have to be avoided. Thus tests must always use neutrally safe invented passages rather than real verbose ones. From all these arguments, we can appreciate that the construction of such test is indeed a challenging task.

CHAPTER 5
FACTORS AFFECTING CRITICAL READING ABILITY

5.1. Introduction

A valid and reliable instrument is a prerogative to any further studies of the factors affecting critical reading, but in the absence of such an instrument, the construct of critical reading ability had been more or less assumed to exist and as such, factors such as IQ, general intellectual ability, age and grade level, thought to be involved in and affecting critical reading have been investigated to some extent.

The present chapter will present a review of the relationships between critical reading with attitudinal factors, intelligence and general intellectual factors, and other personal variables of the reader, namely, grade level, age, gender and other variables available in the literature.

5.2. Attitudinal Factors

Of the many factors thought to have an effect on critical reading, attitudinal factors are the only major psychological parameters that have been thoroughly researched. Studies since 1940's have consistently demonstrated that the reader's attitude toward a topic and his preconceived opinions and biases significantly affect his ability to read critically. (Arnold-Dole 1977).

In 1948, Crossen investigated whether American pupils at grade 9 and 10 who have the most favourable attitudes towards a topic were able to read critically two passages related to Negro and German people. She used views on both groups of people as the content for her test materials, as such topic was thought to possess the possibilities for obtaining emotional responses from the pupils. The experiment was conducted just before the Second World War where there were some feelings against, or for the Germans. As for the Black minority, potential emotions for and against them might

be present as the Blacks in the community under study presented *persistent problems*. Crossen found that the critical reading performance of pupils favourable to the topic was not significantly different from that of pupils who were indifferent to the topic. Lower mean scores (17.02) on the critical reading tests significant at 1% level were obtained for pupils unfavourable to the Black group as compared to pupils who were indifferent to the Blacks. This was demonstrated to be due to neither the inferiority of the group in general reading ability, nor to the lower mental age. The author interpreted the finding, possibly, to be due to the disinclination of the group prejudiced against the Negroes to read about the topic and also to the material itself which was strongly pro-Negro in content, and therefore invited confrontation from those who hold convictions contrary to the view. Although the study used a fairly representative sample of 625 pupils, and quite a careful selection of pupils according to reading ability (measured by the Cooperative Reading Test) as well as maturity (measured by the California Short Form Test of Mental Maturity) were made, the unequal parallelism of the two texts; in the critical reading test, (one in poetry form, and the other in prose) made generalization of the results rather limited.

In past studies the relationship between personality factors and critical reading ability was usually reported to be low : correlations for grades 5 and 6 with critical reading was higher than among other grades. Piekarz (1956) in a case-study approach matched two students with I.Q.'s of 129 and 127, and asked them to read passages involving home and school. But only one was an able critical reader, leading him to conclude that there existed an attitudinal factor in critical ability. The noncritical reader had a poor attitude toward her parents, which led Piekarz to suggest that this factor affected the girl's reading of the passage; her personal biases, experiences and associations appeared to interfere with an accurate reading of the passages. On the other hand, the critical reader, with positive attitude of school and home, was able to remain objective and impersonal in his reading of the selections. The conclusion of this study should be read with caution due to the

small size of the sample as well as its questioned representativeness among other things.

Kemp (1967) compared the improvement in critical thinking of those low in dogmatism to those who were high in the same construct. He tested a total of 80 freshman students, 40 were assigned in the experimental group and the rest into a control group. These subjects were matched in intelligence, degree of openness and closed-mindedness. The control group did not receive assistance in critical thinking whereas the experimental group were asked to participate in a meeting, on the basis of which, solving problems of critical thinking tasks took place. All participants then discussed the reasons for their correct and incorrect conclusions. For each set of problems, the subjects were asked to state the factors which he or she considered to lead to the correctness or incorrectness of the problem solving activity. From this result and the result of the Watson-Glaser Critical thinking test and the Dogmatism Scale Form E administered to the participants, Kemp concluded that the experimental group performed better in critical thinking than the control group. Further, in the experimental group students who were 'high' in dogmatism improved in their critical thinking performance but those 'low' in dogmatism performed significantly better.

In an experimental study conducted by Groff (1962) at the elementary level that is fifth and sixth graders, children's expressed attitudes towards four content types of reading materials were compared with their scores on a test of critical reading utilizing the same content. Attitude questionnaires based on Thorndike's Fictitious Annotated Titles Questionnaire were constructed and given to four different content types of reading material: (1) boys' sports stories; (2) airplane flying stories; (3) girls' m'ld adventure; and (4) manners or social relations stories. The other attitude scales administered were modified Remmers' Scale for measuring Attitude toward Any School Subject and Tenenbaum's School attitude Questionnaire. The 305 chidren answered the questionnaires and then read the passages and answered questions involving critical analyses and responses.

Positive significant correlations ranging from .23 to .50 between pupils' expressed attitudes towards the different types of reading materials and scores on the critical reading test were found.

Wolf, King and Huck (1968) utilized 651 children in Grades 1 through six from seven public schools in Ohio to conduct an experimental research on the effects of critical reading instruction. In conjunction with the experiment Wolf and associates also investigated the factors related to critical reading abilities of these elementary school children. One of the factors examined was the personality factor. All the subjects were administered The California Test of Personality which has a reliability range of .88 to .94 with the sample. Grades one, two and three took the Primary form AA while grades four, five and six used the Elementary Form AA . The total personality score and the sub-scores of Personal and Social Adjustment were correlated with the critical reading instrument used but many of the correlation coefficients obtained were low and not significant. Only correlation involving Personality and Critical Reading Total were significantly different from zero, for grades 3, 5 and six, registering .37, .43 and .46 respectively. Specifically the effect of instruction in critical reading on personality could not be observed .

The above study revealed some interesting features in the relationship between critical reading ability and personality factors, in that, the slightly higher correlations between Critical Reading Total and Personality observed for Grade 5 and 6 could indicate that personality factors could be more marked and therefore have a larger relationship with reading critically, as children become older or attain higher levels in the school system.

The interactions between instructional methods (rule-example and example-rule) and individual aptitudes during the teaching of critical thinking, was pursued by Wright D.P. (1975). The major purpose of his study was to learn whether the two teaching methods were suitable for different learners (sample -275 sixth grade pupils), but this study also gives an insight on the attitudes toward

critical thinking instruction provided by the two methods. Instruction in critical thinking was found to yield significantly higher achievement scores than no instruction but attitudes towards the topic were only slightly better after the instruction.

Another interesting experiment, conducted by Baldwin and Readence (1979) will be reviewed here even though perceived authority could not be placed at the same category as attitudinal factors. The authors investigated the relationship between perceived authority and critical reading at graduate level. Sixty-two students from two universities, 27 undergraduates in elementary education majors and 35 graduates pursuing degrees in reading were given three articles to be read and evaluated using a standard form of evaluating journal article developed by the investigator. One of the articles was written in the form of a satire, but the other two were taken from reading research journals.

The investigators observed three levels of critical reading based on the students' responses to the tasks: The highest level of critical reading included those students who recognised the true intent of the author writing the satire. In direct contrast, the lowest level consisted of students who failed to recognise the satire, but also thought that the experiment was a legitimate and important contribution to the literature of reading research. The group of students intermediate in their critical reading ability responded negatively to the satirical article and failed to grasp that it was a fake research report.

When the condition and the context of the experiment were changed, that is, when more time was given for reading and evaluation, with the addition of some important hints, a more positive effect was observed. Baldwin and Readence (1979) inferred that

> *teacher's presence, tidy print, justified margins, perfect spelling, and a grading system which is most responsive to rote-learning may all combine to discourage critical divergent thinking.*

(Baldwin and Readance 1979: 619)

They assumed that it was the aura of authority which emanated from the teacher and text that was built upon students' school experiences until students automatically assume that textbooks and other professional publications are completely creditable sources of information.

Mature reading therefore demands students to acquire

> *an internal monitoring device which will guide critical reading independently of the purposes and biases of authors and teachers.*
>
> (Baldwin and Readance 1979 : 619)

The above studies on the relationship between critical reading ability and various attitudinal and personality factors showed consistent results; as far as the correlations are concerned - low but sometimes significant relationships could be established between the two variables. Crossen's controversial studies could not be interpreted to show pupils' critical reading performance to be correlated to more favourable attitude to the topic due to some confounding elements such as nature and type of texts. Piekarz's case study is highly unreliable as a basis of concluding that personal biases and unsupportive background result are related to weaker performance in critical reading, as only two pupils were used in the study. Both Kemp's and Wolf et al's experimental studies did reveal some form of relationship between personality factors and critical reading abilities, but these studies need to be replicated in other situations in order to establish any stable conclusion.

5.3. Intelligence, Academic Ability and General Ability.

Although intelligence, academic ability and general ability are different constructs, in this section the three are discussed together, as the number of studies already attempted between critical reading and the above three variables are small.

High correlations between intelligence and general reading ability have been acknowledged by Sochor (1958), Maney (1958), Wolf et al 1968) and others. In the case of critical reading and intelligence,

moderate to high correlations ranging from .48 to .70 had been reported by various research. (Sochor, Maney, Wolf, Sullivan , etc)

In Wolf et al's (1968) classic study already mentioned, factors hypothesized to be related to children's reading critically such as general reading ability, intelligence and personality were examined. With regard to general intelligence, represented by the Verbal Intelligence and the Non-verbal Intelligence measures, the correlations with critical reading ranged from .526 to .792 with the correlation between Verbal Intelligence and critical reading higher than those involving Non-verbal Intelligence. Verbal Intelligence accounted for approximately 28 to 63 percent of the variance in the Critical Reading Total scores, while the Non-verbal Intelligence accounted for only 10 percent of the variance in grade two and 49 percent of the variance in grade three. By using the analysis of covariance, the researchers found that in general, children of higher intelligence levels performed better in critical reading than middle I.Q. children who in turn performed better than low I.Q. children. Children across all levels of I.Q. were shown to be able to benefit from instruction on critical reading/thinking.

Uyidi (1974) studied the critical reading ability of third grade pupils at the elementary level using the Ohio-State University Critical Reading Test developed by Wolf et al. He also administered the Non-Verbal and Verbal IQ tests (California Short-Form Test of Mental Maturity to his subjects to find the relationship between IQ and critical reading ability. His findings indicated a 12.67% variance in critical reading ability was contributed by non-verbal IQ and 20.52 % of variance was contributed by Verbal IQ.

In the study conducted by Sochor (1958), 611 pupils from age 10 to 14 from suburban and urban Philadelphia schools were tested. The purpose of the study was to examine the relationship between intelligence and three types of reading ability one of which was critical reading. The Pitner General Ability Test Form A was used as a measure of verbal intelligence or language facility. The Verbal intelligence quotients of the sample ranged from 57 through 158,

showing a large range of language-intelligence. The critical reading test items were set up based on 13 skills cited earlier in the preceeding chapter. In the statistical design the Chi-square test for presence and absence of relationship was employed on the large sample. Both product-moment and biserial correlation were also used to measure the relationship. The result of this investigation showed critical reading in social studies having a correlation of .69 plus or minus .02 with verbal intelligence, whereas the correlation between intelligence and general and literal reading were higher at .83 and .72 respectively. It appears therefore that although the correlation between verbal intelligence and other type of reading was higher, there was a substantial correlation between critical reading comprehension and intelligence.

Maney (1958) reported similar results in her study on critical reading in Science, using 513 fifth grade pupils. The same Pintner Intelligence Test (Verbal) was used. The critical reading test used for the study was a section of the Intermediate Reading Test-Science that was specially developed by the said author for the study. The findings indicated that there existed a substantial relationship between verbal intelligence and critical reading comprehension in Science. Specifically the Pearson Product-Moment formula yielded a correlation of .67 plus or minus .02 between the Pintner Intelligence Test and the Critical reading scores. However, there was a very low or negligible relationship in science between proficiency in literal and reading comprehension. Therefore, proficiency in critical reading of science materials could not be predicted from scores obtained on literal reading tests or general reading tests. The author concluded that proficiency in critical reading in science cannot be predicted from group tests of verbal intelligence, also from literal reading and general reading scores. It also appears that the representative population of elementary school children tested tended to be low-achievers in critical reading in science.

The above two studies of Sochor in Social Studies and Maney in Science, showed surprisingly similar results in the relationship

between critical reading in the two content areas, that is, a correlation of .67 and .69 between critical reading and verbal intelligence, even though separate instruments were used for the critical reading test.

Piekarz (1956) who studied the critical reading ability of two students, a boy and a girl with an I.Q. of 129 and 127 respectively. Both students were of high intelligence and had high potential in their reading behaviour in terms of their ability to identify motives and points of view, and the ability to apply content and make generalization; but only one of the students scored highly in terms of critical analysis while the other one's score is one of the lowest. While some attitudinal factors could have been at play, this showed that high intelligence alone, did not necessarily make one a critical reader or thinker.

In Glaser's 1941 experimental study which looked at the effect of instruction on critical reading, children at all intelligence levels were demonstrated to be able to benefit from instruction in critical reading, these included those pupils with a measured I.Q. of less than 100 who were among those who profited most.

Shores and Saupe (1953) constructed *The Test of Reading for Problem-solving in Science* for elementary school where the material and content of the test were chosen to be typical of elementary-school science class, but the test items were constructed in such a way as to measure reading as a tool for problem solving. This test which had a reliability of .82 was administered to 214 fourth, fifth and sixth graders of middle socio-economic background in Illinois, together with other tests of achievements, the California Language Mental Maturity, California Non-language Mental Maturity, the Progressive Achievement Tests, Progressive Reading Age and the Progressive Arithmetic Age. The result from the study indicated intercorrelations among the five tests to be significantly positive in each instance, making it possible to generalize that some general ability measures are common in the tests. Reading for problem solving in science

correlated highest with reading age and language mental age than with non-language mental age, indicating the reading-language factor to be a major factor. It also correlated with chronological age although with lower significance. The investigators suggested that the ability to solve problems in science is nurtured less by maturation and incidental cultural impact than are the other measured abilities. Evidence in their study also supported the hypothesis that reading ability differentiates beyond the primary grades into somewhat specific abilities to read different kinds of material for different purposes.

Nardelli (1957) in his research to examine the effect of creative reading instruction, also found a high degree of relationship between intelligence test scores, reading achievement and mental age, and the ability to do *creative* which was actually critical reading.

Sullivan (1973) conducted an experiment on 250 sixth and 276 eighth grade pupils to find out about the relationship between five intellectual abilities and general intelligence which were significantly related to critical reading and reading comprehension. The Critical reading and thinking correlation coefficent was .51, the correlation between critical reading and intelligence was .61, and with literal comprehension , it was .70. The correlation between critical reading with arithmetic reasoning was substantially high (.68) surpassing that of word fluency, fluency of ideas and seeing problems.

Together the cluster of intellectual factors was slightly more important to reading than any one specific factor including general intelligence. When she measured the contribution of each factor using beta coefficients, only arithmetic reasoning and general intelligence contributed significantly to critical reading. The largest variance in the model was intelligence and arithmetic reasoning, and together they accounted for 30.8% and 52.6% of the variance of literal and critical reading. The remaining variable contributed only 4% of the explained variance at both grade levels.

In analysing the strength of correlations between critical reading and intelligence and general reading ability and intelligence, Arnold-Dole (1977) hypothesized that critical reading may be slightly less correlated with intelligence and with general reading ability in the older age groups. Her list of reported correlations between intelligence and general reading ability with critical reading is presented below.

Figure 5.1
REPORTED CORRELATIONS BETWEEN CRITICAL READING AND INTELLIGENCE AND CRITICAL READING AND GENERAL READING ABILITY.

Studies	CR and I.Q.	CR & GRA
Grades 4.5.6		
Crossen (1948)	.64	.64
Nardelli (1957)	.70	.71-.76
Shores and Saupe (1953)	.59 -.69	.73
Maney (1958)	.67	.60
Sochor (1958)	.69	.64
Groff (1962)	.48 -.55	.69 -.73
Wolf, et al (1967)	.61	.67
Follman & Lowe (1972- 73)	.57	.41
Grades 8 - 12		
Glaser (1941)	.48	.41
Trela (1967)		.69
Westbrook & Sellers (1967)	.53	
Peters, Peters & Kaufman (1973)		.59
Sullivan (1973)	.61-.71	
Follman & Lowe (1972 -73)	.59	.51

More recently Steward and Al-Abdul ah (1989) reported a study on the relationship between critical thinking measured by the Watson-Glazer Critical Thinking Appraisal (WGCTA) and academic success of college and university level students, using 107 male and 130 female undergraduates. The resuts showed that in general,

undergraduates who obtained higher total WGCTA scores also had higher cumulative grade point averages, that is the GPAs. The findings also indicated that not all aspects of the ability to think critically contribute equally to overall academic performance, although the abilities to accurately infer, interpret, and evaluate arguments were found to significantly correlate with cumulative GPA. Only the abilities to infer and evaluate arguments significantly and uniquely contributed to 9.2% of the variance with cumulative GPA.

Other studies which investigated the particular relationship between intelligence, general ability and academic indicators were Spivak (1974) , Gall (1973), Culyer (1973), Downing (1974), Mac Dougall (1966) who in a series of studies on the growth of critical reading ability all examined the nature of relationship between intelligence and critical reading/thinking ability.

Gall administered The California Short-Form Test of Mental Maturity 1963 S-Form Level 2 and the Intermediate Critical Reading Test, a thirty-item test developed by himself to 537 student from three northwest Florida elementary schools. These students were from the fourth, fifth and sixth grades. Gall found a significant relationship between the critical reading test scores and the measures of intelligence. Spivak used a different level of subjects, pupils in Grade seven and eight for his studies. He administered the same test of critical reading ability plus The Otis-Lennon Mental Ability Test, 1967 Form J, Intermediate Level and the Stanford Achievement Test, 1964 Form X to his 177 seventh and 163 eighth grade pupils from Florida junior high schools. He concluded that there was a significant degree of linear association between intelligence and reading achievement as measured by the tests and critical reading ability.

Culyer (1973) used the same tests for critical read ng ability and intelligence as Gall's for his subjects, who were in Grades ten, eleven and twelve. He reported a highly significant relationship between critical reading ability and intelligence in his subjects.

Downing (1974) revealed the same significant relationship between intelligence and critical reading ability for Grade thirteen and fourteen students using similar critical reading test that he himself developed for more advanced students.

It could be concluded from the above studies that the relationship between intelligence, whether verbal or non-verbal, with critical reading ability is significant. Correlation coefficients ranging between .48 to .71 had been established in most of the studies using quite large samples of students from the elementary right to the advanced level. It must also be pointed out that most of the above studies used established standardized tests of intelligence and newly developed critical reading tests, however, it is not known whether or not, if general ability or achievement test were to be utilized, the result could be replicated. Furthermore, the extent of overlapping between the intelligence and the reading factor as found in some IQ tests is still not clear .

5.4   General Reading Comprehension

General reading comprehension ability, literal reading ability in any content area had been shown to have high correlations with critical reading ability. The degree of relationship between general reading ability and literal reading ability with critical reading ability was found to be in the region of .64 and .61 respectvely. Sochor had shown that literal and critical reading comprehension in social studies appeared to be relatively independent abilities when intelligence was held constant. Individual critical reading comprehension skills also seemed to be relatively independent of the ability to comprehend literally in science.

The Shores and Saupe 1953 study mentioned earlier had suggested a high language-reading comprehension factor correlating with problem-solving in science at the elementary school level. They reported a .69 and .73 correlations between read ng in science and California Language Mental Maturity and Progressive Reading Age respectively.

Rocha, A.P (1985) also reported a difference in critical reading between students of high and low general reading ability using the Gates-Mac-ginitie Reading Test.

In all, it is safe to suggest that general comprehension ability including literal comprehension has close relationship with critical reading ability, for pupils who could better comprehend general materials were able to have more insight in 'reading between and beyond the lines'.

5.5 Gender

Questions of gender differences in intelligence, general ability reading ability and other type of abilities and skills have generated many hypotheses regarding the differences that may be manifested between the sexes. In the case of reading and reading comprehension, most research has found that girls are better at reading than boys, however, many other research have also commonly accepted that boys are better critical thinkers than girls. This conflicting picture motivated a number of critical reading/thinking researchers to probe further into the matter.

Wolf and associates (1968) reported no significant difference in performance of the critical reading test between boys and girls in their already mentioned studies. Here the beneficial effect of critical reading instruction were also found to be equal for both sexes of children at all grade levels except at grade 5, where girls obtained significantly more benefit from instruction than boys.

An interesting finding on the differential attitudes of girls and boys toward content type materials and critical reading scores was reported by Groff (1962) mentioned earlier. Girls' attitudes toward 'manner' stories were more highly correlated to critical reading scores (.50) than were the boys' reading scores and attitudes towards this passage (.23). Groff suggested sex differences influence attitudes towards reading critically.

Downing (1973), Gall (1973) and Rocha (1985) did not find any significant difference in the critical reading abilities of girls and boys who were the subjects in their study on critical reading ability. But Spivak (1974) reporting similar study for the seventh and eighth grade and Deliste's (1974) study for fourth grade pupils did find significant gender differences in critical reading ability. Desliste noted the girls performing better in some skills than boys.

Thus conflicting results concerning gender differences in the ability to read and think critically were obtained, the status therefore is not conclusive as yet.

5.6   The Teaching Of Critical Reading

Research in the teaching of critical reading mainly focussed on the feasibility of teaching the subject as well as identifying at which grade level and what category of pupils it could suitably be taught. Earlier attempts at teaching critical reading especially the teaching of informal logic were aimed at higher grade students at the secondary, college or university levels. Kay (1946), for instance, used a pretest-posttest design to measure gains of 385 high school students who were instructed on four dimensions of critical reading, that is the ability to form their own conclusions, to discern the author's purpose, and to make comparisons of conflicting or correlating ideas by one of several authors. She found that between 14 and 22 percent of the students did gain in their abillity to form their own conclusions, to discern the author's purpose and to make comparisons of conflicting or correlating ideas. Less than 6 percent of the students were able to improve in their ability to discover inaccuracies, inconsistencies and omissions of essential information. But due to unavailability of any control group and statistical analysis of data which was lacking, it is impossible to tell if the results were due to the treatment or if the gains were statist cally significant.

Nardelli's 1957 research had already been mentioned. He did employ control group which comprised of three groups of pupils in the sixth

grade and matched them in reading ability, age, IQ. with the experimental groups. He himself taught *creative reading* skills such as interpreting author's suggestions, interpreting feelings and recognizing propaganda devices. A statistically significant major gain in the area of recognizing propaganda devices was obtained by the experimental group. The above study suggested significant benefits to be reaped as a result of instruction in critical reading at the sixth grade level.

McCullough (1957), Wolf (1968) and her associates, and a few others studied the possibility of teaching critical reading at the lower grade levels, in the case of Wolf et al, from grade 1 to grade 6. They were able to conclude that children in the experimental group who received instruction in critical reading did as well as the control group, if not better in general reading test.

The study of Wolf et al's was carefully designed to cater for initial differences between the control and experimental groups. They employed the technique of analysis of covariance to measure the treatment effect as intact classrooms of non-randomly assigned group was used. The children in the experimental group at every grade level did consistently better than those from the control group on the Ohio State University Critical Reading Test developed by them. Significant differences in favour of the experimental group were observed on the Logic section. In the General and Literature section, the control group sometimes did better than the experimental group. The authors attributed success of the logic section to the fact that most of the teachers and students had not been previously exposed to the skills of that type and also due to the fact that direct instruction with explicit criteria for using logical reasoning was utilized for that section. Nevertheless the benefits of critical reading instruction in all grade levels could be infered from the result.

Creutz and Gezi (1965) attempted to find out the viability of developing critical thinking using the current events class. The ninth and tenth grade pupils of Beverly Hills High School, California

were assigned to two groups, the experimental and the control group. Both groups were given a special critical thinking test based on the current events lessons at the outset of the investigation. The test consists of 50 objective questions designed to determine the degree to which they had developed selected critical thinking skills significant for the understanding of the current events lessons such as evaluation, interpretation, identification of causal relations, awareness of trends and use of informational resources.

The experimental group was given exercises intended to reinforce critical thinking skills, whilst the control group was taught in the normal way. A post-test on critical thinking was given at the end of the experimental treatment and t-test was used to determine the significant gain or loss in the construct. The results indicated that the mean scores of the pre-test obtained by the experimental group were no different from the control group, but a higher performance of the experimental group was noted for the post-test. Their scores ranged from 19 to 42 with a mean score of 32.5, while the control group obtained scores ranging from 9 to 39 with a group mean of 21.1. A significant gain of 5.8 (at .001 level) was thus reported in favour of the experimental group, strengthening the evidence of the beneficial effect of teaching critical thinking in secondary language classrooms.

Wright (1975) in exploring the theoretical relations between the dimensions of critical thinking, studied the application of four skills to concepts such as generalization analogy and inference. The four skills were the abilities to discriminate between instances of logical and illogical reasoning, identifying fallacies in illogical instances, the ability to discriminate between critical and uncritical responses to fallacies, and the ability to make critical responses to illogical reasoning. The important summary finding is that instruction in critical thinking yielded significantly higher achievement scores than no instruction.

5.6.1 Critical Reading and Teachers' Questions

Various propositions and programmes to teach critical reading and thinking at the primary, intermediate or college levels were put forward following the success of early researchers to enhance critical reading and thinking ability through instruction. One of the propositions is the use of Bloom's Taxonomy (Bloom 1974) in teaching critical thinking (Paul 1985) since teachers were already familiar with it. In the cognitive domain of the Taxonomy, the list of educational objectives was classified as knowledge, comprehension, application, analysis, synthesis and evaluation. For teachers, critical thinking was thought to be essential because higher -order thinking is essential (Paul 1985). Therefore to learn how to think critically in this straight forward view is to learn how to ask and answer questions of analysis, synthesis and evaluation. Paul (1985) argued that this simplistic approach is quite misleading and suggested that critical thinking instruction requires that teachers have a full range of insight into the cognitive processes and their complex interrelationships, and realize that rational learning is a "process" rather than "product".

In the research conducted by Wolf et al cited earlier, teachers' verbal behaviour including teachers' questions in eliciting critical responses from children were observed, and observation instruments for teachers' behaviour and pupils' responses were developed and later validated along with instructional units. The teachers' categories were gathering specific facts, clarifying statements or questions, interpreting or infering statements or questions, analysing statements or questions, summarizing statement or questions, and evaluative statements or questions.

Students' responses were classified as critical and non-critical just on the basis of the correctness of the content, but rather on the basis of the reasoning involved. The main criterion in determining the pupil categories was the differentiation of levels of thinking that were evident in the pupils' responses. Guildford's 1965 Structure of Intellect which describes five major intellectual abillities: memory, cognition, convergent and divergent thinking and

evaluation was adapted for the study and then arranged in a continuum with random responses at the respective levels. The levels were: Level 1 - random responses, Level 2 - literal responses, Level 3 - giving illustrations, applying, and interpreting; Level 4 - hypothesizing and theorizing and level 5 - critical thinking, that is evaluating, and judging based on specific criteria.

The teaching units, developed by teachers themselves, consisted of 12 unit lessons, 6 for the experimental and another 6 for the control group. Teachers who were teaching the units were given detailed explanations and training which included explanations of the content, the purpose, its unique features, difficult concepts, and teaching techniques and materials to be used. For the experimental groups, the teaching units developed were three suggested ways of working with influential and persuasive materials and three suggested ways of working with literary sections. The critical reading skills were grouped into semantics, logic, general authenticity skills, literary form, components of literature and literary devices. For the control group, a similar format was employed but the format was not intended to develop evaluative reading skills, instead, the units used a wide variety of children's books.

The analysis of teacher behaviour revealed that teachers ask more questions than they made statements: the ratio of questions to statements for both experimental and control teachers was approximately four to one. The experimental teachers asked more analysing and evaluating types of questions while the control teachers asked more spec fic fact, and more interpreting and applying types of questions. The kinds of questions teachers asked have been shown to influence the depth of pupil's thinking. In both the control and experimental groups, teachers' questions on gathering specific facts elicited guessing and literal responses whereas analysing and evaluating questions produced the responses more attuned to hypothesizing and evaluating from pupils. Children who received instruction in critical reading gave more evaluative

responses and fewer literal, memory, and infering responses than their counterparts who did not receive such instruction.

Thus the importance of teacher questions as key elements in critical reading/thinking has been established. Following this, many research activities were directed at seeing the relationship between teachers' questions and students' behaviour. Teachers were instructed to ask more higher-order questions in the classroom in order to promote higher-order thinking. In reading comprehension, instead of asking questions of the literal type, more questions of the critical and evaluative type were proposed. These teachers were taught to develop comprehension questions based on the matrix and while teaching they were encouraged to get their own students to ask questions from the passages. The authors, (Falkoff and Moss 1984) indicated positive signs but it was difficult to arrive at a conclusive evaluation of the project as it still lacked empirical evidence.

5.6.2. The Directed Reading/Thinking Approach (DRTA)

Stauffer (1969) is the originator of this approach, which has recently gained wide interest in the teaching of reading comprehension and thinking. It has been identified as an exemplary instructional activity for developing comprehension and critical thinking (Anderson 1984; Tierney and Pearson 1986). The most important feature of this approach is that, reading is taught as a th'nking process and that th's process could be guided by teachers. The primary object was to develop skill in critical reading.

A major distinguishing feature is the identification of purpose in reading, where either the reader declares his own purpose in reading or he adopts the purpose or purposes of others, so that he knows what he wants out of the reading activity. The reader also speculates and make predictions about the nature of his reading by using to the fullest his background experiences. The reader is encouraged to use his metacognitive skills to the process, sometimes examining aloud his line of reasoning. He is always encouraged to think and to reexamine his logic to achieve a fit

between what is known and what is predicted. Readers normally work in groups and are exposed to all types of reading especia ly reading of the extended text, that is, texts that go beyond word, sentence, and paragraph boundaries.

Critical to developing comprehension in the DRTA are the questioning strategies employed by teachers in initiating and extending discussion in order to guide students' thinking during reading. The questions were of the open-ended type which requires predictive answers, drawing conclusions or providing support. During a DRTA lesson teachers frequently asks, "What do you think?", "Why do you think so?" and "Can you prove it?"

Wilkerson (1984) investigated the effectiveness of the DRTA approach and compared it with the DRA or directed reading approach using qualitative analysis. Her 16 subjects, 8 males and 8 females balanced in their reading ability were assigned to two groups - one group participated in the DRTA lessons while the other group were taught using the DRA method. But both groups read the same segment from a social studies instruction. The lessons were videotaped and transcribed. The subjects were then interviewed individually by the researcher where they were asked to recall the most important idea as well as other ideas from the lesson; including to reconstruct their thinking during segments of the lesson shown in the videotape. A qualitative taxonomy of inferences and a descriptive analysis for categorization of inferences and information included in the inferences was undertaken. Statistica y significant differences between the two groups were found n inferencing. The important point indicated in the study was that the process of comprehension was different in the DRTA and the DRA approach.

Haggard (1988) was able to report that DRTA does indeed promote cr tical thinking, as it shares common elements which are wide y recognized as essential components of the critical thinking process. However, empirical data on the effectiveness of this approach in enhancing critical reading is not yet available.

5.6.3. The Intra-Act Procedure for Teaching Critical Reading

Hoffman (1979) proposes "valuing" as a theoretical construct which offers promise for teaching critical reading. In the value clarification process originated by Casteel and Stahl (1975), a four phase classroom activities was identified:

- In the *comprehension phase*, students develop an understanding of the topic;

- in the *relational phase* students interact in groups to examine the relationship of what they have read with their own backgrounds and knowledge;

- in the *valuation phase* personal expressions of values and feelings are associated with categories such as preferential, consequential, critical, imperative and emotive statements. Finally,

- in the *reflective phase* students are encouraged to reflect on the values and feelings they have experienced and expressed.

The Intra-Act procedure was modelled closely from the above phases and was *designed to stimulate spontaneous verbal interaction* among readers. In this procedure pupils form small groups to solve problems through *intra*-personal dialogue, an exercise in self-*act* visualization conducive to concept formation. The goal of the exercise is to develop pupils' skill in critical and evaluative reading, that is the ability to

scrutinize a position not only for its internal consistency but also for its external validity when examined from a multitude of different perspectives.

(Hoffman 1979 : 607)

5.6.4. Using Literature To Teach Critical Reading

Critical reading had been defined as a positive approach to the printed page, the purpose of reading critically in literature *is not to destroy or to dissect the work but to enhance one's appreciation of it.* (Ellinger & MacDougall 1967). Literary materials provide a rich source in the teaching of critical thinking and critical reading.

Frazier and Schaatz (1967), Usery, M (1967), Hill, J (1967), Cough (1973), Young (1986) and Commeeyras (1989) suggested the possibility and the effectiveness of developing the critical reader through literature including children's literature. Ellinger and MacDougall (1967) suggested some skills taught in the area of literary form. These include the skills to distinguish between types or forms of literature, to recognize the characteristics of specific literary forms and more importantly, to develop the criteria for evaluating those forms. The components of literature identified in critical reading were characterization, plot structure, and theme and setting.

Usery (1967) proposed using children's literature as a medium for the application of teaching *the process* of critical thinking which she described as four related but not necessarily sequential types of behaviour: the act of perceiving, analysing, predicting and judging.

Coommeyras (1989) more recently too proposed an approach, which made use of a grid designed to engage students in inductive reasoning, in evaluating literature especially characterization, for teaching critical thinking. Some of the critical thinking skills that were claimed to be promoted were the ability to see similarities and difference, the ability to seek evidence and counter -evidence, the ability to judge the credibility of a source or to judge whether an observation is reliable, and, the ability to determine whether a generalization is warranted.

The dispositions towards critical thinking that could be enhanced include the disposition to keep in mind the original or basic concern, the disposition to hold judgement when evidence and reasons are insufficient as well as the disposition and ability to seek reasons.

The above must be viewed as hypothetical possibilities of utilising literature to enhance critical ability, but actual investigations into the effectiveness of utilising children's l terature in the instruction of critical reading as a viable alternat ve to teaching literature were attempted by Coughlin (1973) and Commeyras (1989). In

Coughlin's study, instruction in critical reading was offered in the form of field test in which children's literature was used as the sole subject. The outcome of the study shows promise in the use of such literary material in the teaching of critical reading.

Young (1986), in his experimental study on third grade pupils used literature units integrating creative and critical thinking skills into reading instruction in three experimental classrooms. An independent t-test was used to test the difference in means between the experimental and comparison schools on gains in reading performance and attitude towards reading. A significant gain in reading performance measured by the Metropolitan Survey Test, and attitude towards reading, measured by the Attitude Toward Reading Inventory was reported. He concluded that training in creative and critical thinking may make the difference in the reading achievement of low readers.

5.6.5 Teaching Critical Reading Diagnostically

Lowere and Scandura (1973-1974) attempted to develop systematic material for diagnostic testing and for teaching critical reading. They produced materials based on logical inference rules of critical thinking as logical reasoning skill in critical reading.

In this prototype diagnostic procedure the materials chosen were varied according to the five dimensions of logical rules identified analytically for the study, as well as by the levels of difficulty along which each of the material were determined. Therefore, for each logical inference rule, reading passages at a predetermined level of difficulty along each dimension were constructed. The testing procedure depended on the assumption that success in using a logical rule at any one level of difficulty implied success at the less difficult level. On the other hand failure at any level of difficulty along the particular dimension implied failure to understand the proper rule.

To test the viability of such material and approach, 45 children of the second, third and fourth grade levels, from nine classrooms in Philadelphia were divided into experimental and control groups and given the treatment indicated above. The experimental subjects who failed to score at any particular level or along any dimension were given diagnostic instructions for the specific logical rule, unlike the failed control subjects who also were not given any instruction at all. Both groups of subjects were then post-tested after a lapse of 50 - 64 days after pretesting.

A significant favourable result was obtained: every experimental subject scored better on the post-tests than the pretest, except, of course the nine subjects who already scored at the top levels. This did not happen for the control subjects.

The test validation results of the study indicated clearly that the test materials were suitable for diagnostic teaching of the skills of critical reading; but more interestingly, the result indicated support for the hierarchical assumptions of the dimensions and difficulty levels, for example, subjects who met the criterion at difficulty level 3 along a dimension also tended to meet criteria at level 2, and vice versa, those who failed the test at a lower level of difficulty were also unable to succeed at the higher level.

A more total approach to the teaching of critical thinking in classrooms was advanced by Paul (1985) and Lipman (1991). Paul and a group of teachers and teacher educators developed a series of packages which guides teachers on how to cultivate good critical thinking dispositions and attitudes on their pupils. The package includes lesson plans and how to remodel lesson plans in language arts, social studies and science.

Lipman's (1991) contribution was in advocating the teaching of philosophy which was redesigned and reconstructed to entice children, young and old. A central aspect to the pedagogy which he initiated is the formation of classroom communities of inquiry. A prototype of this method is as follows. The first stage involved the

offering of a text which will be used as a model in story form, where children can reflect on the values and the culture. This will and culminate in the childrens' gradual internalization of thinking behaviours of the fictional characters. Then, with the teachers as mediators, the children construct and discuss their cognitive agenda. Their cognitive skills will be sharpened by further elaboration and inquiry, often conducted on a collective basis. Exercises, plans and alternatives were discussed and examined until the students achieved a deepened sense of meaning with strengthened judgement. Teachers and curiculum play important role to realize this community of inquiry.

5.7 Growth in Critical Reading Ability

There is no doubt that an important aspect of critical reading to be addressed by research is the question of growth or enhancement in critical reading ability. In 1973 and 1974, researchers from The Florida State University, Gall, Spivak and Culyer, conducted a series of similar studies involving a cross-section of students from the lowest to the highest grade levels in their attempt to address the possibility of enhancing critical reading ability. The man instrument developed and used for the studies was a thirty-two item test developed by Gall (1973) pitched at a readability level of 3.5 or below, called The Intermediate Critical Reading Test. Gall investigated 537 students at the fourth, fifth and sixth levels, Spivak (1974) studied 340 pupils from the seventh and eighth grades, and Culyer (1973) examined 669 students in Grades ten, eleven and twelve. In addition to determining growth in critical reading ability, they a so determined the relationships between intelligence, reading achievement (measured by the appropiate standardized test for the age group), and gender differences with critical reading ability.

There appeared to be a significant difference in critical reading ability of grades 4, 5, 6. 7 and 8 students; but no significant growth pattern in level 10, 11 and 12 was reported. A significant relationship seemed to exist between *intelligence and critical*

reading , as well as *reading achievement and critical reading ability* of pupils at *all* grade levels . Expectedly, no significant relationship was found to exist between *sex and critical reading ability* at grades 4, 5, 6, 10, 11 and 12, but significant differences were observed for the girls and boys at grades 7 and 8, with the mean scores of the girls in critical reading higher than that of the boys.

Similar results were obtained by Downing, F.M. (1974) while investigating the same issue at Memphis State University, but his study was pitched for advanced students at grades thirteen and fourteen. The critical reading instrument used in his study was The Advanced Critical Reading Test, an 80 item instrument with readability levels between Grades 3.5 to 14.0, developed by the researcher.

5.8 Conclusion

In conclusion, the above studies seem to throw light and confirm some of the earlier findings on the correlates of critical reading ability. One of the most important and stable findings on variables affecting critical reading ability is its relationship with intelligence and general intellectual abilities whose correlation with reading comprehension and critical reading was found to range from high to moderate. Next, the correlation between general reading, reading comprehension and literal comprehension was also found to range from high to moderate. In fact most studies on critical reading and thinking investigated the relationship of either one or both factors on the construct of critical reading. The relationship between attitudinal and personal factors like age, gender and grade level was also investigated, but the results were not conclusive or confirmatory, with some conflictings result obtained in the case of gender differences. Nevertheless, it is fair to suggest that positive attitude and personality towards being open-minded and critical affect the ability to think and read critically as the studies by Piekarz (1956) and Arnold-Dole (1977), Kemp (1967) suggested. Whether these studies are generalizable outside the contexts of their studies, given limitations with regard

to instrumentation and sampling is yet another issue to be looked into.

The findings of research into the *teaching* of critical thinking and reading are more confirmatory and stable. No study has so far been found to report any detrimental effect of critical thinking or critical reading instruction to any group of pupils. In fact, experimental studies by Glaser (1941), Nardelli(1957), Wolf et al (1968), Creutz and Gezi (1965) all indicate the beneficial effect of critical reading instruction to various types of learners and situations, even though the methods or strategies employed were sometimes quite different. It also lends support to the possibility of improving or enhancing the critical ability of pupils through instruction.

Various approaches to the teaching of critical reading and thinking were reviewed, among which are the use of teachers' questions, teaching critical reading and thinking through writing, the Directed Reading/thinking approach by Stauffer (1969), the Intra-Act procedure by Hoffman (1979), besides the use of literature to teach critical reading and thinking. Besides the above, a mushroom of approaches, methods and strategies was recently advanced in line with the 'movement' of teaching thinking through language lessons or language arts.

PART THREE

RESEARCH DESIGN AND THE TRIAL TESTS

This section describes the research design, test construction and trial-run study. Chapter 6 explains the objectives of the study, the theoretical framework and the three phases of study.

In Chapter 7, the construction and development of two tests: The Malay Language Critical Reading test and the Critical Thinking disposition Inventory will be discussed.

Chapter 8 will present the result of trial-run study conducted before revision of the two instruments were performed.

CHAPTER 6
RESEARCH DESIGN AND METHODOLOGY

6.1. Introduction

In this chapter the objectives of the study, the theories for framework underpinning critical reading-thinking ability, the hypotheses and the three phases of the study will be presented.

6.2 Objectives of the Study

The central purpose of this study is to examine the critical reading and thinking ability of Singaporean Malay pupils in secondary schools in Malay language, their mother tongue. Two main lines of inquiry will be pursued: The first line of inquiry involves a comprehensive search for the construct of critical reading and thinking ability and the skill or subskills underlying the construct. The operational aim of this line of investigation is to produce a critical reading and thinking test that is able to appraise the specific critical reading and thinking abilities of the pupils so that identification of the pupils' strengths and weaknesses in critical reading can logically follow.

Secondly, an exploratory model of the correlates of critical reading ability of Singaporean Malay pupils will be produced through the use of the tests developed by the researcher. Thus this phase of investigation focussed on exploring the relationships between critical reading abilities and selected pupils' personal and socio-economic variables.

These two main lines of inquiry will define the guiding principles of the present investigation as well as the scope of the study. The principles guided the following questions:

I. What is the construct of critical reading-thinking ability?

II. What is the nature of the critical reading ability of Singaporean Malay pupils in the Malay language?

III What are the relationships between critical reading ability of Singaporean Malay pupils and selected personal, educational and socio-economic variables.

6.3 Conceptual Model for the Construct of Critical Reading-Thinking Ability

After a comprehensive review of the literature the researcher believes the existence of a construct termed as critical reading-thinking ability which is a component of reading comprehension and of a level higher than literal reading comprehension. Both the terms *reading* and *thinking* are used in the present model as one cannot exist without the other: Reading is thinking and critical thinking during reading is a special kind of reflective rational thinking where one's critical thoughts and disposition or evaluative way of thinking is utilised during the process of reading. In a sense it could be described as a specific *critical thinking ability* applied during a special situation, in this case, reading. Thinking occurs all the time during reading, whether the reader is conscious of it or not; and whether the process is automatic or laboured.

Critical reading ability is here defined as the ability to recognize, comprehend, apply, analyse, synthesize and evaluate written arguments and discourse in a critical manner. Critical manner means the reflective, open-minded, logical and rational way of solving problems, in this case, comprehending written texts and discourse. Critical reading involves both the process of critical thinking and reading comprehension. The outcome of an effective process of critical thinking and reading should be good critical judgement and this is based on the knowledge, ability and disposition of the reader.

Critical Reading-Thinking Disposition

Disposition is the unconscious attitude, aptitude or emotional make-up of a person toward some form of behaviour. A person who is more disposed towards something is more likely to behave in a certain way than a person who is not so inclined. The affective domain of critical thinking is termed critical thinking d'sposition. A person is said to be *critically disposed* if he or she is open-minded, fair-minded, tries to seek reasons, takes into account the total situation, does not accept anything at face value and is sceptical. A critical reader or thinker is thought to manifest a higher degree of critical disposition than those who are uncritical.

This model also recognizes the importance of specific knowledge of a particular subject matter on the part of the reader, the reader's purpose for reading, the particular reading situations, the degree of reading proficiency as well as the reader's disposition and attitudes, that determines the outcome of critical reading..

These complex situations and processes operating during · critical reading acts could be translated into skills or subskills of critical reading ability depending on the situations and the nature of the reading input reflected or evaluated by the reader. It could also be dependent on or affected by, the content of the text, the readability of the text, the style of writing and others.

It is possible through the variety of inputs of reading 'content', that at least two dimensions of critical reading be present: one, the logic-oriented dimension and secondly, the core critical reading dimension. These dimensions are not necessarily discrete but could sometimes overlap. The skills related to logic includes such traditional logical operations as determining the validity and soundness of conclusions deductively and inductively, finding ambiguities, hidden assumptions and fallacies of arguments. The core critical reading skills are those that are centred around the reader's awareness of author's motives, values, styles, and biases. It is thought that both the logic-oriented and the core critical reading skills could be further classified into the surface, transparent or one-layer operation, and the more difficult, deeper, complex, and hidden type of meaning extraction. Obviously, these two broad skills are not dichotomous but stretch along a continuum, ranging from the most transparent to the most hidden.

Under the logic-oriented dimension, normally related to surface level of text processing, four skills are identified. They are:
- the ability to evaluate deductive inferences
- the ability to evaluate inductive inferences
- the ability to evaluate the soundness of generalizations,
- the ability to recognize hidden assumptions.

Under the core critical reading dimensions which are less dependent on surface text processing, the following skills are identified:

- the ability to identify bias in statements,
- the ability to recognize author's motive,
- the ability to identify fact or opinion,
- the ability to identify relevant and irrelevant materials,
- the ability to recognise similarities and differences,
- the ability to evaluate strength of arguments.

The following diagram (Figure 6.1) illustrates the conceptual framework of the critical reading-thinking model of this study.

It is essential to make a distinction between *critical reading -thinking events* and *critical reading -thinking act* to differentiate between the *events* where the act occurs and the *act* itself. Critical reading-thinking *act* is a *process* of reading and thinking: whereas the critical reading-thinking *event* comprises the outcome of both the act of reading and thinking. The reader undergoes the process of reading and thinking through a piece of textual material which resulted in the piece of text to be comprehended or understood. It is basically evaluative, active type of thinking employed during reading situations where the texts or written materials serves as input or stimulus which induces the reader to use his various reading strategies against the reading task in order to achieve the reading purpose that he sets himself or is set by others with his cooperation.

Two main theories, the *schema theory of reading comprehension* (advanced by Rumelhart, Kintsch, Anderson and Person and others) and the *critical thinking theory* (formulated by Robert Ennis) formed the basis of this present view of critical reading-thinking. According to the schema theory, schemata or mental frameworks stored in the reader's mind, which are formed from experiential knowledge, knowledge of the world, the value-systems and beliefs, held by the reader are activated or instantiated during the process of reading. Only the relevant schemata are activated when the textual information provided by the text is somehow understood.

Figure 6.1
THE POSTULATED MODEL OF THE CONSTRUCT OF CRITICAL READING-
THINKING ABILITY

Input from society in the form of background knowledge, experiences and values.		Text Related Features	

General Ability	Critical Thinking Disposition	Reading Comprehension Ability

CRITICAL READING-THINKING ABILITY

Logic-oriented Skills	Core Critical Reading Skills
• inductive reasoning • deductive reasoning • evaluating generalizations • evaluating assumptions	• detecting bias, contradictions • evaluating soundness of arguments • recognizing author's motive • recognizing similarities & differences • recognizing uses and sources of textual materials • evaluating the strength of arguments

These knowledge or value systems are formed through interactions in society which also imposes its ideological and political structure to a small or larger degree depending on the disposition or psycho-cognitive state of the reader. The socio-cultural and politico-ideological perspective is thus indirectly brought into action through relevant thought activation. Hence societal value-systems

in the form of experiential accessibility or input has a possibility of conditioning or influencing one's judgement.

Memory is involved in schemata activation. During the process of reading, the generic knowledge embedded in cognitive schemata are being activated when the cues or meaning derived from the text becomes clear to the reader. A heightened evaluative type of schemata could quickly be brought into effect when a state of inconsistency or contradiction is detected in the meaning generated through literal comprehension, resulting in further processing or thinking before the meaning is evaluated and a state of comprehension or consistency is achieved. Layers or stages of processing may be involved, with some processes requiring one level of processing while others require more layers or levels of meaning to be uncovered before the true picture or comprehension (based on the reader's subjective feelings and schema) occured.

All types or levels of thinking will be utilized in the process of critical thinking as the process of 'believing and doing' is very complex. Therefore reasoning, deduction, induction, assimilation, discrimination (following Worden's 1980 model) and clarification, identification, recognition, inference synthesis etc (Ennis's 1985 theory) are postulated to be utilized during crtical thinking process. The outcome of critical thinking can be good or bad, effective or ineffective, but the product, critical thought, should be differentiated from the process itself.

The specific thinking process during reading must involve triangulation among the reader (with prior background knowledge) with the piece of text, as well as the author or the originator of the text. This interaction is thought to be iterative in nature, with the number of iterations depending on the nature and complexity of the triangulation. Thus the specific ability to read critically depends on the text readability, idea accessibility and intensity of the reading stimulus. It is also dependent on the critical disposition, attitude and motivation or purpose of the reader possibly resulting in the activation of the various schemata, and therefore could be directly related to the abil'ty to solve the 'problem', that is, to clarify the inconsistencies in order to reach balance or judgements.

The model of critical reading-thinking process postulated by this study comprises both the disposition as well as the ability factor to be effectual during the process of critical reading-thinking. Both these factors are present in individuals to varying degrees and could be displayed differently in different critical reading events such as different topics and at different times. Prior knowledge and therefore societal influences act on the individual's critical disposition as well as his ability during critical reading events.

This model is different from that of Worden's, Wolf et al's, Sochor's and Maney's, in a number of ways. Firstly, it addresses the question of *disposition*, specifically critical thinking disposition of the readers which may have an effect on the ability to read critically. Secondly, the type of critical reading skills identified are more varied as well as more specific in nature, utilizing both the logic-oriented component and a core critical thinking/reading component. The four logic-oriented skills are less than that of Wolf et al's and much more specific than Worden's. The six core critical reading skills are also much more specific and easier to delineate than that of Worden's where such component as "assessment of completeness', for example are harder to determine. Unlike The OSU Critical Reading Test, only one dimension of critical reading skill is designed to cover both literary and expository text, and with the exception of a few passages, generally, the passages in this test are also shorter and covers a wider variety of topics.

The above theoretical model of critical reading-thinking ability is central to the purpose of research and the formulation of the research objectives. The operationalization of the research objectives however, coincides with three research phases of the study, namely the test construction phase, the standardization phase and the model exploration phase. The specific research objectives guiding the three phases were as follows:

6.4. Phase 1: Test Construction and Development

The main thrust of this phase of study is the construction of the principal instrument, The Malay Language Critical Reading Test (MLCRT), and the Critical Thinking Disposition Inventory (CTDI), a

new instrument developed in conjuction with the MLCRT. These tests were constructed based on the conceptual framework of the construct of critical reading and thinking ability adopted by the study as a result of a comprehensive literature review on the subject.

The MLCRT, which is a multi-skill construct is targeted to be used at the secondary level, and will be administered on a group or class basis. It is composed of ten subskills intended to measure the critical reading ability of Singaporean Malay pupils in the Malay language. The test will comprise narrative and expository passages with multiple-choice questions at the end of reading passages. In addition a short pupil questionnaire to obtain background information of the pupils was also developed.

The main objectives of this test construction phase of research were:

1) To identify and verify a list of critical reading thinking skills underlying the ability of Singaporean Malay secondary school pupils to read critically in the Malay language. This will be achieved through a comprehensive literature review.

2) To construct a valid and reliable instrument to be called the Malay Language Critical Reading Test (MLCRT) for assessing Malay Singaporean pupils' ability to read critically in Malay language.

3) To construct an instrument called The Critical Thinking Disposition Inventory (CTDI) to assess pupils' disposition towards critical thinking.

4) To design a short questionnaire to obtain pupils' background information.

6.5 Phase Two: Standardization of Test Instruments.

This phase is mainly involved in the standardization of the two instruments. The objectives of this phase were:

1) To determine the critical reading ability of Singaporean Malay pupils in Secondary One through Five as measured by the Malay Language Critical Reading Test .

2) To explore the construct validity of the various subskills and items of critical reading ability as measured by the Malay Language Critical Reading Test.

3) To determine the critical thinking disposition of Singaporean Malay pupils in Secondary One through Five as measured by the Critical Reading Disposition Inventory (CTDI).

4) To explore the construct validity of the Critical Reading Disposition Inventory (CTDI).

The standardization process will utilize a representative sample of Singaporean pupils taking Malay as a second language in Singapore. The sampling design is described below.

6.5.1 Sampling Design for Standardizing the MLCRT and the CTDI

The sampling design adopted for the study is the multi-stage stratified random sampling. During the first stage of sampling schools were selected based on their geographical districts and the concentration of the Malay population in the particular district. Thus all four geographical districts of Singapore schools encompassing the East, West, North and South zones was represented in the study, but the actual number of schools per zone was proportionate to the density of Malay school population in the specific area, with the zones having denser population being proportionately represented.

The next level of sampling was at the class level in each school - in each of the selected schools a selection of Malay pupils in each of the five levels from Secondary One through Secondary Five from both the Express and Normal stream[1], were chosen for the study. In practice the sample were pupils attending the *Malay language classes* which form a cluster of pupils who normally come from several classes of the same level and stream. Although the number of Malay pupils in these classes varies, in every school at least one Sec 1 through Sec 5 Express and Normal Malay class pupils were included in the study.

The aim of this type of sampling procedure in the case of the present study was to obtain a fairly representative sample of Malay pupils. In this procedure the 'homegeneity within strata" will be achieved through groups of pupils of similar grade level, age and stream studying in the same class; the "heterogeneity between strata" will be achieved through the different grade levels of Sec. 1 through Sec 5, as well as by the different academic streams, namely, the Express and Normal stream.

6.5.2 Pilot Testing and Trial-run Study

A small pilot study and a trial-run study for validation and item analysis of both the MLCRT, and CTDI was carried out before the actual test administration. Only about two classes of pupils from each level other than those included in the main study were chosen for the trial-run testing. During item analysis unreliable and unsuitable items were rejected, adapted or revised as was appropiate to the situation. The purpose was to improve on the reliability, facility or difficulty indices of the tests so that a refined set of tests could be obtained.

In addition the trial study wil provide a cross validation for the trial and actual MLCRT and the CTDI as different population ofsubjects taking the tests were used.

6.6   Phase 3: Constructing a Model of the Correlates of Critical Reading Ability

The construction of the model of the correlates of critical reading ability will be attempted after the standardization of the MLCRT and the CTDI. This final phase of the study was guided by the research objectives specified below:

1) To determine what relationship exists between critical thinking disposition as measured by the Critical thinking Disposition Inventory developed by the researcher and critical reading in the Malay language as measured by the MLCRT.

2) To determine what relationship exists between <u>general reading comprehesion ability</u> as measured by the Malay language Reading Comprehension Test developed by Supki Sidek (1985), and critical reading in Malay Language as measured by the MLCRT.

3) To determine what relationship exists between <u>pupils' personal educational and socio-economic variables</u> such as grade level, gender, school stream, school achievement, bilingual language background, parents' income and type of housing and critical thinking ability of Singaporean Malay pupils as measured by the MLCRT.

4) To construct a model of the correlates of critical reading ability of Singaporean Malay pupils at secondary level based on the above variables.

The above research questions neccesitate 10 working hypotheses which will determine the nature of the model-building process. The hypotheses are listed below:

1. Singaporean Malay pupils at Secondary One through Secondary Five will exhibit a range of critical reading abilities with respect to the skills measured.

2. Significant difference exists between the ability to read critically as measured by the MLCRT and <u>critical thinking disposition</u> as measured by the CTDI.

3. Significant difference exists between the ability to read critically and <u>general reading comprehension</u> ability as measured by the Malay Language Reading Comprehension Test developed by Supki Sidek.

4. Significant difference exists between <u>grade levels</u> and Malay Singaporean pupils' ability to read critically as measured by the MLCRT.

5. ·Significant difference exists between <u>general academic ability</u> as measured by performances in Primary School Leaving Examination (PSLE) and pupils' ability to read critically as measured by the MLCRT.

6 Significant difference exists between <u>gender</u> and Malay Singaporean pupils' ability to read critically as measured by the MLCRT.

7. Significant difference exist between <u>school academic stream</u>, that is Normal and Express stream and Malay Singaporean pupils' ability to read critically as measured by the MLCRT.

8. Significant difference exists between <u>socio-economic status</u> as measured by socio-economic indicators such as parents' income , parents' education and type of housing and Malay Singaporean pupils' ability to read critically as measured by the MLCRT.

9. Significant difference exists between <u>Malay language competency</u> and Malay Singaporean pupils' ability to read critically as measured by the MLCRT.

10. Significant difference exists between <u>bilingual language background</u> and Malay Singaporeean pupils' ability to read critically as measured by the MLCRT.

A summary of the variables and their measurement is listed in Table 6.1.

<u>TABLE 6.1</u>
<u>Variables and their Measurement</u>

VARIABLES	MEASURED BY
Critical Reading Ability	MLCRT
Critical Thinking Disposition	CTDI
General Reading Comprehension	Reading Comprehension Test (Supki Sidek)
General Ability	Primary School Leaving (PSLE)
Malay Language Competency	Primary School Leaving (PSLE)
Bilingual Background	Questionnaire
Socio-economic status	Questionnaire
Grade Level	Questionnaire
Sex	Questionnaire
Age	Questionnaire
Academic Stream	Questionnaire

6.6.1 Conceptual Model of the Correlates of Critical Reading Ability

The construction of a *model of the correlates of critical reading ability* which is different from the internal *model of the construct of critical reading-thinking*, it is necessary to explain the context of the sample population, its structure and its unique characteristics. This means that the variables selected for the model are specific and relevant only to the population concerned, that is the Malay pupils in Singapore.

Critical reading ability is envisaged as a multi-skill construct which is affected by many learner variables. In the conceptual framework of the postulated model of critical reading ability, the learner variables such as general ability, language competency, age, gender, socio-economic status, bilingual language background, grade level, academic stream including the subjects' reading comprehension ability and critical thinking disposition are hypothesized to exert differential effects on the ability to read critically which is the criterion variable. The diagramatic presentation of the theoretical model is shown in Figure 6.2.

In the model, all the variables were thought to have causal relationships with critical reading ability, whether directly or indirectly, through mediating variables. According to the postulated model of the correlates of critical reading ability adopted by the study, general reading comprehension, critical thinking disposition and general ability are conceptualized as having causal effects on the criterion variable, critical reading, as well as mediating between other independent variables such as sex, age, socio-economic status, bilingual language background, stream, and grade level and critical reading ability. These other independent variables thus should have direct as well as indirect effects on critical reading ability.

The rationale for the choice of the independent variables is as follows:

a) General ability

Through review of pertinent related literature such as the studies by Wolf et al (1968), Sochor (1958), Maney (1958), Follman and Lowe (1972) and others, it had been indicated that pupils' intelligence and general achievement do have significant correlationss with critical reading. As a local version of intelligence test is not yet easily available, and due to constraints in the conduct of research, the Primary School Leaving Examination (PSLE), a national examination which was taken by all pupils prior to entry into the secondary levels was utilized as an indicator of general ability of Singaporean pupils.

FIGURE 6.2

CONCEPTUAL FRAMEWORK AND THE POSTULATED MODEL
OF CRITICAL READING ABILITY

(————) direct effect
(- - - -) indirect effect

126
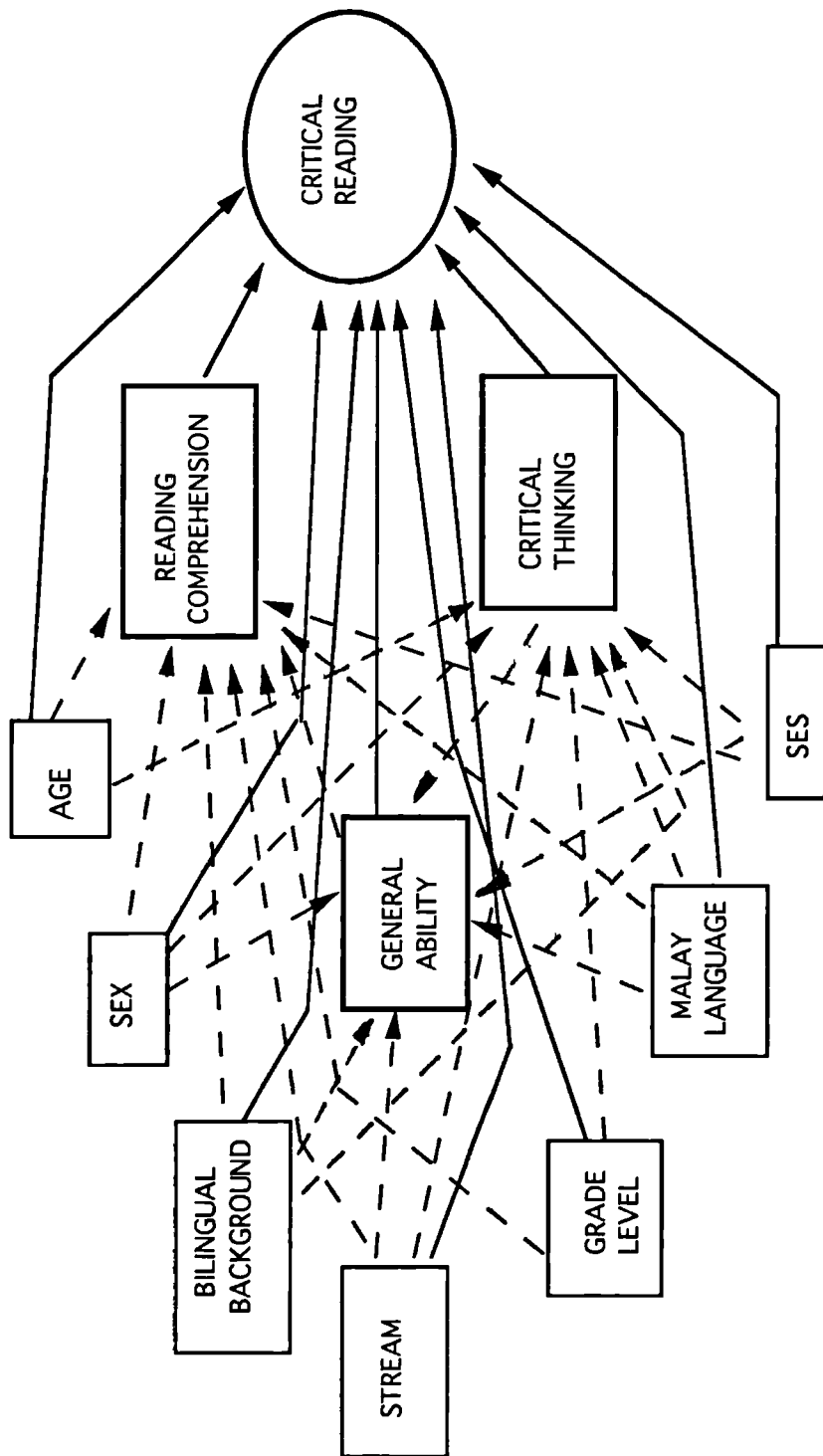
The total PSLE scores, a composite of the pupils' T-scores in English, mother tongue (Malay, Chinese or Tamil), Mathematics and Science was used as a basis for streaming into either the Special, Express or Normal Course in the Secondary schools.

b) Stream or Course

Research on the relationship between pupils' stream and critical reading ability had not been known to exist as streaming is part of the unique feature of the Singapore educational system (please refer to Chapter 2). It is generally accepted that the pupils' stream in schools whether at the primary or secondary level provides some measure of their academic ability. Bibi Jan, (1992) had reported the positive correlation on academic achievement of streaming in her studies on Singapore pupils. Therefore as it is an important feature of the Singapore school system, the effect of stream will be examined in order to obtain a fair reflection of the context of critical reading-thinking ability in Singapore.

c) General Reading Comprehension

The review of literature on critical reading had shown a consistently strong relationship existing between critical reading ability and reading comprehension whether of the literal or general type. The Supki Malay Language Reading Comprehension Test (SMLRCT) will be used as a measure of general comprehension ability of the pupils. It comprises two cloze passages and two reading passages with multiple-choice questions which were designed to measure the reading comprehension ability of secondary school pupils at Secondary level .

d) Grade level

Growth in critical reading ability of pupils from elementary to high school level had been indicated in the literature reviewed. The secondary schools in Singapore were structured into four levels for the Express stream and five levels for the Normal stream pupils. The relationship between grade levels, that is Secondary one through four for the Express stream and Secondary

one through Five for the Normal stream, on critical reading ability will be an interesting variable to be examined.

e) <u>Age</u>

Pupils' age may have a significant relationship with reading critically by older pupils being more proficient than their younger peers. This study also attempts to examine the age variable, and find out how it is related to critical reading. Age and grade level is not synonymous in Singapore; pupils' age in a particular Secondary class can range within three years or more firstly as a result of the course or stream the students come from when they were at primary level (six, seven or eight years course), and secondly, due to the number of times they attempted the PSLE before being eligible to enter secondary school.

f) <u>Gender</u>

The relationship between critical reading ability and the pupils' gender is unclear. Some of the studies on critical reading reported that girls did better in critical reading than boys, but many others reported insignificant correlation between the two. This issue is particularly relevant for Singapore Malays as Malay girls here were claimed to be doing academically better than their male counterparts especially at the post secondary levels, whereas the disparity is not so marked among the other communities. It will be interesting to find out if Malay girls also read and think more critically than the boys.

g) <u>Malay Language Competence</u>

Implicit in critical reading ability is the language competence of the reader. The relationship between the language competency factor and critical reading ability will show the differential effect of the language factor on reading comprehension and critical reading. The PSLE grades in Malay language will be used as indicators of language competency.

h) <u>Bilingual Language background.</u>

The issue of the effects of the English language background of the pupils on achievement in schools was a subject of much interest in Singapore. It had been reported that pupils from favourable

English language environment performed significantly better than pupils coming from more dialect-speaking background. The Malay pupils' under-achievement in schools has often been attributed to their little exposure to English at home as English is used for school instruction. Bilingual background in this study effectively means the amount of English used in the home, with the more amount English representing the more bilingual homes.

i) Socio-economic Status

There are very few studies which attempt to examine the relationship between pupils' socio-economic standing and critical reading or thinking. The relationship between general reading competency and socio-economic background indicates a favourable relationship for those in the higher socio-economic bracket. In the present study, a composite of three variables indicative of socio-economic status of the family were used. The first one is the parents' educational level, the second one is the parent's income which is also related to parent's educational level, and finally, the type of housing the pupils live in, a uniquely Singaporean characteristic[2] which might indicate social status.

6.6.2 The Sample

The target population for the main study is defined as Malay secondary school pupils in Singapore Schools, excluding those in special schools and those undertaking their schooling in religious institutions. Therefore a representative sample of pupils from Sec 1 through Sec 5, that is between the ages of 12 to 19 from the Normal, Express stream, were chosen as subjects of the study.

6.7. Data Analysis

The data collected for the study were analysed using the SPSSX Statistical Package. The reliability of subskills of MLCRT and the CTDI items was determined and factor analysis was employed to determine their latent factors. Correlation and regression analysis were used to analyze the relationships between critical reading ability with the selected learner variables. The t-test and ANOVA were employed to test significant differences between pupils'

critical reading ability and all the variables under study, as listed under the research questions.

An exploratory model of critical reading ability of Malay Secondary pupils in Malay language was constructed based on the path coefficients of each significant variable on the dependent variable which is critical reading. Appropriate statistical controls were employed to try to distinguish the influence of each significant variable in the model towards critical read ng ability. At the end of the analysis a discussion of the findings, the implications and conclusions will be presented. This will also include recommendations for further lines of investigation.

6.8. Limitations of the Study

As this is a study on the critical reading and thinking ability of Malay pupils in Singapore, the findings of the study could not be generalisable to the whole student populations in Singapore, or to the Malay pupils in Malaysia, Indonesia and Brunei where there is also a sizeable population of Malay pupils sharing the same historical, cultural and linguistic traditions.

Footnotes:

(1) Express stream is for the better pupils who take four-year course of study before attempting the GCE 'O' level exam, whereas the Normal Stream pupils take 5 years before attempting the same exam , that is if they passed the Normal Stream exam at the end of the four years at secondary school.

(2) In Singapore more than 85% of the population live in Housing Development Board's (HDB) flats, with the other 15% living in private apartments or houses unaffordable to the average Singaporean. Strict laws and regulations mostly based on affordability and to a lesser extent for social engineering, have been implemented in the sale, resale and rent of HDB flats. For instance only families within a certain income bracket were eligible to buy a certain type of flats whether one-room, two-room to five-room flats, thus creating a neat strata of the population easily identifiable based on the number of rooms their house. consists of. It is not uncommon for people's social status to be classified according to the number of rooms (including living room) they have in their flats.

CHAPTER 7
TEST CONSTRUCTION AND DEVELOPMENT

7.1 Introduction

This chapter will attempt to describe the construction of the Malay Language Critical Reading Test and the Critical Thinking Disposition Inventory. Critical reading ability in this study is defined as critical thinking applied during the reading process. Hence it is a subset of, but not entirely synonymous with, critical thinking which encompasses a larger sphere of human behaviour and thinking in general.

According to the model described in the last chapter, ten critical reading subskills were identified, encompassed within two core dimensions, namely the logic- oriented and the core critical reading dimension ones. The ten subskills of critical reading ability which are believed to adequately cover the major dimensions and skills employed during critical reading acts. No hierarchical implication is claimed in the sequencing of the subskills. These subskills were written into the test specification and formed the basis for the test construction.

Under the logic-oriented dimension, four subskills are specified. They are:
- the ability to evaluate deductive inferences
- the ability to evaluate inductive inferences
- the ability to evaluate the soundness of generalizations,
- the ability to recognize hidden assumptions.

Under the core critical reading dimension the following skills are specified:
- the ability to identify bias in statements,
- the ability to recognize author's motive,
- the ability to identify fact or opinion,
- the ability to identify relevant and irrelevant materials,
- the ability to recognise similarities and differences,
- the ability to evaluate strength of arguments.

7.2 Subskills of Critical Reading Ability

Description of the subskills underpinning the ability to read critically follows.

7.2.1 Subskill 1: The Ability to Reason Deductively

In deductive reasoning one is required to arrive at a logical conclusion from a known principle or from a premise. The conclusions must necessarily follow from the premises. The inference is conclusive in and of itself without reference to any information except that given in the reasons. The reasoning is valid if the conclusion necessarily follows the premises but invalid otherwise. This ability is a necessary one to be acquired by the reader.

7.2.2 Subskill 2: The Ability to Evaluate Inductive Inferences

To make an inductive inference requires one to move from the particular to the general. To reason inductively one has to infer from the premises or information given before arriving at a conclusion. Therefore an element of probability is always present There is no absolute truth or validity, in inductive reasoning, only the question of appropiateness or soundness of the inferences is required. The degree of probability of the inferences to be true depends on the truth and the strength of the available information.

7.2.3. Subskill 3: The Ability to Evaluate Generalizations

This is the same as inductive reasoning but in making generalizations, one infers beyond the immediate information in that a generalization from the particular situation to a wider situation is claimed. These generalizations could either be legitimate or illegitimate, valid or invalid depending on the strength of information that could be extracted from the information. A critical reader must be able to make sound generalization based upon realistic evidence or fact.

7.2.4 The Ability to Recognize Hidden Assumptions.

Some ideas are embedded or hidden in statements and remain unnoticed unless an effort is made in detection. The unstated ideas on which another idea is built are called assumptions or taken for granted. Some of these assumptions are legitimate and explicit while some are false and camouglaged. The challenge is to extricate and recognize the hidden assumptions before making evaluation and further commitment or judgement. Unlike biased statements where actual words or expressions are used, in hidden assumptions, the underlying idea are always not made explicit.

7.2.5 Subskill 5: The Ability to Recognize Bias.

Words and expressions can be used to influence one's thinking. Often words are used implicitly to denote unfair reflection on someone or something instead of being neutral. A biased or slanted word and ideas are often used in propaganda and advertisements. The detection of bias is certainly the task of a critical person. The critical reader has to be aware of the techniques used in camouflaging biases, such as exaggeration, name-calling, character assassination and others. prior to making a judgement.

7.2.6 Subskill 6: The Ability To Recognize Author's Motive.

There is a purpose, a motive for writing, whether made implicit or explicit, in the choice of words and the style of writing. The reader must be able to recognize the author's purpose for writing, how he accomplish his purpose through h s style, his expression, his mood. Interaction between the reader and the author calls for the reader being aware of the author's intention before making a judgement on the authenticity and veracity of the piece of writing could be formulated.

7.2.7 Subskill 7: The Ability to Differentiate Between Facts and Opinions.

A fact is an account, a quality or relation which is manifest in experience or may be inferred with certainty. It can be proven to be true. An opinion is one which could be either true or false, it is only a view or judgement or appraisal formed in the mind about a particular matter; a person can hold to the opinion regardless of the

truth or falsity of it. To be critical one has to know the different factual values and opinions, he must be able to differentiate between subjective and objective statements, mere hypothesis and a proven fact. A reader has to be aware of certain propaganda techniques that try to present subjective interpretation as factual information

7.2.8 Subskill 8: The Ability to Evaluate Uses and Sources of Material.

This involves the ability to assess the completeness, relevancy and reliability of the textual sources based on the style of writing, the language used, the moods, the overall information presented before deciding on its suitability, completeness, relevancy and reliability for certain purposes. In this type of evaluation the global characteristics of the passage may be more prominently accessed before any judgement is made. The reader must decide if the particular statements concur with or deviate from the established knowledge or facts, whether the sources are adequate or complete, whether the story is true or make believe based on his prior knowledge.

7.2.9 Subskill 9: The Ability to Recognize Similarities and Differences.

To recognize global general features and particularistic and specific features is a prerequisite to making a comparison. In critical evaluation one has to recognize the similarities and differences between at least two elements before arriving at a decision. The critical reader has to be skillful in differentiating the similar and equal, the parallel, and the different characteristics and elements.

7.2.10 Subskill 10: The Ability to Evaluate the Strength of Argument

The reader must be able to make summary evaluation by assessing the truth, falsity, logicality, relevance, and strength of arguments presented based on certain criteria before deciding or making judgements. Good critical thinking requires good judgments based on criteria. This ability involves the utilization of many skills, comparing, analysing, synthesizing of the various competing information in terms of an established or agreed criteria.

The above ten skills form the basis for the construction of the MLCRT. Following this, a description of the construction, content and format of the test will be described.

7.3 Criteria for the Construction of the Malay Language Critical Reading Test (MLCRT)

The Malay Language Critical Reading Test (MLCRT) is intended to measure the critical reading ability of Singaporean pupils in Malay language. The test is targeted to be used at the secondary level, from Sec1 to Sec 5, and to be administered on a group or class bas s. The above model of critical reading ability formed the basis of the design of the test. Accordingly the 10 skills subsumed under two dimensions formed the basis of the test.specification.

The following criteria were utilized as the basis for test construction:

1. The readability of the passage.

    The statements and passages used in the test were carefu ly chosen so as to suit the readability level of the pupils.

2. The length of the test

    The length of the test should be long enough so that a wider span of dimensions and skills could be tested. The larger the number of items the more reliable will be the test. Therefore 100 items were constructed to elicit the ten subskills. The time given for the test was one hour fifteen minutes.

3. The length and number of the passages.

    Many short passages were used instead of a few long ones. This is to ensure a more widespread content and context. In this way the effect of familiarity with specific content area used in the test will be minimal.

4. The number of test items per subskill area.

    The number of test items per subskill was not constant, but at least four items per subskill were constructed so that a fairly large item pool was available for analysis.

5. Sequencing of Subskills and Items

    As far as possible subskills based on shorter passages are placed towards the beginning part of the test to motivate testees to continue doing the longer passages. Most items were sequenced under their respective subskills and the relevant

passages unless the kind of task requires the item to be drawn from a number of passages.

6. <u>Test format</u>

A multiple-choice format was chosen for the test questions. This format was selected because of ease of computation and marking of the answers of a large number of testees. Furthermore elements of subjectivity in the rating of critical reading ability could be more easily controlled than if, for example, the short answer or the essay format is used. All the passages and statements were 'boxed' for easy reading as well as to differentiate between the questions and statements to be evaluated.

7. <u>Answer format</u>

A separate sheet was designed for the answers to be written. In future optical markers could be used instead of the answer sheet to facilitate marking and keying in the answers into computers.

8. <u>Distractors</u>

There should be only *one* correct answer to an item; however if more than one answer is plausible, the *best* among the plausible answers would be chosen based on the indications in the directions of the questions. In most cases, a four-option answer format was designed in order to control for consistency of the test diff culty at least in the number of distractors. Therefore most of the items made use of the 4 alternatives or distractors, but where it was not feasible, 3 alternatives were given so that bias due to test format could be reduced. Only two subskills utilized the three-alternative format - the ability to evaluate inductive and deductive inferences.

9. <u>The test directions</u>

A test direction were be provided and as far as possible a concise and clear directions were given to the respondents. A special briefing regarding the overall administration and objective of the test were also given.

10. <u>The sample items</u>

Sample items and the correct key for every subskill area will be included in the format. This is to ensure sufficient understanding of the requirement of the task to be performed.

The following item pools were created based on the ten subskills identified in the hypothetical model. The following section presents examples of the items used under the ten subskills. A full draft of the trial-MLCRT is presented in Appendix 10, the translation is available in Appendix 11, while the sample answer sheet and the keyed-in answer in Appendix 12 and 13 respectively.

7.4   Sample Items of the Trial-MLCRT

The trial MLCRT consists of 100 items designed under ten subskills listed below.

7.4.1   Subskill 1: The   Ability to Reason Deductively

In deductive reasoning, one is required to arrive at a logical conclusion from observations, a known principle or from a premise. The inference is conclusive in and of itself without appeal to any information except that given in the reasons. The reasoning is valid if the conclusion necessarily follows the premises, but invalid otherwise. An example of this type of item is:

Q3. *All the children who live at house number 7 are members of Pak Abu's family. Bedah lives in that house.*
   A.   *It is certain that Bedah is not a member of Pak Abu's family..*
   B.   *It is certain that Bedah is a member of Pak Abu's family..*
   C.   *Probably Bedah is a member of Pak Abu's family..*
   D.   *Probably Bedah is not a member of Pak Abu's family..*

Q5. *Many ten-year old children have already studied the Quran. Aminah is ten years old.*
   A.   *Probably Aminah has not studied the Quran.*
   B.   *It is certain that Aminah has not studied the Quran.*
   C.   *Probably Aminah has studied the Quran.*
   D.   *It is certain that Aminah has studied the Quran.*

In some items the negative form and double negatives were used. Examples are Item 17. and 18.

If Mak Limah gets an injection from the doctor, she will recover from her illness. She later recovered.

Q17.   Mak Limah must have obtained an injection from the doctor.

A. True   B. False   C. Cannot be determined
Si Labi will be rich if he digs the mountain. He did not become rich.

Q18.   Si Labi must not have digged the mountain.

A. True   B. False   C. Cannot be determined

7.4.2   Subskill 2. The Ability to Evaluate Inductive Inferences

This involves the ability to reach a sound interpretation based on observations and information in the text but pupils must not only interpret the fact but have to look beyond the facts and what they imply before making an inference. Therefore in the tests constructed, conclusions for statements are given and the testees are required to assess the soundness of the inferences, whether they are logical, and valid, based on the information given.

Sixteen items were constructed to measure this skill. They were items 13 , 14, 15, 16 , 19, 20, 21, 22, 26, 29, 36 , 37, 40, 42, item 43, and 48. Examples are:

The passage.
The class teacher of Primary 4A kept record of pupils who did not bring books in April. Five pupils did not bring their composition books and ten pupils did not bring their reading books.
Q15.   Pupils do not bring composition books more often in April than in other months.
A. Probably true   B. Probably false   C.   Cannot be determined

Q16. The two thirds of the pupils who did not bring books consist of those who did not bring their reading books.
A. Probably true   B. Probably false   C.   Cannot be determined

The following examples are based on longer passages.   The directions given were:
Please answer the questions following the short passages. You are required to judge the interpretains given in a critical way.

Refer to Passage 1
Q19. Ahmad is a careless boy.
A. Probably true   B. Probably false   C.   Cannot be determined

Q20.   Ahmad and Kassim are close friends.
A.   Probably true   B.   Probably false   C.   Cannot be determined

Q21.   Kassim lives in the dilapidated hut.
A.   Probably true   B.   Probably false   C.   Cannot be determined

Q22.   That bicycle has been put in a hurried way.
A.   Probably true   B.   Probably fase   C.   Cannot be determined

7.4.3   Subskill 3:   The Ability to Evaluate Generalizations

This is the same as inductive reasoning where one has to make inferences, but it goes beyond the available information in that a generalization from the particular situation to a wider situation is warranted. Pupils have to evaluate whether there is sufficient evidence for the generalization to be made, whether it is plausible, appropiate or otherwise. Altogether 12 items were constructed to test the ability to generalize.   Examples of items   constructed to assess this skill are:

Refer to Passage 4 in the Appendix 11.

Q42.   If the girls had not asked, the boys would not have helped .
A.   True   B.   False   C.   Cannot be determined

Q45.   All the students of religious schools are kind-hearted.
A.True   B.   False   C. Cannot be determined

7.4.4   The Ability to Recognize Hidden Assumptions.

It is the task of a critical reader to understand and infer ideas, reasons, which are sometimes unstated or concealed . The unstated ideas or reasons on which another idea is built called assumptions or taken for granted must be recognized before any further communication is to be made

In the questions given, a sentence is given and the testees are required to identify the hidden assumptions or idea behind the sentence.

Five items to elicit the above abiity are constructed, that is, Item 64, 65, 66, 67 and 68.   Examples are:

Q64. Faridah is a clever girl as she does not challenge the words of her teachers

*The **hidden** assumption behind the sentence is ....*

A. *Faridah becomes clever when she follows the commands of her teachers.*
B. *All pupils who are clever do not challenge their teachers.*
C. *Only those who are stupid will challenge their teachers.*
D. *Most of the pupils who are clever will not challenge their teachers.*

Q68 Mr. Marzuki, a lawyer of high moral character.would not have committed the burglary.

*The **hidden** assumption behind the sentence is:*
A. *Mr. Marzuki had never commited a crime such as burglary.*
B. *There is no evidence to show that Mr Marzuki had committed the crime.*
C. *A lawyer is a good person and as such will not commit a crime such as burglary.*
D. *Mr. Marzuki is not a man of high principle if he committed the burglary.*

7.4.5 The Ability to Recognize Bias

The author's use of words and style does influence one's thinking. The use of strong words, exaggeration, character assassination represents all forms of bias. Bias is not only present in propaganda, advertisements but could also be displayed in factual information through the giving of seemingly true information but is actually false, through the suppression of important and relevant information and through the omission of certain basic facts. The use of perjorative language, unfair and inconsistent treatment of words should be recognised.

Ten items were constructed to elicit the ability to recognize bias in statements. They are items 23, 55, 56, 57, 58, 59, 60, 61, 62 and 63. Some of the examples are:

Q61.A. *A wise person will not be wasting his time at the shopping centres.*
B. *The shopping centres have been the centre of free-mixing among young males and females.*
C. *The youths like shopping at the big stores which offer the most modern up-to-date fashionable clothes.*

D. *The fast-food restaurants such as Mac Donald had become the centre of attraction to these youths..*

The biased sentence is ....

Q63 *A.* *An armed robbery had been commited by three young males who sported long hair.*
B. *They had injured the owner of the shop and killed his wife who evidently had screamed.*
C. *Cash of about twenty-thousand dollars and all jewelery had been taken away.*
D. *Everyone is reminded to beware of young males who sported long hair.*

. *The biased sentence is ....*

Another type of items requires students to identify words which are biased and unbiased. Examples are:

Question 58 (Identification of unbiased word)

Out-dated parents hate the popular programme - Super Mat because their children love to copy the exaggerated actions of Super Mat.
Circle the words that is fair and not exaggerated.
A. *out-dated*   *B.* *actions*
C. *popular*   *D.* *exaggerated*

(In the above item, the actual Malay word used to denote the concept of 'exaggerated' is 'berlebihan' or 'ditambah-tambah' which can also mean 'over-doing' and 'to add'). The correct key in English for these items which are 'language specific', may be different for Malay and for English.

7.4.6 The Ability to Differentiate Between Fact and Opinion

A fact is an account, quality or relation which is manifest in experience or may be inferred with certainty. It can be proven to be true by checking with reliable sources or authority. An opinion is a view or judgment or appraisal formed in the mind about a particular matter; it is not necessarily right or wrong, true or false to everyone else. It is important for an individual to be conscious and to be able to distinguish between statement of facts and opinions as a starting point before further verification could be made.

To be critical one has to know the different factual values and opinions, he must be able to differentiate between subjective and

objective statements, mere hypothesis and a proven fact. A reader has to be aware of certain propaganda techniques that try to present subjective interpretation as factual information

The items constructed require pupils to identify which sentence or statement is an opinion and which one is a fact. Other types of items are those that require pupils to identify whether a given sentence is a true fact, a false fact, an opinion or a superstition.

Ten items were constructed to measure the above skill: items 32 69 70, 71 72, 73, 74,75, 76 and 77.

Examples:

Q69. The sentence which shows an opinion, is:
A. New York is the biggest and most beautiful city in America.
B. New York is known as the city of sky-scrapers.
C. During the night bright colourful lights lighten up the dark night.
D. New York is also known for its high crime rate.

Q70. The sentence which shows an opinion is:
A. Many of the relatives visited Aman's grandmother in the hospital.
B. Aman's grandmother suffered from cancer of the intestine.
C. The condition of Aman's grandmother seems very critical.
D. The specialist surgeon had already performed the operation.

Q72. The sentence that shows a factual information is:
A. The toothpaste Sparkling White really brightens your life.
B. It is made of fresh ingredients of very high quality.
C. It is recommended by well-known dental specialists.
D. The tooth-paste will be on the market next month.

Another set of item requires the testees to state whether the sentences given are an opinion, a true fact, a false fact or a superstition.

Q73   A maiden who likes to sing in the kitchen will marry an old man.

A. an opinion   *B. true*
C. false   *D. a superstition*

Q75.   Kuala Lumpur is the capital of Malaysia, while Jakarta is the capital of Indonesia.

A. an opinion   *B. true*
C. false   *D. a superstition*

Q76. The countries of South-east Asia have four seasons.
A. an opinion   B. true
<u>C</u>. an untrue fact   D. a superstition

7.4.7 The Ability to Recognize Author's Motive

The author's style of writing and the words he uses will determine the mood of the writing. The readers react not only to the facts as presented but also to the author's style in order to gauge his motive which is sometimes not made explicit. Interaction between the reader and the author calls for the reader to be aware of the author's intention before a judgment on the authenticity and veracity of the piece of writing could be formulated.

In the items constructed the testees to assess the author's message or his motive.

The items are items 31, 38, 47, 53, 80, 85, 86, 91 and 92.

Two passages and examples are listed below. Pupils have to synthesize the whole passage, analyse the various possible answers and come up with the most plausible one The following are examples of the items.

<u>Refer to Passage 2 in Appendix 11.</u>

31. What did the author wish to show?
   A. How conscientious Nora is in her studies.
   B. Learning bit by bit will make one clever.
   C. Listening to your mother will give good return.
   <u>D</u>. Don't wait till the last moment before studying.

Another example,

First Story

In the olden days people used the bullock-cart to move from one place to another. Even though it is not fast moving, the passengers were able to relax and did not have to walk a long way. At the same time they could transport heavy goods such as coconuts and fruits to far-away places. These people in the olden days love to travel by bullock-carts.

Second Story

Presently, the mass rapid trains is a neccessity in order for one to travel towards the compact city-centre Thousands of people get into the trains as fast as they can and then alight at their destinations in the same brisk manner. Without this mass-rapid transport, employees in the city will be late for work.

85. What is the **motive** of the author of the **first** story?
 A. to show the importance of bullock-carts of the olden days.
 B. to show the difficulties faced by people in the olden days.
 C. to show how people in the olden days travel from one place to another.
 D. to show how people in the olden days transport padi and fruits.

86. What is the **motive** of the author of the **second** story?
 A. to show the fast speed of the mass-rapid trains.
 B. to show the attitude of the present-day passengers.
 C. to show the comport experienced by the passengers of mass-rapid trains
 D. to show the indispensibility of mass rapid trains.

7.4.8 The Ability to Identify Sources and Uses of Material.
The testees are required to assess the style of writing, the language used, the moods, the overall information presented, the completeness and relevancy of the passage before deciding whether the material is suitable for a certain purpose. The reader also has to possess the schema of different types of writing and assess the global characteristics of the passage before he can identify the type of sources where it is taken from.

This involves the ability to assess the completeness, relevancy and reliability of the textual sources based on the style of writing, the language used, the moods, the overall information presented before deciding on its suitability, completeness, relevancy and reliability for certain specified purposes. In this type of evaluation the global characteristics of the passage must be understood before any judgemnt is made. The reader must decide if the particular statements concurs with or deviates from the established knowledge or facts, whether the sources are adequate or complete, whether the story is true or make believe, based on his prior knowledge.

The items constructed to elicit these skills are items 24, 30, 39, 46, 54, 81, 87, 88, 93, 94 and 95.

An example is presented below:

First story

Once upon a time it was easy to find   sea turtles swimming in the sea. , but now many of the sea turtles have been killed for their meat, their eggs, their skin and their oil, such that only very few sea turtles are left.   Even though there are laws to protect the seaturtles, in some places many had been hunted and caught in the nets of fisherman.   At present, many of the turtle-protectors expend their efforts to save the turtles, to protect their eggs, their breeding grounds and the beaches where they used to relax. Without their effort these sea turtles will be extinct forever.

Second Story

In the old days there was a big turtle who liked to spend his time swimming in the Pacific Ocean.   Slowly, he would munch the sea-plants and the small fish that lived in the surrounding water, sometimes he would chew the prawns that used to play behind the rocks that acted as a boundary between the beaches and the deep sea.   That turtle lived in the sea, but sometimes he swam to the surface of the water to breathe in the fresh air and to feel the heat of the sun on his skin.   He watched the sky during the day and the moon during the night, he also watched the birds flying across the ocean.   Sometimes he felt bored and tired of swimming.   Oh! how he wished he could relax   in the island at the centre of the ocean.

Q95.Which story will you refer to if you are asked to write a scientific report about the turtle.

A.   The first story only   B.   the second story only

C.   The first and second story   D.   none of the above.

7.4.9   The Ability to Recognize Similarities and Differences.

The reader is required to compare and contrast at least two passages or paragraphs. To recognize global or general features and specific features is a prerequisite to making a comparison.   In critical evaluation one has to recognize the similarities and differences of at least two elements before arriving at a decision. The critical reader has to be skilful in differentiating the similar and equal, the parallel, and the different characteristics and elements.   The items constructed require the testees to identify the similarities between two main ideas from two passages.   They are

also required to compare the two passages and the differences as to the contextual and ideational features.

The items representing this skill are: items 78, 79, 83, 84, 89 and 90.

For example ; from the passage about the bullock-carts and the mass rapid trains the questions that follow are:

Q83. What are the **similarities** between the two stories?

    A. Both tells about the importance of land transport.

    B. Both tells about the travel time of land transport.

    C. Both tells about the passengers of land transport.

    D. Both tells about how people travel from place to place.

Q84. What are the **differences** between the two stories?

    A. One tells about the things that are transported, and the other tells about people who do not carry any luggage.

    B. One tells about the bullock-cart and the other about the mass-rapid trains.

    C. One tells about people in the city and the other about people in the towns.

    D. One tells about the importance of time and the other about the little value placed on time.

7.4.10 The Ability to Evaluate the Strength of Argument

The reader must be able to assess the truth, falsity, logicality, relevance, and strength of arguments presented based on certain criteria before deciding or making judgements. This ability involves the utilization of many skills: comparing, analysing, synthesizing the various competing information in terms of an established or agreed criteria.

The items representing this skill are: items 96, 97, 98, 99 and 100. An example with the correct answer is attached for the students ' reference. The example given (Example 9) and the items and passages constructed are presented below.

Example 9

    Several trainee nurses in a hospital were discussing whether nurses should be allowed to have long finger-nails. Mary said,"during this era a woman who has short-finger-nails will be labelled as old-fashioned and did not follow changes of the times." Hamidah then interrupted, "the hospital has no right to determine the lengths of nurses' fingernails." Zola who is usually quiet, suddenly offered her opinion, "it is appropiate that nurses should have short finger-nails as long finger-nails will endanger the patients when we bathe or

bandage them." Immediately Kasmah added, *"yes, short finger-nails are easy to clean.*

Question:
  Whose argument is the **weakest**
  A. Mary's argument   B. Hamidah's argument
  C. Zola's argument   D. Kasmah's argument
The summary of subskills and the items constructed is presented in Table 7:1

Table 7.1
List of Subscales and Items of the Trial MLCRT

Critical Reading Skills Assessed	Item number
1. The ability to evaluate the validity of deductive inferences.	1, 2, 3, 4, 5, 17, 18
2. The ability to evaluate the soundness of inductive inferences.	6, 7, 8, 9, 10, 13, 14, 15, 16, 19, 20, 21, 22, 26, 29, 34, 36, 37, 40, 41, 42, 43, 48, 50
3. The ability to evaluate the soundness of generalizations	11, 12, 25, 27, 28, 33, 35 44, 45, 49, 51, 52
4. The ability to recognize hidden assumptions.	64, 65, 66, 67, 68
5. The ability to recognize bias.	23, 55, 56, 57, 58, 59, 60, 61, 62, 63,
6. The ability to differentiate between fact and opinion.	32, 69, 70, 71, 72, 73, 74, 75, 76, 77
7. The ability to recognize author's motive	31 38, 47, 53, 80, 85, 86 91, 92
8. The ability to identify sources and use of material	24, 30, 39, 46, 54, 81, 82, 87, 88, 93, 94, 95.
9. The ability recognize similarities and differences.	78, 79, 83, 84, 89, 90.
10. The ability to evaluate the strength of arguments.	96, 97, 98, 99, 100.

7.5 Construction of the Critical Thinking Disposition Inventory (CTDI)

The CTDI is a new instrument specifically developed for the study in order to test the viability of the critical reading/thinking model which should include both the affective as well as the ability factor. The theoretical foundation of the test is largely based on the same critical reading/thinking model used for the MLCRT, but here it is the disposition or inclination of the reader that is focussed, not the ability factor.   According to the definitions and literature on the critical thinker, critical reader is usually more disposed towards questioning the author's purpose, credibility, and motives, as well as questioning the authenticity and veracity of the material.   He or she will not accept whatever is written at face value, evaluates the consequeces and implications and effects of the text, and is not easily influenced by advertisements. The critical thinker is more disposed towards detecting biases and exaggerations and can differentiate between subjective and objective piece of opinions.   He or she are more likely to compare several sources in trying to get to the truth of the matter.   The above conceptions formed the basis of constructing the CTDI.

Therefore a self-appraisal method in the form of statements to reflect the critical tendencies of the reader towards being critical is utilized.   The areas upon which the items were structured include:

- disposition towards questioning statements made by the author
- disposition to question the authenticity, relevancy and completeness of the material
- disposition to question the motives in the piece of writing
- disposition to compare and contrast information
- disposition towards finding the cause and motives
- disposition towards getting the truth of the matter
- disposition towards reflecting on causes implications and consequences
- disposition towards detecting bias and exaggeration
- disposition to be wary of influential statements and advertisement

- disposition to evaluate contradictory arguments
- disposition to compare between factual and subjective information.

The above types or areas are not discrete in any way, and it is understood that some areas are overlapping, but all converging towards the same direction or meaning, that is, the disposition to be critical. Items or statements were constructed to reflect the nature or characteristics of the behaviours thought to be consistent with the attributes of a critical person. In all, forty items were created. The full draft of the inventory, in Malay, is presented in Appendix 14 while the translation is available in Appendix 15.

For every question a four-point Likert scale was used to assess the degree of agreement to the statements made. The scale refers to the frequency in which the statements are a true representation of the pupils' behaviour and was categorised as 'all the time', 'often' , 'seldom' or 'never' at all. Four points will be allocated for 'all the time' while only one point was allocated to 'never'. The points refer to the degree of frequency only but do not indicate that the distance between any two points is equal.

The same format was maintained for the whole test so as to provide consistency. As it is difficult to ascertain that the subjects who respond to the test will score the test with absolute honesty, the following precaution is made. Firstly, the subjects were given the guarantee that their responses would not be used against them. They were also informed that that there was no right or wrong answer and appeal was made for them to answer as honestly as possible. In addition, the absence of a 'neutral' or 'middle' scale in the four point Likert scale made it obligatory for the subjects to choose either 'often' or 'sometimes' , (the two middle scales); they could not therefore be neutral by scoring 'don't know' or a 'centre' scale. Furthermore uncompleted responses or responses where it seems that the subjects were just 'playing' (by giving a particular patterned response only), were thrown away.

Some negative items were also included mainly to counteract the tendency of some pupils to answer the questions according to a

systematic format instead of the 'true' state of affairs. The time allotted to complete the test is 30 minutes.

Examples of items constructed for the CTDI are as follows:

A. Items to elicit the d'sposition towards believing statements made by the author are designed thus:

1. *I believe what the author or speaker says is true.*
2. *I agree with the opinions of the author or speaker.*

B Items to elicit the disposition to question the authenticity, relevancy and completeness of or material, are created thus:

14. *I look whether the statement comes from believable authority.*
15. *I try to see whether the statements contradict one another.*
16. *I try to find out if what the author or speaker says is reliable.*
17. *I check whether the information given by the author or speaker is adequate.*

C. Items that tries to elicit the disposition to evaluate contradictory arguments.

18. *I can detect ambiguous or unclear statements.*
20. *I can detect an illog'cal reasoning whenever I hear or read.*
22. *I can detect misleading statements or writings.*
21. *I know the assumptions or hidden idea behind statements made.*

D. Examples of items to elicit pupils' disposition towards getting to the truth of the matter

7 *I question the author's or speaker's motive or intention for writing.*
8. *I think of the reason why the author or speaker said certain things.*

E. Examples of items to elicit pupils' disposition to compare and contrast information

4. *I compare what I read or hear with my own past experiences.*

9. *I compare the author's or speaker's view with other people's point of view.*

10. *I compare statements which I hear or read with other information.*

30. *I compare the conclusion of the story to my own conclusion.*

F. Examples of items to elicit pupils' disposition towards finding the central or main points or issue.

1. *I think of the main points that the author or speaker wish es to convey.*

6. *I know what are the relevant facts and what are irrelevant.*

24. *I focus on the meaning the author or speaker wishes to say.*

32. *I think of the main story-line or the main sequence of a story.*

37. *I can distinguish the main points and the details of what is written or said.*

G. Examples of items to elicit pupils' disposition towards detecting bias and exaggeration

34. *I can detect when the author or speaker is exaggerating something or somebody.*

35.. *I can detect when the author or speaker is biased against something or somebody.*

33. *I can detect when the author or speaker is using words to influence people.*

H. Examples of items to elicit pupils' disposition to be aware of influential statements or advertisements.

26. *I try to find out for whom the advertisement is written .*

27 *I try to assess what the advertisement says.*

I.. Examples of items to elicit pupils' disposition towards reflecting on causes implications and consequences

39. *I can determine which is the cause and which is the effect in anything spoken or writen.*

J. Examples of items to elicit pupils' disposition to differentiate between factual and subjective information.

> *23.* *I try to distinguish objective and subjective statements.*
> *31.* *I think whether a story is interesting or not.*

K. Examples of items to cull pupils' disposition to question and to reserve judgement.

> *5.* *I question why the author or speaker said certain things.*
> *6.* *I question whether what the author or speaker said is true.*
> *12 .* *I know what is a true fact and what is an opinion expressed by the author or speaker.*

7.6   Pilot Study

Both the MLCRT and the CTDI were initially piloted on two Malaysian boys aged 11 and 15 in London. The aim of this small testing session was confined to getting a rough idea as to the timing, readability and understanding of the test in general. It was found that the time allocated was sufficient and the directions were well understood by the subjects. A questionnaire to obtain information on the personal data of the subjects was also constructed and is available in Appendix 16.

7.7   Face and Content Validity of the Trial MLCRT and the CTDI

The face and content validity of the items of the trial CTDI were assessed in the following way. Firstly, the trial verison of MLCRT and the CTDI were given to Malay research students of the Institute of Education, London University, Malay language curriculum specialists of the Ministry of Education and lecturers from the National Institute of Education, Singapore. They were asked to read the contents of the tests and g ve their comments regarding the content and suitability of the test for secondary level pupils. After about a week, an informal meeting with them was arranged where their views regarding the test were elicited.

All of them were in agreement to the fact that the CTDI and the MLCRT seemed to measure critical thinking and reading ability respectively. The MLCRT is clearly a reading comprehension test even though questions on logic are included. It was also mentioned that the CTDI passed as an instrument which tries to gauge the pupils' attitude or disposition towards critical thinking. The language used in the directions and items were also thought to be suitable for the secondary level Malay pupils. No external bias and confounding language was detected in both instruments. Both tests were therefore utilized for the trial-run study, the result of which will be presented in Chapter 8.

For the MLCRT only, a second stage of determining its content validity was conducted. A group of Malay language experts, comprising full-time and part-time lecturers in the Malay Language Studies Unit of the Institute of Education, Singapore, the Malay language specialists at the Ministry of Education and Malay research students at the Nanyang Technological University, Singapore were asked to do the test . The result of their responses discussed under 'expert view' were taken into consideration in the revision of the final instrument.

CHAPTER 8
TRIAL-RUN STUDY

8.1.   Description of the Study

The objectives of the trial run were to validate and to establish the reliability of the two trial instruments of the study, namely, the Trial Malay Language Critical Reading Test (TMLCRT) and the Trial Critical Thinking Disposition Inventory (TCTDI).   Item analysis of both the TMLCRT and the TCTDI was also performed as a guide in deciding the eventual items to be used in the main study.

The two trial instruments, that is, the TMLCRT and the TCTDI which were designed for the trial run, were sent for face and content validation to research students at the Institute of Education, London University, Malay Studies lecturers at the National Institute of Education, Singapore, and Malay Language Curriculum specialists from the Ministry of Education, Singapore, for their opinions and comments.   The three specialists confirmed that the instruments had face and content validity in that both seemed to measure what they purport to measure. The items in the TMLCRT were said to test pupils' critical reading ability while the items in the TCTDI seemed to assess pupils' attitude or disposition towards critical thinking. All of them agreed that the standard of the language and the format and content of the tests are suitable for .secondary school pupils in Singapore. They also had the opinion that as far as the language and the contexts used in the passages were concerned, they were free of any extrinsic form of cultural bias.

The permission of two school principals was obtained for the trial-run study of the tests. One of the schools is situated on the eastern side of the island and one in the central area. About 80% of the Malay pupils and non-Malay pupils taking Malay as a 'Second Language' from both schools took part in the study.   One of the schools also had pre-university classes.   Tests were administered to 175 Secondary one to Secondary five pupils from the Express and the Normal streams, including Pre-university students in that school. In the other school only Secondary one to Secondary four pupils from the Express and Normal stream took part in the study. In all, 177 pupils from the Express and 208 pupils from the Normal stream from both schools took the trial tests.

Secondary 1 pupils formed the largest number of respondents by class or level while the PU1 pupils formed the smallest group. These PU1 pupils were included in the study as they were part of the school population, and they had also learned Malay as their second language in the school.   Although there was no Express or Normal

stream for the Pre University classes, these PU1 pupils were classified as Express stream as all of them had came from this stream when they were in secondary classes. As for the Sec 5 pupils, they were all from the Normal stream only; there being no Sec 5 Express stream in the school system in Singapore; the Express course pupils complete their secondary education at Sec 4 level only.

In all, only four 35 or 40 minute periods were utilized for the trial study: The TMLCRT was administered using the double periods, that is, one hour fifteen minutes, while the Questionnaire and the TCTDI took up one period each. The researcher with the help of Malay teachers in the schools administered the tests.

8.2 Presentation of the Results of the Trial-run Study

The results of the TMLCRT analysis will be presented first, then the TCTDI analysis will follow sequentially.

The results of the trialrun of TMLCRT will be presented in the following order: First, there is the presentation of the results of item analysis of the 10 tentative subskills of critical reading ability. Here, the frequency distribution, the facility and the discrimination indices of individual items including item-scale and item-subscale correlations were analysed. An examination of the appropriateness of the subskills in relation to the whole test was done through correlation analysis. The above empirical evidence will provide the basis upon which tentative decisions will be made on which subscales and which items were to remain and which ones were to be deleted for the actual study . Secondly, a general picture or trend of the 100-item Trial Critical Reading Test comprising the frequency distribution, its means and its reliability will be discussed.

The relationships between the main scale of the TMLCRT and its ten subskills, were also explored. This was also attempted mainly through correlation analysis .

8.3 Item Analysis of The Trial Malay Language Critical Reading Test (TMLCRT)

The 100-item TMLCRT was administered to 353 pupils from Secondary one of the Normal and Express stream to pre-university classes. About 45% of the subjects were from the Express stream and 55% from the Normal stream. The composition of the sample of this trial study is presented in Tables 8.1 and 8.2.

Table 8.1
Distribution of Trial-run Sample by Grade Level and Stream

Grade Level	Express	Normal
Sec 1	37.0%	63.0%
Sec 2	38.2%	61.8%
Sec 3	59.1%	40.9%
Sec 4	52.1%	44.9%
Sec 5	-	100%
PU 1	100%	-

Table 8 .2
Frequency Distribution of Trial-run Sample by Gender

Class	Girls	Boys
Sec 1	83	44
Sec 2	29	26
Sec 3	28	38
Sec 4	41	28
Sec 5	-	22
PreU 1	14	-
Total	177 (46.0%)	208 (54.0%)

The pupils in this phase of study answered the items within the time of one hour fifteen minutes. Pupils were directed to follow the written instructions given, that is, as far as possible, they were to answer all questions but if they were to find any one particular item difficult, they could proceed to the next question and return to it later. After the answer sheets were collected and computed, item analysis of every question was attempted.

The main objective of this analysis was to examine the relative effectiveness of the items in terms of the total scores. Items measuring the same construct should show consistency and thus correlate significantly with the main scale and its subscales. Deviant items which did not conform to the main scale would show either they were measuring something else or that other factors had intervened and thus camouflaging the true nature of the items. The consistency of the items in this phase was examined through biserial correlations of the items with the trial-MLCRT total scores.

The responses or the proportion of correct answers to the items were assessed through the facility indices. As the 100 items of the

test were designed within the specification of the subskills that it was hypothesized to represent, the item analysis of the individual items will be presented during the discussions of each subskill.

The trial TMLCRT comprised 10 subscales which represented 10 subskills identified to underpin the ability to read critically. The number of items in each subscale varies, but every subscale consisted of at least four questions. The item number and the respective subskills it underpinned was listed in Table 7.1.

The facility indices of all the items ranged from .95 to .03. A perusal of the difficulty of all the 100 items showed that most of the items were of moderate difficulty. Only 9 items were too easy (F.I. above .8) and 8 items were considered to be too difficult.

The discrimination indices of the items, indicates the power of each item to 'discriminate' between the upper (pass) and lower (fail) groups based on the total TMLCRT scores. The discrimination index of the items was calculated by using biserial correlation in which the number of correct responses of each item was correlated to the pass-fail groups based on the TMLCRT scores. Thus an item which had a positive correlation indicated that the proportion of correct responses of pupils in the upper group exceeded those from the lower group while a negative correlation indicated otherwise. Out of the 100 items of TMLCRT, only 2 items registered negative biserial correlation.

The consistency of the items within the respective subscales was analysed through product moment correlation, the higher the correlation, the more consistent the item is with its particular subscale.

In the preceeding section, every item will be analysed within the particular subskill that it was hypothesised to represent .

8.3.1 Distribution and Item Analysis of Subscale 1: "The Ability to Evaluate the Validity of Deductive Inferences"

Seven items were designed to measure this special subskill of critical reading ability, that is, the ability to recognize the validity of inferences or conclusions from simple arguments. The tasks involve evaluating simple logical arguments covering the concepts of 'all' 'some' and 'negative' statements. The distribution of this subskill is normal (skewness = -.303) with a standard error of .058.. The mean obtained by the whole sample is 4.43, with a standard deviation of 1.09. The median and the mode is at the score of 5,

while the maximum and minimum score obtained are 7 and 1 respectively. The result of the analysis of items under this subscale is shown in Table 8.3.

The percentage correct column represents the percentage of pupils getting the correct answers. The figures could be converted to mean response of the item by dividing the percentages by 100. For example 93.4%, converted to the mean value will register a mean of .934 for the item. Incidently the item mean in this case was also equivalent to the item facility index; as a '0' was coded for the wrong answer and a '1' for the correct answer. For example, the proportion of correct responses of Item 1 was 93%, its facility index which is also the mean was .93, showing that the item was very easy.

Table 8.3
Item Analysis of Subskill 1:
The Ability to Evaluate the Validity of Deductive Inferences.

Item No	Frequency Correct	Standard Deviation	Facility Indices	Biserial Corr.	Correlation to Subscale
1	331	.24	.95	.14	.28**
2	18	.22	.05	.06	.20**
3	312	.32	88	.07	.25**
4	18	.22	.05	.10	.16**
5	183	.50	.52	.28	.48**
17	236	.47	.67	.17	.55**
18	173	.50	.49	.27	.61**

** significant at .001 level

From the above table it could be seen that the facility indices of the items of this subscale ranged from .93 to .49 with items nearer to 0 being the difficult items and those nearer 1 as easy items. In this case the items seemed to be of moderate difficulty, except for Item 1 and Item 3 which were very easy. The discrimination indices of the items shows Item 2 to have low discriminating power, only .06 but its consistency to the subscale was acceptable at .20. Below is the example of Item 1, the easiest item.

<u>Item 1</u>
1. *All the oranges in that box are sweet. This orange is taken from that box.*
   A. *The orange from that box could be sour.*
   B. *The orange from that box must be sweet.*
   C. *There will be some oranges from that box which will not be sweet.*
   D. *Some of the oranges from that box are sweet.*

The above item was easy, but it was consistent with the total scale, r=.28, and discriminated wellthe upper and the lower group based on the TMLCRT total scores (D.I. = .34). Minor revision regarding the wording will therefore be made.

From Table 8.3 it could be seen that Item 2 and Item 4 had very low facility indices of .05 indicating that the two items were very difficult. Item 1 and Item 3 were relatively easy items to the pupils, while the other three items were of average difficulty. The standard deviation of these items ranged from .22 to not more than .50 which indicated that there was a spread of performance between pupils. Item 2 and 4 are shown below.

<u>Item 2</u>
2. *All girls like to play with dolls. Putih likes to play with dolls.*
   A. *Some girls does'nt like to play with dolls.*
   B. *Putih is certainly a girl.*
   C. *Putih is certainly not a girl.*
   <u>D</u>. *Putih may be a girl or a boy.*

The above item should be easy if not for the catch word 'Putih' which may either be a boy's or a girl's name. Pupils seemed to jump to the conclusion that Putih must be a girl as she likes to play with dolls. Actually the keyed answer was <u>D</u>, Putih may be a girl or boy. This item had an acceptable correlation with the total scale, although it had a low discriminating power. Discarding this item would have meant ignoring one important aspect of critical skill, deductive logic. Therefore this item will be retained.

<u>Item 4</u>
4. *If someone is not sick, he or she will not feel weak. That old person is weak.*
   <u>A</u>. *That old person must be sick.*
   B. *That old person is certainly not sick.*
   C. *That old person may or may not be sick.*
   D. *Probably that old person is not sick.*

The correct answer for the above question was **A** and only 5 percent of the pupils keyed in the correct answer. A large number of pupils keyed in alternative C which was very close to the answer but could not be accepted as the pupils were specifically asked to regard the statements to be true. Item 4 discriminated well, its discrimination index was .33 and it was also significantly correlated with the main subskill. Therefore this item will also be retained.

Correlation between the 7 items and the subscale, *to reason deductively*, ranged from low to moderately high .16 to .61, and all except one, had a significant probability of less than .001. Therefore all the items representing this subskill will be retained.

8.3.2   Distribution and Item Analysis of Subscale 2: "The Ability to Evaluate Inductive Inferences"

This subskill had the largest number of items - 24 items altogether. The items were based on short two-sentence passages and a longer 50-word paragraph. The skill required was the ability to infer inductively based on the information given in the passage. The soundness of the conclusions or inferences was evaluated by answering alternatives like 'probably true' , 'probably untrue' and 'cannot be determined' or 'not sure'.

The distribution of this subskill is normal (skewness = -.369) with a standard error of .125. The mean obtained by the whole sample is 14.0, with a standard deviation of 2.34. The median and the mode is at the score of 14.   The maximum score obtained is 21 and the minimum score is 4 .

Table 8.4   gives a tabulation of item analysis done on these types of questions.

Table 8 4
Item Analysis of Subskill 2:
The Ability to Evaluate the Soundness of Inductive Inferences.

Item No	Frequency Correct	Standard Deviation	Facility Indices	Biserial Corr		Corr. to Subscale
6	237	.47	.67	.12	**	.18
7	302	.35	.85	.16	**	.25
8	294	.37	.83	.22	**	.29
9	239	.47	.68	.11	*	.19
10	301	.36	.85	.05		.12
13	185	.50	.52	.09	*	.19
14	90	.19	.26	.05		.05
15	240	.47	.68	.18	**	.23
16	121	.48	.34	.11	*	.18
19	81	.42	.23	-.02		.04
20	153	.50	.43	.17	**	.15
21	139	.48	.39	.08		.05
22	163	.50	.46	.15	**	.22
26	307	.34	.87	.02		.12
29	10	.17	.03	.03	**	.12
34	161	.50	.46	.12	**	.17
36	248	.46	.70	.30	**	.37
37	288	.39	.82	.28	**	.33
40	336	.21	.95	.23	**	.33
41	166	.49	.53	.26	**	.32
42	230	.48	.65	.22	**	.40
43	255	.45	.72	.20	**	.36
48	229	.48	.65	.23	**	.30
50	156	.50	.44	.04	**	.14

* significant beyond .01

Of the 24 items, three items, Item 14, 19 and 29 seemed to be quite difficult in that only 26% and 23% and 3%of pupils managed to get the items correct; the rest of the items were of moderate difficulty, ranging from .34 to .68 except Items 40, 26, 7 and 10 which were relatively easy with facility index of .85 to .95. The discrimination indices which in this case was shown by the biserial correlation also revealed that Items 10, 13, 14, 19, 21, 26, 29 and 50 had low discrimination power and low insigniff cant correlation with the TMLCRT scale.

Below are examples of items which were problematic or which deviated from the main scale: Item 19, had negative correlation of -.02 as well as low discrimination indices of .04.

<u>*Passage 1*</u>

Ahmad was looking for his lost bicycle in that village. He knew that his friend, Kasim, a poor boy who always plays truant, lives in the village. Children who play truant are thieves. He looked at the left and right of the streeet . Then, lo, thrown by the side of a dilapidated hut, he saw his bicycle.   .

19. Ahmad is a careless boy.
A.   Probably true   B. Probably false   C.   Cannot be determined

Another weak item is item 21 below.
26 Kassim lives in the dilapidated hut..
A.   Probably true   B. Probably false   C.   Cannot be determined

<u>*Passage 2*</u>
Nora intends to score high marks in her spelling test on froday. Spelling is very difficult. In the past she got rather low marks. Nora's mother said,"Why don't you learn bit by bit everyday, rather than learning all the words once and all on Thurday night?" Every night during that week Nora learnt her spelling. On Friday she scored high marks for the test.

26 From that day onwards Nora will learn little by little every night, no longer will she lump her lessons until the last night before the test.
A.   Probably true   B.Probably false C.   Cannot be determined

It is not known why the above items were weak but since they were not consistent with the scale they were deleted in the revision of the instrument.

In view of the above, the weak items, Items 9, 10 13, 14, 19, 21, 26 and 50 which had low correlation with the subscale were deleted.

8.3.3. Distribution and Item Analysis of Subscale 3: The Ability to Evaluate the Soundness of   Generalizations

'The ability to evaluate the soundness of generalizations consists of 12 items.   The maximum score obtained was 10, while the minimum score was 0. The median score was 5 with a mean of 5.01 and standard deviation of 1.9. The distribution of scores was normal, with a skewness of .081.   Table 8.5 shows the analysis of the items on this subscale.

alternatives were very small. To arrive at the correct answer one had to study closely and know the meaning of ' hidden assumption'. The question is translated thus:

> *Let us improve the compounds of our house. An unkempt compound will look untidy and will be the living quarters of snakes or other animals.*

*Q67. The **hidden assumption** behind the above sentence is:*
A. The compound of the house is unkempt.
B. An unkempt compound will attract snakes and other animals.
C. The speaker is a dilligent person.
D. The compound had not been looked after by the gardener.

The first alternative , which is the correct answer is:"The compound of the house is unkempt." If the place is not 'untidy' there will be no suggestion to clean it up.

The second alternative was actually only repeating the suggestion, there was nothing 'hidden' in the statement and was therefore wrong. The third alternative, which means 'The person who is talking is a 'dilligent person' was a possible answer, if there was no other better alternative, as a person is not necessarily 'dilligent' to suggest that statement.

The fourth alternative could also be the correct answer, but it suggests that a gardener is employed to clean the compound, a fact which was not indicated in the text.

This item will therefore be retained with only minor changes to make it clear that it was a dialogue spoken by someone (using quotation marks), rather than as a statement.

8.3.5 Distribution and Item Analysis of Subscale 5: The Ability To Recognize Bias

Ten items were designed to elicit pupils' ability to recognize bias when reading. None of the pupils get full marks for the test. One pupil obtained the score of 9 which is also the maximum obtainable for this subscale. The mean obtained by the subjects was 3.98 with a standard deviation of 1.71. The distribution of this subskill is normal with a skewness of .291.

Item analysis of the items in this subscale is shown in Table 8.7.

Table 8.7
Item Analysis of Subscale 5:
The Ability To Recognize Bias

Item No	Frequency Correct	Standard Deviation	Facility Indices	P. Biserial Correlation	Correlation to Subscale
23	266	.43	.75	.34**	.45**
55	138	.49	.40	.14**	.49**
56	100	.45	.28	.19**	.50**
57	67	.39	.19	.20**	.34**
58	114	.47	.32	.16**	.51**
59	98	.45	.28	.15**	.48**
60	211	.49	.60	.31**	.49**
61	118	.47	.33	.17**	.40**
62	73	.41	.21	.03	.29**
63	227	.48	.64	.37**	.49**

** significant at .001 level

As indicated in the table, the facility indices for the 10 items ranged from .19 to .75. indicating items which were of moderate difficulty. The correlations of the items to subscale showed all the items to be significantly correlated. Only one item did not discriminate between the pass-fail groups, that is Item 62 which is presented below:

Item 62

A. *Madam Asiah is a mother who is ever willing to sacrifice for the well-being of her people.*

B. *She had done a good deed for the deprived people in the society.*

C. *It is not suprising that she is the epitome of the most honourable of ladies..*

D. *The good deeds of the late lady will always be remembered by friends and relatives.*

The biased sentence is ....

Item 62 may have been wrongly interpreted by pupils, because this was the only sentence which referred to positive bias. It could be possible that pupils misunderstood the word 'bias' to mean only something with negative connotation.

The rest of the items would also be retained, as they were good items.

8.4.6 Distribution and Item Analysis of Subscale 6 : The Ability to Differentiate between Facts and Opinion.

There were 10 items to this subscale; all of which were designed to elicit pupils' ability to differentiate whether statements made by the writer were a fact or an opinion. Table 8.8 gives the summary of the item analysis for the subscale.

Table 8.8
Item Analysis of Subskill 6: The Ability to Differentiate Between Fact and Opinion.

Item No	Frequency Correct	Standard Deviation	Facility Indices	P. Biserial Correlation	Correlation to subscale
32	84	.43	.23	.27**	.43**
69	131	.48	.37	.14**	.37**
70	161	.50	.46	.37**	.54**
71	199	.50	.56	.30**	.50**
72	92	.44	.26	.23**	.36**
73	275	.42	.78	.41**	.66**
74	182	.50	.52	.34**	.58**
75	292	.38	.83	.42**	.76**
76	230	.48	.65	.43**	.61**
77	270	.43	.76	.47**	.72**

** significant at .001 level

An analysis of the 10 items showed that all the items were good items, with facility indices ranging from .23 to .83. All the items were also significantly correlated with the subscale. The biserial correlation of the items were also good ranging from .14 to .47. Therefore all the items in this subscale would be retained.

8.4.7. Distribution and Item Analysis of Subskill 7: The Ability To Recognize The Author's Motive

This subscale was comprised of 9 items, Item 31, 38, 47, 53, 80, 85, 86, 91 and 92 designed to elicit pupils' ability to recognise the author's motive and, or message. The distribution of the subscale showed it to be normally distributed, with a maximum score of 9 and a minimum score of 1, the median being at 4. The mean obtained by the sample was 4.40 with a standard deviation of 1.63. The result of the item analysis is tabulated in Table 8.9.

Table 8.9
Percentage distribution of Subskill 7:
The Ability to Recognize Author's Motive.

Item No	Frequency Correct	Standard Deviation	Facility Indices	P.Biserial Correlation	Correlation to Subscale
31	244	.46	.69	.22**	.51**
38	198	.50	.57	.27**	.44**
47	111	.47	.31	.14**	.38**
53	281	.40	.80	.37**	.60**
80	116	.47	.33	.15**	.38**
85	162	.50	.46	.31**	.45**
86	184	.50	.52	.28**	.46**
91	121	.48	.34	.18**	.44**
92	133	.49	.38	.33**	.52**

** significant at .001 level

The result of the item analysis of this subscale tabulated in Table 8.9 shows the facility indices of the items to range from .31 to. 80 which shows the item to be of moderate difficulty. All the items had good discrimination power and moderate correlation with the the subscale. Correlation between the items and subscale were moderately high, between .38 to .60 ; while the biserial correlations between the items and the main scale range between .14 to .38 which was low but significant.
Item 80 and Item47 had the lowest discriminating power but still fall within the acceptable limit.
Thus all the items representing the above subscale will be retained in the final instrument.

8.4.8. Distribution and Item Analysis of Subscale 8 : The Ability to Identify Sources of Material.

This subscale consists of 12 items designed to measure pupils' ability to identify sources, types and uses of the reading passages. Pupils had to arrive at the correct answer by evaluating the style of writing, the specific words used if any. The frequency distribution of the subscale showed that it was normally distributed with a maximum score of 11 and a minimum score of 1. The median score is at 6, while the mean obtained by the sample was 5.85. The standard deviation was 1.89 showing the well-spread nature of the responses. The item analysis result is shown in Table 8.10.

Table 8.10
Item Analysis of Subskill 8:
The Ability to Identify Sources of Material.

Item No	Frequency Correct	Standard Deviation	Facility Indices	P. Biserial Correlation	Correlation to Subscale
24	263	.44	.75	.09	.46**
30	128	.48	.36	.07	.22**
39	163	.50	.46	.30**	.39**
46	125	.48	.35	.28**	.45**
54	243	.46	.69	.31**	.46**
81	113	.47	.32	.05	.34**
82	65	.39	.18	-.11**	.18**
87	197	.50	.56	.31**	.43**
88	321	.48	.65	.36**	.57**
93	197	.50	.56	.27**	.51**
94	168	.50	.48	.39**	.49**
95	166	.50	.47	.43**	.50**

** significant at .001 level

The results of the item analysis show the items to be generally acceptable. Item 82 was found to be of low facility, .18, but otherwise all the other nine items were of moderate difficulty, with facility indices ranging from .32 to .74. The standard deviation of the items was rather similar, ranging from .39 to .50. Four items, Item 24, 30 and Item 81 and 82 have low discrimination power. Item 82 runs contrary to the construct measured by the main scale. A translated version of Item 81 and 82, is presented below.

Passage 6

(First Story and Second story available in Appendix 11)

80. From what source had the first story been taken?
A. A leisure magazine   *B A childrens story*
C. A science textbook   *D A general article*

81. From what source had the second story been taken?
A. A leisure magazine   *B. A childrens story*
C. A science textbook   *D A general article*

In view of these facts, 3 items, Item 30, Item 81 and Item 82 will be discarded for the actual study.

8.4.9 Distribution and Item Analysis of Subscale 9: The Ability to Recognize Similarities and Differences.

There were six items, Item 78, 79, 83, 84, 89 and 90 which were designed to measure pupils' ability to recognise similarities and differences in statements. The frequency distribution of the responses shows it to be normally distributed w'th a mean of 4.17 and a standard deviation of 1.34. Forty-nine pupils obtained the maximum score possible of 6, while 17 pupils obtained a score of 1. The result of the item analysis is tabulated in Table 8.11.

Table 8.11
Item Analysis of Subskill 9:
The Ability to Recognize Similarities and Differences.

Item No	Frequency Correct	Standard Deviation	Facility Indices	P. B serial Correlation	Correlation to Subscale
78	254	.45	.72	.23**	.68**
79	262	.44	.74	.39**	.67**
83	155	.50	.44	.19**	.47**
84	231	.48	.66	.32**	.68**
89	249	.46	.71	.51**	.75**
90	232	.48	.66	.44**	.71**

** significant at .001 level

The item analysis performed on the six items of the subscale showed the items to be good items with average difficulty indices ranging from .43 to .74. All the six items were highly correlated with the subscale and had good discriminating power with biserial correlation ranging from .19 to .51.

Item 83 had moderate facility index, was significantly correlated with the subscale and had lower discrimination index if compared with other items. All six items for this subscale will be retained in the actual MLCRT.

8.3.10 Distribution and Item Analys's o Subscale 10: The Ability to Evaluate the Strength of Arguments.

This final subscale comprised of 5 items based on five passages. The questions, one for each passage, were d signed to elicit pupils' ability to evaluate the strength of argum nt presented in the passages. The distribution of the response o tnis subscale shows it to be normally distributed, with a mean va e of 2.55 and standard

deviation of 1.01. The maximum score of 5 was only obtained by one testee, while 53 testees got the score of 1 which was the minimum. The result of the item analysis performed on this subscale is presented in Table 8.12.

Table 8.12
Item Analysis of Subskill 10:
The Ability to Evaluate Strengths of Arguments.

Item No	Frequency Correct	Standard Deviation	Facility Indices	Discrimi -nation Indices	Correlation to Subscale
96	57	.37	.16	-.04	.25**
97	177	.50	.50	.30	.67**
98	193	.50	.55	.50	.50**
99	187	.50	.53	.40	.40**
100	145	.49	.41	.21	.21**

** significant at .001 level

The result of item analysis revealed that one item, Item 96, was a weak item with negative discrimination index of -.04. All the other four items had good facility indices with average difficulty (ranging from .41 to .55) and moderately discriminating; with discrimination indices ranging from .21 to .50. The other four items also correlated siginificantly with the subscale.

Item 96 would therefore be discarded, in the main instrument for the actual study. All other items will be retained .

8.5   The Distribution of the 100-item Trial-MLCRT Scores

The maximum possible score for the overall test was 100, but pupils' performance in this test ranged from a minimum of 19 to a maximum of 73. The mean obtained by this sample of 353 valid responses was 50.4, slightly below the 50 percent score. The mode of response was established at 55 with a standard deviation of 8.72 and standard error of .46. In the above analysis, and in subsequent analysis, the TMLCRT scores were categorized into seven categories with 1 as the lowest category, in ascending order, to 7 as the highest category. The distribution of the scale showed that the pattern of score distribution was a normal curve. Table 8.13   gives the distribution of the TMLCRT total scores

Table 8 . 13
Distribution of the TMLCRT Scores

TMLCRT Category	Frequency	Percentage
1. Lowest to 34	21	5.7
2. 35 to 40	29	7.4
3. 41 to 45	52	11.4
4. 46 to 50	80	17.2
5 51 to 55	79	15.9
6. 56 to 60	62	15.3
7 61 to highest	30	8.2
Total	353	100.0

8.6 Distribution of TMLCRT Scores by Levels

The means of the total trial-TMLCRT scores of the pupils showed a trend indicating that the higher the level or class of the pupils, the higher the means obtained by the class, for example, the Sec 1 pupils obtained a mean of 46.60, the Sec2 pupils, a little higher at 46.73, the Sec 3 pupils obtained a mean higher still at 53.42 and the PU 1 pupils the highest, at 59.38. Tables 8.14 shows the distribution of the scores by levels.

Table 8.14
Distribution of Trial-MLCRT Scores by Levels

Levels	N Cases	Minimum	Maximum	Mean	SD
Sec 1	127	26	66	46.60	8.03
Sec 2	55	29	64	46.73	8.72
Sec 3	66	37	70	53.42	6.72
Sec 4	69	33	69	54.63	7.80
Sec 5	22	47	65	55.05	4.83
PU 1	14	46	72	59.21	8.38

The means of the total TMLCRT scores of the pupils showed a trend indicating that the higher the level or class of the pupils, the higher the means obtained by the class, for example the Sec 1 pupils obtained a mean of 46.60, the Sec 2 pupils a little higher at 46.73,

the Sec 3 pupils obtained a mean higher still at 53.42 and the PU 1 pupils the highest at 59.21.

8.7 The TMLCRT Subskills

The strength of relationship between the subscales and the main scale (TMLCRT) will give some indication of the subscale validity or consistency of the subscale to the total scale. The subscales should correlate highly with the total scale, but it should <u>not</u> correlate more highly with each other. The result of the correlation analysis between the 10 subscales and the TMLCRT is presented in Table 8.15.

Table 8.15
Correlation Matrix Of the 100-Item TMLCRT and 10 Subscales

Subskills	1	2	3	4	5	6	7	8	9	10	11
TMLCRT	1.00										
Deductive	.26*	1.00									
Infer	.53*	.12*	1.00								
Generali	.35*	.17*	-.02	1.00							
Hiddenas	.26*	.11*	.07	.06	1.00						
Bias	.51*	.07	.09	.04	.07	1.00					
Factopin	.73*	.12*	.22*	.08	.13*	.31*	1.00				
Amotive	.61*	.09	.14*	.17*	.15*	.22*	.38*	1.00			
Material	.52*	.09	.09	.01	.08	.15*	.37*	.31*	1.00		
Simildiff	.66*	.08	.17*	.06	.02	.23*	.54*	.39*	.30*	1.00	
Strargum	.53*	.02	.17*	.04	.07	.15*	.35*	.27*	.31*	.41*	1.00

* -significant at .001

The whole matrix indicated an array of correlations ranging from negative correlations to high significant correlations among the ten subskills (ranging from -.02 to .73). Correlations between the individual subskills and the TMLCRT scores were definitely higher and significant, ranging from .26 to .73   From this array of correlations some pattern could be discerned.

• *The ability to reason deductively* correlated significantly with only four subskills; *'the ability to evaluate inferences', the ability to evaluate generalization and the ability to recognize facts and opinions. ,* and *the ability to recognize hidden assumptions.* It had the highest correlation with the main scale.

• *The ability to evaluate inductive inferences* correlated with four subskills, *the ability to reason deductively' , the ability to recognise author's motive., the ability to recognize simnilarities and differences and the ability to recognize facts and opinions."* It had the highest correlation with the main scale.

• *The ability to evaluate generalizations* correlated two other subskills, *'The ability to reason deductively' and the ability to recognise author's motive.* It had the highest correlation with the main scale.

• *The ability to recognize hidden assumptions.* correlated only with three subskills, *The ability to reason deductively' and the ability to recognise author's motive.* and *the ability to identify facts and opionions".* It had the highest correlation with the main scale.

• *The ability to recognize bias* correlated with four subskills *'the ability to differentiate between facts and opinion s'* and *'the ability to recognize the author's motive.', the ability to identify sources of material* and *the ability to recognise similarities and differences.* It had the highest correlation with the main scale.

• *The ability to recognize facts and opinions.,* correlated with all subskills except *the ability to evaluate generalizations.* It had the highest correlation with the main scale.

• *The ability to recognize author's motive.* correlated with all subskills except with *the ability to evaluate deductive inferences.*

• *The ability to evaluate textual materials* correlates with five subskills, *'the ability to recognize bias, the abilty to differentiate between facts and opinions 'the ability to recognize the author's motive.', the ability to identify sources of material* and *the ability to recognise similarities and differences.* It had the highest correlation with the main scale.

• *The ability to recognize similarities and differences* correlated with six subskills except with *'the ability to evaluate deductive inferences , the ability to evaluate generalization and the ability*

recognize hidden assumptions' It had the highest correlation with the main scale.

• *The abilitty to evaluate strengths of arguments* correlated with four subskills, *'the ability to differentiate between facts and opinions 'the ability to recognize the author's motive.', the ability to identify sources of material* and *the ability to recognise similarities and differences..* It had the highest correlation with the main scale.

Thus every subscale had higher correlation with the TMLCRT total scores than with each other. Although some of the correlations were low, some degree of consistency of the subscales as a measure of critical reading ability were indicated. The to moderate correlations among most of the subscales indicated that the subscales contributed independently to the total scale.

In view of the above result all the ten subscales would be retained in the actual test.

8.8   Reliability   of   the   TMLCRT

The method used to examine the reliability of the test or its internal consistency was the Cronbach Alpha where Alpha was defined by the formula:

Alpha = k/k-1) (1 - ξ V**2i/V**2x)

where k is the number of items in the test, V**2i is the variance of item i, and V**2x is the total test variance. The reliability of this test was assumed as the reliability of a composite made up of nonparallel subtests. Its computation requires the number of subscale (items), the variance of the composite scores (total variance of the test) and the sum of all the subtest covariances. The Alpha obtained by the TMLCRT and the 10 subscales is tabulated below in Table 8.16 .

Table 8.16
Reliability of the Trial-TMLCRT

Scale Items	Cases	Mean	Variance	Alpha
100	353	49.66	75.96	.738

Thus the reliability of the trial-TMLCRT was 0.74 .
The standard error of measurement of the test (or the standard deviation of the true score) was calculated by using the formula:

$$SEM = SD \sqrt{1 - R} \quad , \text{ where}$$

SD is the standard deviation of the test
R is the reliability coefficient.

The standard error of the TMLCRT obtained by using the above formula was 4.46. This means that there is a 68% chance that the true score of pupils' TMLCRT scores will fluctuate 4.46 points on either way and 95% and 99% chance that it is within two and three standard error of measurements respectively.

The reliability of the 100-item MLCRT is rather low, however with improvements in the test items, a higher value is expected for the actual MLCRT.

8.8.1 Reliability of the TMLCRT by Grade Level

The reliability of the TMLCRT by class is given in Table 8.17. The reliability of the scale for Sec 5 was very low .15, but this may be due to the Sec 5 pupils consisting only those who were in the normal stream. For the other classes, the reliability ranged from .57 to .74.

Table 8.17
Reliability of the Trial-TMLCRT by Class or Level

Levels	Number	Alpha
Sec 1	127	.687
Sec 2	55	.741
Sec 3	66	.573
Sec 4	69	.690
Sec 5	22	.152
Pre-U1	14	.737

8.9 Summary of Results of the TMLCRT and Subscales

The results of the various analyses performed on the main scale, that is the TMLCRT, and its 10 subscales, could be summarized thus:

1. The 100-item trial-TMLCRT had a low reliability, with an internal consistency of .74 .

2. All the subskills tested correlated significantly with the main scale and will therefore be retained in the model.

3. Most of the items comprising the subscales were generally good items and hence will be retained for the main study.

4. Some weak items, especially those that were negatively correlated and those showing poor discriminating powers will be discarded, in the revision of the instrument for the main study.

In the light of the above results of the trial instrument, a revised version of the MLCRT was constructed. Most of the weak items were discarded but some items were revised and included in the actual test. The revised test known as the Malay Language Critical Reading Test (MLCRT) is available in Appendix 17, the translated version in Appendix 18. The list of subscales, the answer and keyed answer in Appendix 19, 20 and 21.

8. 10   The Trial-Critical Thinking Disposition Inventory

The results of the trial-run study of the TCTDI will be presented in the following order: Firstly a general picture or trend of the 40-item Trial Critical Thinking Inventory comprising the frequency distribution, the mean obtained for every item of the test will be presented, followed by the correlation between each individual item and the main scale. Secondly comes the presentation of the results by class level in order to examine if the overall test had any bias. Finally, the reliability of the main scale as well as the reliability of the scale by class levels was attempted.

The TCTDI was pilotted using the same subject as the TMLCRT test in most of the cases, but it also included a number of pupils were not able to respond to both tests.   Therefore the number of respondents to the TCTDI varies from the TMLCRT. The total number of pupils who responded to the TCTDI was 236 , and included pupils from the two trial schools.   The sample distribution is tabulated in Table 8.18 .

Table 8.18
Distribution of Trial-run Sample by Grade Level and Stream

Grade Level	Express	Normal	Total
Sec 1	25.4%	74.6%	(63)
Sec 2	50.0°o	50.0%	(70)
Sec 3	18.5%	81.5%	(27)
Sec 4	56.5%	43.5%	(62)
PU 1	100°o	-	(14)

8.11 Results of the Trial Critical Reading Disposition Inventory

The Critical Reading Disposition Inventory (TCTDI) consisted of 40 multi-point items. The respondents were required to mark their appropiate responses based on a four-point scale, that is, 'all the time'. 'often', 'sometimes' and 'never'. Therefore the maximum score possible for this 4-point test was 160, calculated on the basis that 'those who indicated 'never' score 1 point, 'sometimes', 2 points, 'often', 3 points and 'all the time' score 4points. Appendix 22 presents the full responses of the pupils to the 4-point scale.

8.12 Frequency Distribution of TCTDI Total Scores

The mean points obtained by the whole sample on this scale was 98.17 with a standard deviation of 14.8. The maximum and minimum point obtained by the pupils were 58 and 152 respectively. The distribution of scores indicated a normal curve with a positive skew of .158. From the above distribution of frequency, it was found that 69.5% of pupils have a score of 80 and above. Table 8.19 below shows the result.

Table 8.19
Frequency Distribution of TCTDI Total Scores

TCTDI Category	Frequency	Valid Percent
130 to high	7	2.5
120 to 129	12	3.9
110 to 119	27	11.0
100 to 109	62	25.0
90 to 99	59	27.1
80 to 89	52	21.6
70 to 79	14	7.2
low to 69	3	1.7
Total	236	100.0

8.13 Internal Consistency of TCTDI Items

The internal consistency or homogeneity of the items involves the product-moment Pearson correlation of the items with the total scale scores. The correlation of the TCTDI items with the trial-TCTDI scale is given in Table 8.20.

The correlation matrix indicated that almost all the TCTDI items, had a significant moderate to high correlations with the main trial

scale TCTDI, 38 items had correlations indices ranging from .35 to .62; two items Item 2 and Item 3 had negative correlations, showing that the items were not consistent with the main scale. The items were translated thus:

Item 2
I believe whatever the author says is true.
a) all the time   b) always   c) sometimes   d) never

Item 3
I agree with what the author says.
a) all the time   b) always   c) sometimes   d) never
Therefore it was decided that these two items would be deleted for the main CTDI, all the other 38 CTDI items will be retained for the actual study.

Table 8.20
Correlations Between TCTDI Items and TCTDI Total Scale

Items No.	Correlation	Item No.	Correlation
1	.47**	21	.40**
2	-.03	22	.41**
3	-.15**	23	.36**
4	.48**	24	.41**
5	.41**	25	.36**
6	.43**	26	.42**
7	.51**	27	.49**
8	.40**	28	.50**
9	.46**	29	.51**
10	.41**	30	.35**
11	.49**	31	.47**
12	.56**	32	.47**
13	.51**	33	.55**
14	.43**	34	.62**
15	.48**	35	.55**
16	.43**	36	.54**
17	.45**	37	.41**
18	.46**	38	.51**
19	.52**	38	.51**
20	.43**	40	.41**

** = probability less than .001

8.14   Reliability of the TCTDI

The reliability analysis of the main scale, the TCTDI was conducted, using the Cronbach Alpha. All the 40 items were entered in the scale and Cronbach Alpha was calculated using the formula:

Alpha = k/k-1) (1 -   V**2i/V**2x)

where k is the number of items in the test,
V**2i is the variance of item i, and
V**2x is the total test variance.

The reliability of this test was assumed as the reliability of a composite made up of nonparallel items. Its computation requires the number of items, the variance of the composite scores (total variance of the test) and the sum of all the item covariances.

The Alpha obtained by the TCTDI calculated by the above method was .90 showing that the items were consistent with the TCTDI scale. as a whole .

8.15   Split-half Reliability Reliability of TCTDI

The reliability of the TCTDI was calculated by using the Spearman split half method . In this case two forms of the test were created by using alternate items in the original inventory, therefore all the positive items was grouped under one part and the negative items split into another part. The assumption was that the variances of the odd and the even items do not differ significantly. Using this type of approach, the reliability of the TCTDI was .926. The result is shown in Table 8.21.

Table 8.21
Split-half Reliability of TCTDI

No of cases : 236	No of items: 40
Part 1 Number of Items: 20	Part 2 Number of Items: 20
Alpha : .740	Alpha : .778

Spearman Brown Split-half : **.926**

The standard error of measurement of the test (or the standard deviation of the true score) was calculated by using the formula:

SEM = SD / 1 - R   , where

SD is the standard deviation of the test
R is the reliability coefficient.

The standard error of the TCTDI obtained by using the above formula was 4.7. This means that there is a 68% likelihood that pupils' TCTDI scores will fluctuate about 5 points on either side of their true TCTDI scores.

8.16   Reliability of Trial-TCTDI by Grade Level

The reliability of the trial test by each level was also calculated by using the split half method. The result is shown in Table 8.22. The reliability of the TCTDI ranges between .79 and .96 using the split-half method.

Table 8.22
Reliability of TCTDI by Grade Level

Class	N	Alpha-Part 1	Alpha-Part 2	Spearman Brown Split-half
Sec 1	63	.74	.78	.96
Sec 2	70	.83	.83	.93
Sec 3	27	.90	.86	.90
Sec 4	62	.77	.76	.92
PreU 1	14	.67	.60	.79

8.17. Summary of the TCTDI Result.

The results of the several types of analysis performed on the TCTDI showed the instrument to be a sound one with a split half reliability of .93 and Alpha of .90. Almost all the items had significant correlation with the main scale, giving evidence to its internal validity. Thus thirty eight items out of the original forty would be retained for the main study. The Malay version of the revised test is presented in Appendix 23 while the translated version is available in Appendix 24.

8.18 Conclusion

Two main criteria of item effectiveness were used for the trial run, item facility indices and item discrimination. As a result of the item analysis, two instruments to be used for the actual standardization process, namely the TMLCRT and the TCTDI, were refined. Although the initial result of this phase of study showed the potential of both instruments, it was only through the further process of validation of the instruments with a representative sample that the reliability and validity of the tests could be determined.

Accordingly the next chapter will describe the standardization process and the results of the actual study.

PART FOUR

THE ACTUAL STUDIES

This final section deals with the result of the actual studies. Chapter 9 presents the standardization of the main instrument the Malay Language Critical Reading Test as well as the analysis of the subskills representing the ability to read.

Chapter 10 describes the result of the standardization of the secondary instrument, the Critical Thinking Disposition Inventory.

Chapter 11 then presents the explorations in the process of model building, namely, The Exploratory Model of the Correlates of Critical Reading Ability.

Finally, Chapter 12 discusses the major findings, its conclusions, implications and suggestions for future lines of research.

CHAPTER 9
STANDARDIZATION OF THE MALAY LANGUAGE CRITICAL READING TEST

9.1 Introduction

This chapter deals with the main line of inquiry which focuses on the nature of critical reading ability of Singaporean Malay pupils in Malay language. Initially the chapter will describe the sample, and discuss the results and the further development of the Malay Language Critical Reading Test (MLCRT) into the revised version (RMLCRT). Based on the RMLCRT, the estimated ability of the subjects will be constructed by using the traditional classical method and also the Rasch analysis. The reliability and validity of the RMLCRT will be presented before the final model of the construct of critical reading ability is proposed.

9.2 Sample for the Whole Study

Altogether 1,643 pupils from twelve secondary schools participated in this phase of the study. The schools were randomly selected based on their school zones or geographical area where they were located. All the four school zones, the East, West, North and South zones were represented. The list of schools and number of pupils participating in the study are listed in Appendix 25.

The distribution of secondary classes by stream is presented in Figure 9.1. and Table 9.1. Secondary one pupils form the largest group, while secondary 4 pupils constitute the smallest group, totaling only 19.4% of the total sample.

Figure 9.1
Distribution of Whole Sample by Grade Level and Stream
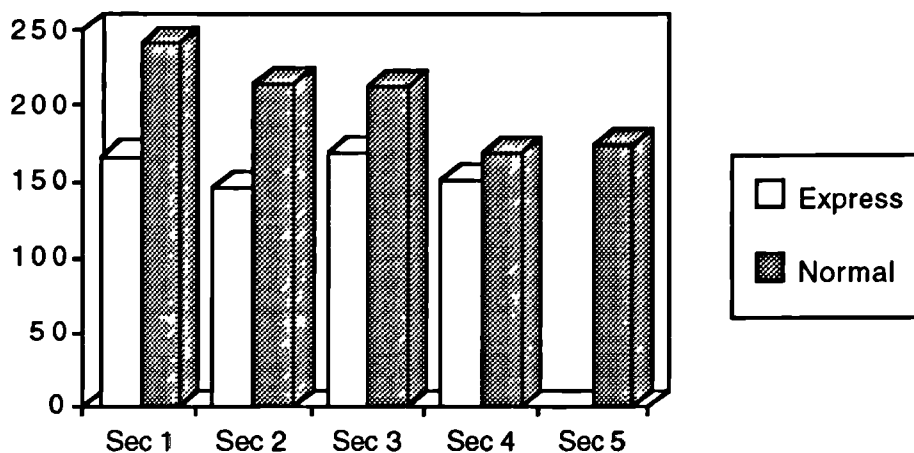
Table 9.1
Distribution of Whole Sample by Grade Level and Stream

Classes	Express	Normal	Total
Sec 1	166 (26.3%)	241 (23.8%)	408 (24.8%)
Sec 2	145 (23.0%)	215 (21.3%)	361 (22.0%)
Sec 3	168 (26.7%)	213 (21.1%)	381 (23.2%)
Sec 4	151 (24.0%)	168 (16.6%)	319 (19.4%)
Sec 5	-	174 (10.6%)	174 (10.6%)
Total	630 (38.4%)	1011 (61.6%)	1643 (100%)

An almost equal proportion of boys and girls was represented, the percentage of boys and girls by the streams in secondary schools is shown in Table 9.2 and Figure 9.2. Forty respondents did not state their gender and were therefore excluded in the calculations. Of the information available slightly more girls than boys were represented in the Express stream: with 41.1% of the g'rls compared to only 34% of the boys. This reflects the gender distribution in the school population where more girls were in the Express stream than boys.

Figure 9.2
Distribution of Whole Sample by Stream and Gender
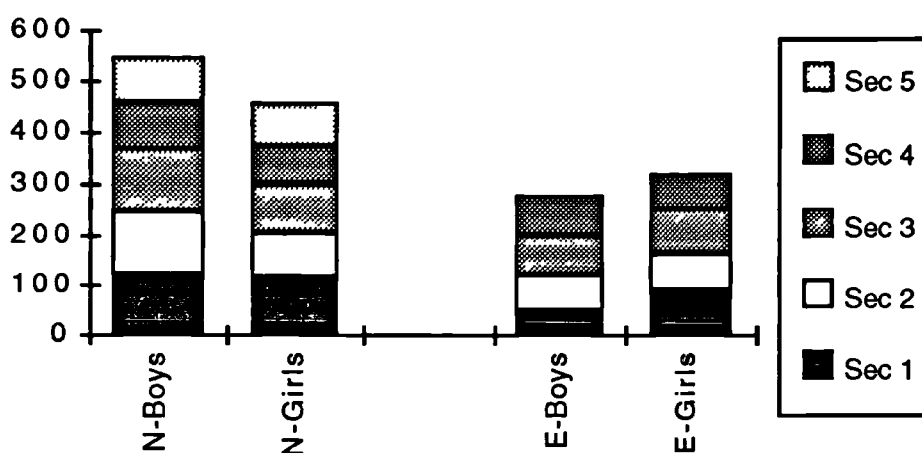
Table 9.2
Distribution of Whole Sample by Stream and Gender

Levels	Normal		Express	
	Boys	Girls	Boys	Girls
Sec 1	122 (50.8%)	118 (49.2%)	48 (34.3%)	92 (65.7%)
Sec 2	126 (58.6%)	89 (41.4%)	74 (51.4%)	70 (48.6%)
Sec 3	120 (56.6%)	92 (43.4%)	79 (47.0%)	89 (53.0%)
Sec 4	89 (54.6%)	74 (45.4%)	80 (54.1%)	68 (45.9%)
Sec 5	89 (51.5%)	84 (48.6%)	-	-
Total	546 66.0%	457 58.9%	281 34.0%	319 41.1%

From the total of 1643 cases, only 1444 pupils responded to the MLCRT and RMLCRT standardization and 1024 pupils responded to the CTDI. The results of both the MLCRT standardization are presented next.

9.3   Sample Distribution for the MLCRT Standardization

The original MLCRT was standardized on 1444 pupils from twelve secondary schools in Singapore. These respondents came from Sec 1 to Sec 4 of both the Express and the Normal streams. About 41.8% of the sample were from the Express stream while 58.2% of them came from the Normal stream. One hundred and twenty-nine pupils from Sec 5 Normal also took the test. The distribution of the sample by level and stream is presented in Table 9.3. and Figure 9.3 respectively.

Table 9.3
Distribution of MLCRT Samples by Level and Stream

Classes	Express	Normal	Total
Sec 1	151	211	362
	41.8%	58.2%	25.1%
Sec 2	138	194	332
	41.9%	58.1%	23.1%
Sec 3	157	196	353
	44.5%	55.5%	24.4%
Sec 4	134	134	268
	50%	50%	18.5%
Sec 5	-	129	129
		100.0%	8.9%
Total	581	864	1444
	40.2%	59.8%	

Figure 9.3
Distribution of MLCRT Samples by Level and Stream
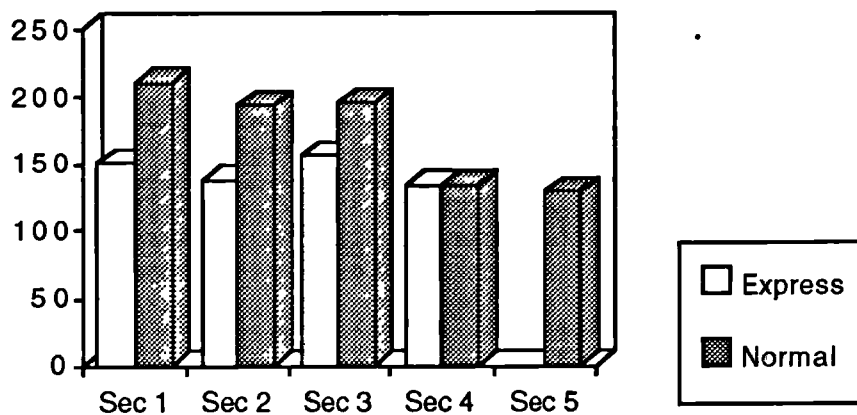
The distribution of the sample by gender is given in Table 9.4. and the chart in Figure 9.4 while the percentage distribution by grade level, stream and gender is given in Figure 9.5.

Figure 9.4
Distribution of MLCRT Sample by Gender
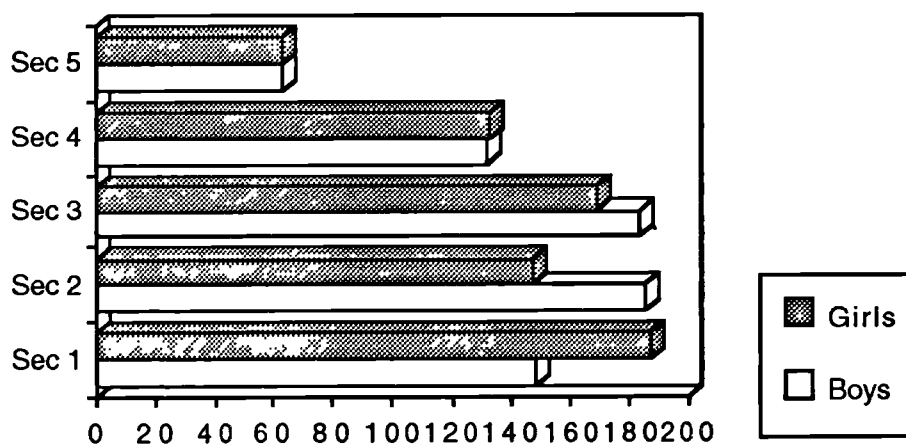
Table 9.4
Distribution of MLCRT Sample by Gender

Level	Boys	Girls	Total
Sec 1	148	187	335
	44.2%	55.8%	(23.7%)
Sec 2	185	147	332
	55.7%	44.3%	(23.5%)
Sec 3	183	169	352
	52.0%	48.0%	(24.9%)
Sec 4	132	133	265
	49.8%	50.2%	(18.8)
Sec 5	64	64	128
	50.0%	50.0%	(8.9%)
Total	712	700	1412
	50.4%	49.6%	100.0%

Figure 9.5
Percentage Distribution of MLCRT Sample by Grade Level, Stream and Gender

Exp-girls Exp-Boys Nor-girls Nor-Boys
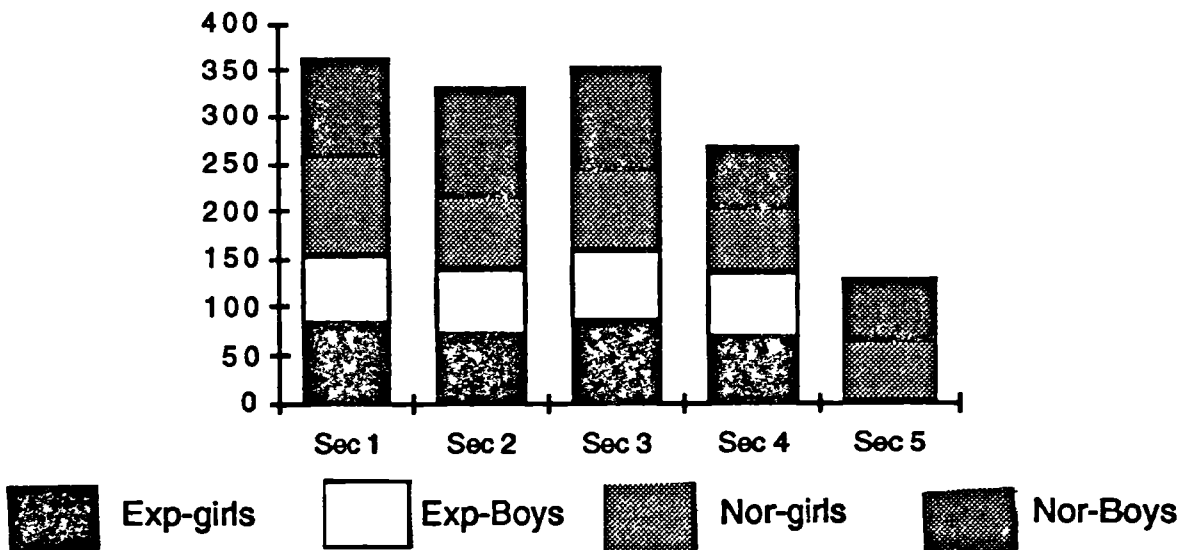
From the above tables it could be seen that a fairly representative sample of pupils taking Malay as a Second Language was achieved. About 59.8% of pupils from the Normal stream and 40.2% from the Express stream are represented which is in line with the ratio of 3 to 2 of the Normal-Express school population of Malay pupils. The number of male and female testees (of those known gender), comprising 700 females and 712 males, was also representative of the school population.

The largest school sample came from Bedok South Secondary school where there was a high concentration of Malay pupils. Ping Yi Secondary, situated in the east zone, also had a high concentration of Malay pupils. Dunearn and Clementi Secondary schools were in the western zone with fairly large numbers of Malay pupils and contributed 13 and 11 percent of the sampled pupils respectively. Woodsville Secondary had quite a large number of Malay pupils but only a small number were available at the time of testing.

9.4 Results of the Malay Language Critical Reading Test (MLCRT)

The 82-item MLCRT was administered to 1444 pupils from Secondary 1 to Secondary 5 pupils of the Normal and Express stream . (The original Malay version of the MLCRT is presented in Appendix 17 while the English version is found in Appendix 18). The time allotted to the test was one hour fifteen minutes. The Malay teachers of the specific schools administered the tests to each class, after prior briefing by the researcher. Answers to the items were to be written on a separate answer sheet designed for the purpose . Pupils were directed to answer all the questions. If they were to find one particular item to be difficult, they were encouraged to proceed to the next question and return to it later. After the answer sheets were collected, pupils' responses to the test were keyed in and computed for statistical analysis using the SPSSX package.

9.5 Overall Results of the MLCRT

The maximum possible score for the overall test was 82, but pupils' performance on this test ranged from a minimum of 9 to a maximum of 69. The mean obtained by this sample of 1444 valid responses was 41.242. The mode of response was established at 40, with 41 as the median response. The standard deviation of the this total MLCRT distribution was 10.25 with a standard error of .27. The skewness of

the distribution was at -.1137, which indicated that the distribution was normal, with just some slight skewness towards the right.

9.5.1 Analysis of MLCRT Items

The MLCRT comprised 10 subscales which represented 10 subskills identified to represent the ability to read critically. The items in each subscale were chosen based on the result of an item analysis of the pilot study. Every subskill consisted of at least four questions. The main objective of this analysis was to examine the relative effectiveness of the items in terms of the total scores. The effectiveness of these items was measured using four criteria:
a)   its facility indices,
b)   its discrimination power measured by the point biserial correlation,
c)   its internal pattern through item characteristic curves, and
d)   its correlation with the subskill.

In the scoring of the items, the correct answer was coded as '1' and all incorrect reponses as '0'. All blank answers or missing values were coded as incorrect. The number of non-response answers was negligible as incomplete test answers were discarded in the initial vetting of the cases.

9.5.2 Facility Indices of MLCRT Items

The responses or the proportion of correct answers (p) to the items were calculated through the difficulty or facility indices. The facility indices of the items ranged from .95 to .12. A perusal of the difficulty of all the 82 items shows that most of the items were of moderate difficulty. Five items were too easy (facility index above .8) and 3 items were considered to be too difficult with facility indices below .2. The difficult items were Item 52 (facility index = .18) and Item 42 (facility index = .17) . The easy items were Item 1 (facility index = .95), Item 29 (facility index =.89) Item 3, (facility index = .86) , Item 4 (facility index -.81) and Item 26 (facility index = .80). The facility index for the test as a whole was .498, very close to .5 which is a middle range difficulty targeted for the test.

9.5.3 Discrimination Indices of MLCRT Items

The discrimination indices of the items indicate the power of each item to 'discriminate' between the upper (pass) group and the lower (fail) groups based on the total MLCRT scores. The discrimination

power of all the items was calculated by using the point biserial correlations in which the number of correct responses of each item was correlated with the total MLCRT scores.

In the case of the MLCRT, all the 82 items registered positive biserial correlations or discrimination power, but 9 items, or 11% of the items had correlations of less than .1 and 13 items, or 16%, had correlations of between .1 and .2. Although the discrimination power of these items was low, it was not negative.

9.5.4 Item Characteristic Curve of MLCRT

The Item Characteristic Curve (ICC) is a graph of the percentage of pupils passing an item as a function of total raw score on the test. It is commonly used to reveal defective items in a test. The ICC of items was constructed because even acceptable facility indices and discrimination indices sometimes could not reveal the effective functioning of the item across all levels of ability. To be effective, the proportion of examinees who answer a test item correctly should increase steadily with increases in total scores on the test. (Aiken L.R. 1971).

An ICC of the percentage of pupils passing a particular MLCRT item as a function of the total raw score on the MLCRT was produced by charting the percentage of correct responses of five roughly equal groups of MLCRT testees based on their total scores. The group of five was selected as what was required was only a rough indication of the characteristics of the items across the lower and higher ability groups. The ICCs of all 82 items are reproduced in Appendix 30.

From the graphs it was shown that in most of the item curves, the proportion of correct answers increased with increases in total test scores. Examples of this type of item are available in Items 25, 26, 81 and 82 which shows that as the ability increases the percentage of correct responses also increases. Four items, Item 13, 14 ,15 and 16, were not very discriminating as the pattern of scoring between the high ability and the low ability groups did not differ very much.

A flat curve which indicated the inability of the items to discriminate between the high, intermediate and low ability groups could be found in items 1, 2, 3, 4, 32, 47 and 52. Items 1, 3 and 4 were too easy and did not discriminate the low and the high group, whereas item 2 was too difficult for both groups.

The first four items showed the ceiling and floor effects, with items 1, 3 and 4 showing the ceiling effects - the items were too easy for all groups. Item 2 showed the floor effect where the item was found to be difficult for all groups. Item 52 showed a slight increase for the highest critical reading group, although it failed to show the upward trend for the other four groups. Item 32 on the other hand showed a downward dip for the middle group. Thus the curves revealed some weak items in terms of discrimination power.

On the whole the graphs indicated that pupils of high ability on the MLCRT performed better in almost all the items.

9.5.5 Item Bias and MLCRT

The possibility of some items to be biased towards either boys or girls was examined through the Item Characteristic Curve. which Jensen (1980) regarded as one of the most sensitive ways of identifying bias in items. The characteristic curves for the total MLCRT scores by gender are given in Appendix 31 where the ICC of every item of the MLCRT by gender follows. These graphs were meant to detect firstly, the extent of gender bias if any in the MLCRT items, and secondly, the differential responses of both genders in a particular item.

Generally, the charts indicated that the response pattern of most items by both the boys and girls was almost identical, as revealed in Item 21 in Figure 9.10, but in some items the girls from all groups did better than the boys, with the highest ability girls registering higher percentages of correct responses than the boys. Among the lowest ability groups, the boys showed higher percentages of correct responses of the items than the girls, thereby indicating the more homogeneous ability of the boys in most items. Exception to this pattern is evident in items 7, 8, 12, 13, 21, 24, 30, 32, 38, 39, 44, 52, 54, 57, and 66 (which amounts to 18.29% of the total number of items).

In general, the variances of correct responses *within* the 5 ability groups of boys did not differ very much compared to the variances among similar groups of girls. Items 24, 23, 28, 32, 41, 40, 43, 47, 50 51, 52, 57, 65 showed a slight dip in the percentage of highest critical reading ability boys as compared to the same category of girls. Altogether 17% of items showed a slight dip for the highest male group of critical reading ability compared to that of girls, but on

the whole, the highest ability group of girls exceeded the boys' performance.

The above result is consistent with the expert view expressed on the content of the test where no bias was detected. Consequently the main conclusion arrived at in relation to gender bias is that generally the test is bias-free with regard to differential pattern of responses between girls and boys. The few items which did show slight differences in the responses between the upper-most groups of girls and boys did not amount to bias by psychometric criteria, which refers to systematic errors in the construct validity of the test-items. Two items, Item 32 and Item 42, were close to being considered as biased in favour of the highest ability girls only, not to the majority of the testees. Therefore it could be confidently concluded that any boy-girl differences as found in the performance in MLCRT could possibly be attributed to other factors external to the test, instead of to the intrinsic bias of the test itself.

9.5.6 Analysis of Items Within Each MLCRT Subskills

The result of the item analysis of the MLCRT nested within each of the ten original subskill, is presented in Appendix 32. In the tables, the 'percentage correct' column represents the percentage of pupils who had keyed in the correct answers. The discrimination indices of the items were calculated using the point biserial correlations where the dichotomous item (coded 0 for wrong answer and 1 for the correct answer) were correlated with the total score. The correlation to subscale column, produces the product-moment correlations between the item and its respective subskill.

9.5.7 Correlations of Subskills with MLCRT Total Scale

The strength of relationship between the subscales and the main scale (MLCRT) will give some indication of the internal validity or consistency of the subskill with regard to the total scale. The subscales should correlate highly with the total scale, but should *not* correlate more highly with each other. The result of the correlation analysis between the 10 subscales and the MLCRT is presented in Table 9.5. The intercorrelations of the subskills and the total test score were used as an indicator of the internal consistency of the subskill.

Table 9.5
Intercorrelations between Subskills and MLCRT

Skills	MCRT	DED	INF	GEN	HID	BIAS	MOTI	MAT	FAT	SIMD	STRA
MLCRT	1.00									.	
DED	.24*	1.00									
INF	.57*	.14*	1.00								
GEN	.48*	.08*	.33*	1.00							
HID	.44*	.12*	.18*	.14*	1.00						
BIAS	.58*	.06	.21*	.14*	.20*	1.00					
MOTI	.67*	.13*	.29*	.23*	.23*	.34	1.00				
MAT	.71*	.16*	.29*	.16*	.22*	.32*	.43*	1.00			
FACT	.75*	.13*	.29*	.20*	.33*	.42*	.43*	.50*	1.00		
SIMD	.72*	.12*	.28*	.18*	.25*	.34*	.46*	.57*	.54*	1.00	
STRA	.55*	.07*	.20*	.12*	.13*	.21*	.37*	.43*	.37*	.44*	1.00

(* significant beyond .01 level)

The matrix shows an array of positive and significant correlations beyond the .01 level. The correlation coefficients range from .06 to .75. Except for the first subskill, 'the ability to reason deductively', which had a correlation of .24 with MLCRT, correlations between the ten subskills and the MLCRT scores were high and atatistically significant, ranging from .44 to .75 showing that the subskills were valid measures of the construct of critical reading ability. Some patterns which could be discerned from the inter-subskill correlations are discussed below.

•*The ability to reason deductively* correlated significantly with most of the other subskills, except with *the abilty to recognize bias* . Among the ten subskills its highest correlation was with *the ability to recognize uses and sources of material.* Its highest correlation was with the main scale, r = .24.

•*The ability to evaluate inferences* had the highest correlation with MLCRT, r=.57. Among the subskills the lowest correlation was with ' *the ability to reason deductively'.* while its highest was with *the ability to evaluate generalizations.*

• *The ability to evaluate generalizations* had the highest correlation with MLCRT (r= .48), and among the subskills, the highest correlation was with 'the ability to evaluate inferences' . Its lowest correlation was also with 'the ability to reason deductively".

• *The ability to recognize hidden assumptions,* correlated highly with MLCRT (r= .44). Its second highest correlation was with 'the ability to recognise facts and opinions'. Its lowest correlation was with "the ability to reason deductively".

• *The ability to recognize bias* 'too had the highest correlation with MLCRT (r= .58) and second highest with 'the ability to recognize facts and opinions.'• Its lowest correlation was with "the ability to reason deductively".

• *The ability to recognize facts and opinions.,* had the highest correlation of .75 with MLCRT . Among the subskills its highest correlation was with "the ability to recognise similarities and differences.' while its lowest correlation was also with "the ability to reason deductively".

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• *The ability to recognize author's motive* correlated with all subskills and like 'the ability to recognize facts and opinions' it had the highest correlation with MLCRT (r = .67) and second highest with 'the ability to recognize similarities and differences . Its lowest correlation was also with "the ability to reason deductively".

•'*The ability to identify uses and sources of material* ' correlated with all the subskills . It achieved the highest correlation with MLCRT (r= .71) and the second highest with 'the ability to recognize similarities and differences' . Its lowest correlation was also with "the ability to reason deductively".

• *The ability to recognize similarities and differences* correlated with all subskills . The highest correlation was also with MLCRT, r = .72, the second highest correlation was with 'the ability to recognize recognize uses and sources of material' Its lowest correlation was also with "the ability to reason deductively".

• *The ability to evaluate strengths of arguments* correlated with all subskills and the highest was also with MLCRT, r = .55 and second highest with 'the ability to recognize similarities and differences. Its lowest correlation was also with "the ability to reason deductively".

The common trend identified in this analysis was that:

• every subscale had the <u>highest</u> correlation with the MLCRT total scores than with each other.
• every subscale had the lowest correlation with the "ability to reason deductively."

Thus it would appear the the *ability to reason deductively.* was the least convergent of all the subskills. Empirically speaking, the basis for inclusion of this subskill in the MLCRT scale was therefore weak.

9.6 The Revised MLCRT

Although the 82 items MLCRT registered an acceptable reliability of .84, the fact that there were a few items with low discrimination power and low correlation with the main scale made it necessary to design a better instrument in terms of validity, reliability and efficiency. Consequently a revised post-hoc MLCRT, renamed the Revised Malay Language Critical Reading Test (RMLCRT) was designed using the same pool of items and subskills of the actual MLCRT.[1] The same standardization sample (comprising 1444 testees) from the actual MLCRT was utilized. In other words, no new test administration was conducted. In the construction of the revised test, RMLCRT, 13 of the weakest items identified were deleted, that is all five items from Subskill 1, Item 14 and 24 from Subskill 2, Items 9,19 and 32 , from Subskill 3, Item 52 from Subskill 4, Item 42 , Item 43 and Item 47 , from Subskill 5 (the ability to recognize bias), and Item 54 from Subskill 6 (the ability to differentiate between facts and opinions). All the items in Subskill 7 to Subskill 10 remained intact. Finally, 65 out of the 82 items of the actual MLCRT were taken to form the RMLCRT which was subsequently analysed using traditional as well as the Rasch analysis.

The new labelling of items and subskills comprising the MLCRT and RMLCRT is shown in Table 9.6. The final test is reproduced in Appendix 33, the translation in Appendix 34 and the answers in Appendix 35.

Table 9.6
Numbering of Items in MLCRT and RMLCRT

MLCRT Items	RMLCRT Items	MLCRT Items	RMLCRT Items
6	1	7	2
8	3	10	4
11	5	15	6
16	7	17	8
18	9	20	10
21	11	22	12
23	13	25	14
26	15	27	16
28	17	29	18
30	19	31	20
33	21	34	22
35	23	36	24
37	25	38	26
39	27	40	28
41	29	44	30
45	31	46	32
48	33	49	34
50	35	51	36
53	37	55	38
56	39	57	40
58	41	59	42
60	43	61	44
62	45	63	46
64	47	65	48
66	49	67	50
68	51	69	52
70	53	71	54
72	55	73	56
74	57	75	58
76	59	77	60
78	61	79	62
80	63	81	64
82	65		

9.7 Distribution of RMLCRT

The distribution of the Revised MLCRT available in Table 9.7, shows the scale to be normally distributed. The mean obtained by the stadardization sample of 1444 was 33.72 with a standard deviation of

9.64. The maximum score and minimum score obtained were 58 and 4 respectively. The median was at the score of 34, while the mode was at the raw score of 32.

Table 9.7
Statistics of the Revised MLCRT Scale

Mean	33.72	Std. error	.257	Median	34.0
Mode	32.000	Std Deviation	9.64	Variance	93.65
KURTOSIS	-.49	S E Kurt	.129	Skewness	-.197
S E Skew	.064	Range .	54.00	Minimum	4.00
Maximum	58.00	Sum	48697.00		

9.7.1 Overall Result of RMLCRT Total Scores by Grade Level

The distribution of the total scores by levels shown in Table 9.8 indicated that, except for Sec 5, there was a progressive increase between the means obtained by Sec 1 to Sec 4 pupils, with the Sec 4 pupils obtaining the highest mean score. This result is expected as the Sec 5 pupils came from the Normal stream only, whereas the Sec 4 pupils came from both the Express and the Normal streams. The standard deviation of the distribution from these pupils showed that the highest deviation came from the Sec 3 pupils followed by the Sec 5 pupils. The least variation was found in the Sec 1 pupils with a standard deviation of 8.9.

Table 9.8
Means and Standard Deviation of RMLCRT Scores by Grade Levels

Levels	Scale Means	Scale Std.Dev	Std Error
Sec 1	31.69	8.90	.47
Sec 2	32.81	9.00	.49
Sec 3	34.43	10.57	.55
Sec 4	36.11	9.31	.57
Sec 5	34.82	10.29	.91

9.7.2   Overall Result of RMLCRT Total Scores by Stream

The RMLCRT total scores of the two streams or course were analysed and the result shown in Table 9.9. The Express stream pupils obtained a mean of 37.54 while the Normal stream pupils obtained a mean score of only 31.19 . The significantly higher RMLCRT scores obtained by the Express stream pupils was expected as these pupils were the better pupils academically.   The variance of responses from the Express stream was larger than that of the Normal stream.

Table 9. 9
Means and Standard Deviation of RMLCRT Scores by Stream

Stream	Scale Means	Scale Std. Dev	Scale Std Error
Express	37.54	9.00	.40
Normal	31.19	8.80	.30

9.7.3   Overall Result of the RMLCRT Total Scores by Gender

An analysis of the RMLCRT scale by gender was also attempted and the result is found in Table 9.9. From the table it could be seen that the performance of the girls in critical reading was higher: the girls obtained a mean RMLCRT score of 35.44 while the boys obtained only a mean score of 31.87. The standard deviation of the score distribution of the boys and girls is very close, at 9.56 and 9.48 respectively.

Table 9.10
Means and Standard Deviation of RMLCRT Scores by Gender

Gender	Scale Means	Scale Std. Dev	Scale Std Error
Boys	31.87	9.56	.36
Girls	35.44	9.48	.36

9.8 Characteristics of RMLCRT Items

Since the revised scale consists of items taken from the actual MLCRT, minus the weak items, the remaining items of this revised scale are psychometrically sounder and had stronger internal consistency than that of the former scale. The item facilities, item discrimination, standard deviation and correlation of the items with the revised scale are presented in Appendix 36.

According to this traditional method of analysis, the facility indices of the 65 items ranged from .21 to .89 with a mean index of .499 which shows the items to be of moderate difficulty as a whole. Its discrimination power, calculated using the point biserial correlation, ranged from .14 to .58, much better than that of MLCRT where a few items were shown to be weak discriminators.

9.9 Analysis of RMLCRT Using the Rasch Analysis

In line with one of the objectives of this study which is to find the norm of critical reading ability of Singaporean Malay pupils, a model of critical reading *ability* taking into account the *difficulty of the items* in the test itself was considered. The Rasch Model was chosen as its item selection technique is purported to be sample-free as well as item-free; that is, the scores which result from Rasch analysis are not a function of the items used to construct the tests or of the samples used to calibrate the instrument (Hashway, R.M. 1978). The result from this analysis will therefore be more generalizable than that using the traditional item analysis technique.

The Rasch model belongs to a class of test construction models called logistic models which assume that items or subjects are assignable to particular locations on a unidimensional latent trait dimension. The model provides a particular mathematical statement (the log likelihood function) relating the probability with which a particular subject will experience success relative to a particular item in terms of the location of the subject as well as the items on the latent trait dimension. A computer program RASCAL was used to analyse the data using the Rasch model.

In the result obtained, the fit mean square represents a measure of the degree to which the observed item characteristic function conforms to the model, the larger the fit mean square obtained for a particular item, the more the item characteristic curve departs from the Rasch logistic function. The smaller the fit mean square the greater the

correspondence between the observed characteristic function and the function postulated by the Rasch model.

Rasch test scores are referred to as true scores. This means that an equation can be written between observed Rasch test scores and the true scores. The standard error associated with a particular measurement is a measure of the error inherent in that measurement. True scores are conceptualized as Rasch measurements or equivalently, positions on the same dimension as the observed Rasch measurement, which are determined without error. Because such error-free measurement exists in theory alone, it is necessary to associate the observed Rasch measurement with a corresponding true score and error term (Hashway R.M. 1978).

In theory the Rasch test score is unlimited, any number between negative infinity and positive infinity can be valid logarithmic Rasch scores. Since Rasch test scores are interval test measurements various transformations can be performed from the test scores. Tranformation to the test scores which map Rasch scores onto scales currently used could be performed, but these transformations do not change the interval character of the Rasch scale.

In the present study the ability scale was transformed into Standardized T-Scores with a mean of 50 and a standard deviation of 10. All the items have the same discrimination parameter, and all have a guessing parameter of 0 . The programme eliminated items with zero variance and examinees with zero or perfect number scores.

Table 9.11 shows the parameter estimates produced by Rasch analysis when ability standardization was selected. Here the final estimates of 65 items of RMLCRT were computed and sorted according to the order of difficulty of the items on the scale. Thus Item 43 was the easiest while Item 22 was found to be the most difficult. The average difficulty of all the items was 0.15 in Theta metric and 51.5 in scaled score metric. The discrimination of the scale was fixed at .511 for all items .

Table 9.11
Final Parameter Estimates for RMLCRT
Sorted in Item Difficulty Order

Item	Discrim	Rasch Item Diff	SE(b)	Chi Sq.	df	Scaled Diff
43	0.511	-1.301	0.063	154 531	19	37
18	0.511	-1.283	0.063	120.318	19	37
26	0.511	-1.152	0.062	82.949	19	38
41	0.511	-0.950	0.060	176.479	19	40
15	0.511	-0.938	0.060	43.549	19	41
47	0.511	-0.884	0.060	143.960	19	41
55	0.511	-0.835	0.060	87.934	19	42
50	0.511	-0.659	0.059	33.379	19	43
8	0.511	-0.639	0.058	35.749	19	44
46	0.511	-0.627	0.058	112.056	19	44
45	0.511	-0.608	0.058	161.422	19	44
2	0.511	-0.600	0.058	73.434	19	44
54	0.511	-0.534	0.058	35.782	19	45
9	0.511	-0.499	0.058	69.556	19	45
20	0.511	-0.491	0.058	78.356	19	45
53	0.511	-0.472	0.058	36.443	19	45
5	0.511	-0.438	0.058	35.329	19	46
56	0.511	-0.366	0.057	40.758	19	46
31	0.511	-0.362	0.057	41.203	19	46
33	0.511	-0.313	0.057	87.769	19	47
27	0.511	-0.227	0.057	36.671	19	48
19	0.511	-0.219	0.057	89.332	19	48
44	0.511	-0.182	0.057	40.777	19	48
64	0.511	-0.100	0.057	12.608	19	49
63	0.511	-0.082	0.057	28.776	19	49
3	0.511	-0.015	0.057	107.931	19	50
16	0.511	-0.000	0.057	10.457	19	50
24	0.511	0.048	0.057	21.730	19	50
60	0.511	0.063	0.057	27.055	19	51
10	0.511	0.074	0.057	24.753	19	51
39	0.511	0.077	0.057	20.931	19	51
62	0.511	0.089	0.057	43.797	19	51
4	0.511	0.126	0.057	137.064	19	51
61	0.511	0.170	0.057	30.416	19	52
59	0.511	0.189	0.057	66.739	19	52
17	0.511	0.215	0.057	61.540	19	52
42	0.511	0.274	0.057	38.519	19	53
14	0.511	0.360	0.057	30.368	19	54
34	0.511	0.379	0.057	57.101	19	54
6	0.511	0.386	0.057	171.853	19	54

:em	Discrim.	Rasch Item Diff	SE(b)	Chi Sq.	df	Scaled Diff
---	---	---	-----	-------	----	------
¦5	0.511	-0.608	0.058	161.422	19	44
¦6	0.511	-0.627	0.058	112.056	19	44
¦7	0.511	-0.884	0.060	143.960	19	41
¦8	0.511	1.008	0.060	63.812	¦9	60
¦9	0.511	0.821	0.059	67.369	19	58
¦0	0.511	-0.659	0.059	33.379	19	43
¦1	0.511	0.458	0.057	103.615	19	55
¦2	0.511	0.526	0.058	22.210	19	55
¦3	0.511	-0.472	0.058	36.443	19	45
¦4	0.511	-0.534	0.058	35.782	19	45
¦5	0.511	-0.835	0.060	87.934	19	42
¦6	0.511	-0.366	0.057	40.758	19	46
¦7	0.511	0.971	0.060	142.225	19	60
¦8	0.511	0.511	0.057	74.267	19	55
¦9	0.511	0.189	0.057	66.739	¦9	52
¦0	0.511	0.063	0.057	27.055	19	51
¦1	0.511	0.170	0.057	30.416	¦9	52
¦2	0.511	0.089	0.057	43.797	19	51
¦3	0.511	-0.082	0.057	28.776	¦9	49
¦4	0.511	-0.100	0.057	12.608	19	49
¦5	0.511	0.853	0.059	90.648	¦9	59

₁

In the table the Pearson Chi-square lack of fit statistics are also presented along with their degrees of freedom which is fixed by the programme at a maximum of 20 groups. High and statistically significant chi-square suggested that some items were not adequately described by the Rasch model.

Table 9.12 shows the Theta scale of the pupils' ability in critical reading in terms of the number of their correct responses to the RMLCRT. The Rasch ability scale is also transformed into percentile and scaled scores (T-score). A scaled item score of 50 fitted the theta value Of .03 on the ability scale.

The scaled score at the last column in the tables gives the scaled difficulty of the items in relation to the ability of the pupils. Thus the 40 pupils with average ability (Theta 0.03) were on the 61st percentile. A scaled item score of 50 fitted the theta value of .03 on the ability scale.

The test characteristic curve of the RMLCRT scale calculated using ability (Theta) as the basis, is given in Figure 9.6. The curve reveals a positive relationship between ability and the difficulty of the test. For example a person with an ability measure of -1.0 had more than 50 % chance of obtaining 25% of the items correct whereas a person with estimated ability of 2.0 had more than 50% probability of answering 75% of the items correctly.

Figure 9.7 shows the Item by Pupil distribution map where the percentage of items and the percentage of examinees were matched in the same scale based on ability . The distribution shows a good fit between item difficulty and pupil's ability. The average ability according to Theta metric is 0.15 with S.D. of .74 while the same trait measured by T-Score gives a figure of 51.5 with S.D. of 7.4.

Table 9.12
Raw Score Conversion Table of RMLCRT

Number Correct	(Theta) Ability	Std. Error	Freq- uency	Cum Freq	Percen- tile	Scaled Score
1	-4.85	1.164	1	199	14	2
2	-4.03	0.831	2	201	14	10
3	-3.53	0.686	4	205	14	15
4	-3.18	0.601	5	210	15	18
5	-2.89	0.543	2	212	15	21
6	-2.66	0.501	4	216	15	23
7	-2.45	0.469	5	221	15	25
8	-2.27	0.443	4	225	16	27
9	-2.11	0.423	4	229	16	29
10	-1.96	0.405	5	234	16	30
11	-1.83	0.391	8	242	17	32
12	-1.70	0.378	13	255	18	33
13	-1.58	0.367	22	277	19	34
14	-1.46	0.358	25	302	21	35
15	-1.35	0.350	30	332	23	36
16	-1.25	0.343	32	364	25	38
17	-1.15	0.336	45	409	28	39
18	-1.05	0.331	29	438	30	39
19	-0.96	0.326	42	480	33	40
20	-0.87	0.321	42	522	36	41
21	-0.78	0.317	40	562	39	42
22	-0.69	0.314	36	598	41	43
23	-0.61	0.311	34	632	44	44
24	-0.52	0.308	30	662	46	45
25	-0.44	0.306	30	692	48	46
26	-0.36	0.304	29	721	50	46
27	-0.28	0.303	30	751	52	47
28	-0.20	0.301	33	784	54	48
29	-0.12	0.300	29	813	56	49
30	-0.04	0.299	35	848	59	50
31	0.03	0.299	40	888	61	50
32	0.11	0.299	59	947	66	51
33	0.19	0.299	50	997	69	52
34	0.27	0.299	50	1047	72	52
35	0.34	0.300	42	1089	75	53
36	0.42	0.300	43	1132	78	54
37	0.50	0.302	47	1179	82	55
38	0.58	0.303	60	1239	86	56
39	0.66	0.305	36	1275	88	57
40	0.74	0.307	40	1315	91	57
41	0.82	0.309	38	1353	94	58
42	0.91	0.312	53	1406	97	59
43	0.99	0.315	35	1441	99	60
44	1.08	0.318	30	1471	99	61
45	1.17	0.322	29	1500	99	62
46	1.26	0.327	25	1525	99	63
47	1.36	0.332	26	1551	99	64
48	1.45	0.338	17	1568	99	65
49	1.55	0.344	23	1591	99	66

Number Correct	(Theta) Ability	Std. Error	Freq- uency	Cum Freq	Percen- tile	Scaled Score
50	1.66	0.351	13	1604	99	67
51	1.77	0.360	12	1616	99	68
52	1.88	0.369	5	1621	99	69
53	2.01	0.380	8	1629	99	70
54	2.13	0.392	6	1635	99	71
55	2.27	0.407	6	1641	99	73
56	2.42	0.424	1	1642	99	74
57	2.59	0.445	0	1642	99	76
58	2.77	0.471	1	1643	99	78
59	2.98	0.503	0	1643	99	80
60	3.21	0.545	0	1643	99	82
61	3.50	0.603	0	1643	99	85
62	3.86	0.688	0	1643	99	89
63	4.35	0.833	0	1643	99	94
64	5.18	1.165	0	1643	99	102
65	*****	*****	0	1643	99	***

FIGURE 9.6

RMLCRT Characteristic Curve
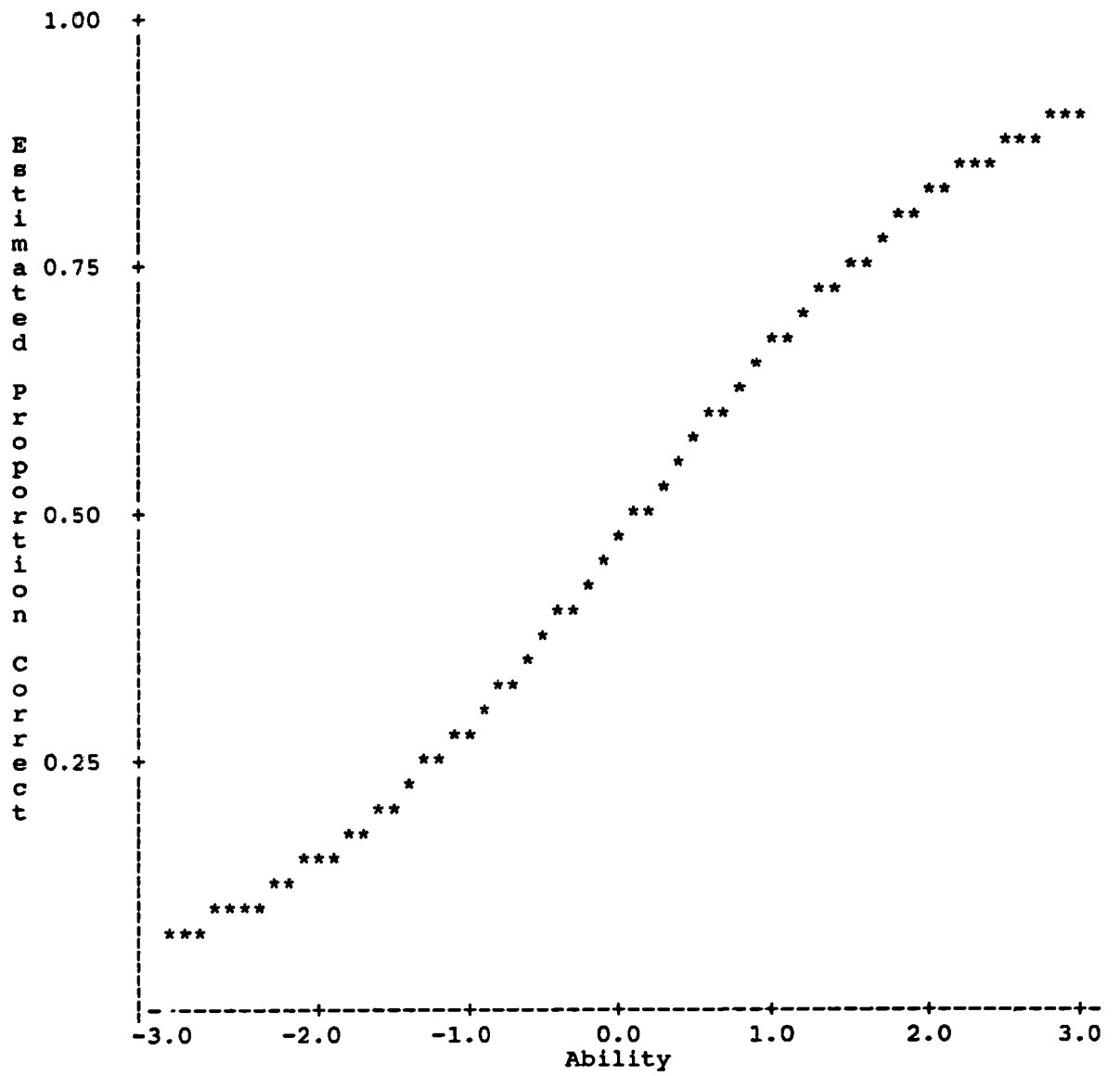
FIGURE 9.7

RASCH ITEM BY PERSON DISTRIBUTION MAP

```
                                                       Numbers of
        ITEMS                      PERSONS          Items / People

                    +  -4.0  +                         0  /    1
                    |  -3.8  |                         0  /    0
                    |  -3.6  |                         0  /    4
                    |  -3.4  |                         0  /    0
                    |  -3.2  |                         0  /    5
                    +  -3.0  +                         0  /    0
                    |  -2.8  |                         0  /    2
                    |  -2.6  |                         0  /    4
                    |  -2.4  |                         0  /    5
                    | r2.2  |#                         0  /    8
                    +  -2.0  +                         0  /    5
                    |  -1.8  |#                        0  /    8
                    |  -1.6  |##                       0  /   35
                 ##|  -1.4  |####                      1  /   55
                ###|  -1.2  |#####                     2  /   77
                ###+  -1.0  +#####                     2  /   71
                ###|  -0.8  |######                    2  /   82
          ########|  -0.6  |#######                    6  /  100
         #########|  -0.4  |####                       7  /   59
           ######|  -0.2  |#####                       4  /   92
      ###########+   0.0  >+#####                       8  /   75
         #######|<   0.2  |##########                  5  /  159
      ##########|    0.4  |#####                       8  /   85
        ########|    0.6  |#########                   5  /  143
          #####|    0.8  |####                         4  /   78
        #######+   1.0  +########                      5  /  118
            ###|    1.2  |####                         2  /   54
             ##|    1.4  |###                          1  /   43
             ##|    1.6  |##                           1  /   36
             ##|    1.8  |#                            1  /   17
                    +   2.0  +#                         0  /    8
             ##|    2.2  |#                            1  /   12
                    |    2.4  |                         0  /    1
                    |    2.6  |                         0  /    0
                    |    2.8  |                         0  /    1
                    +   3.0  +                          0  /    0
                    |    3.2  |                         0  /    0
                    |    3.4  |                         0  /    0
                    |    3.6  |                         0  /    0
                    |    3.8  |                         0  /    0
                    +   4.0  +                          0  /    0

   +----+----+----+----+---------+----+----+----+----+
  20   15   10    5              5   10   15   20
      Percent of                    Percent of
        Items                        Examinees
```
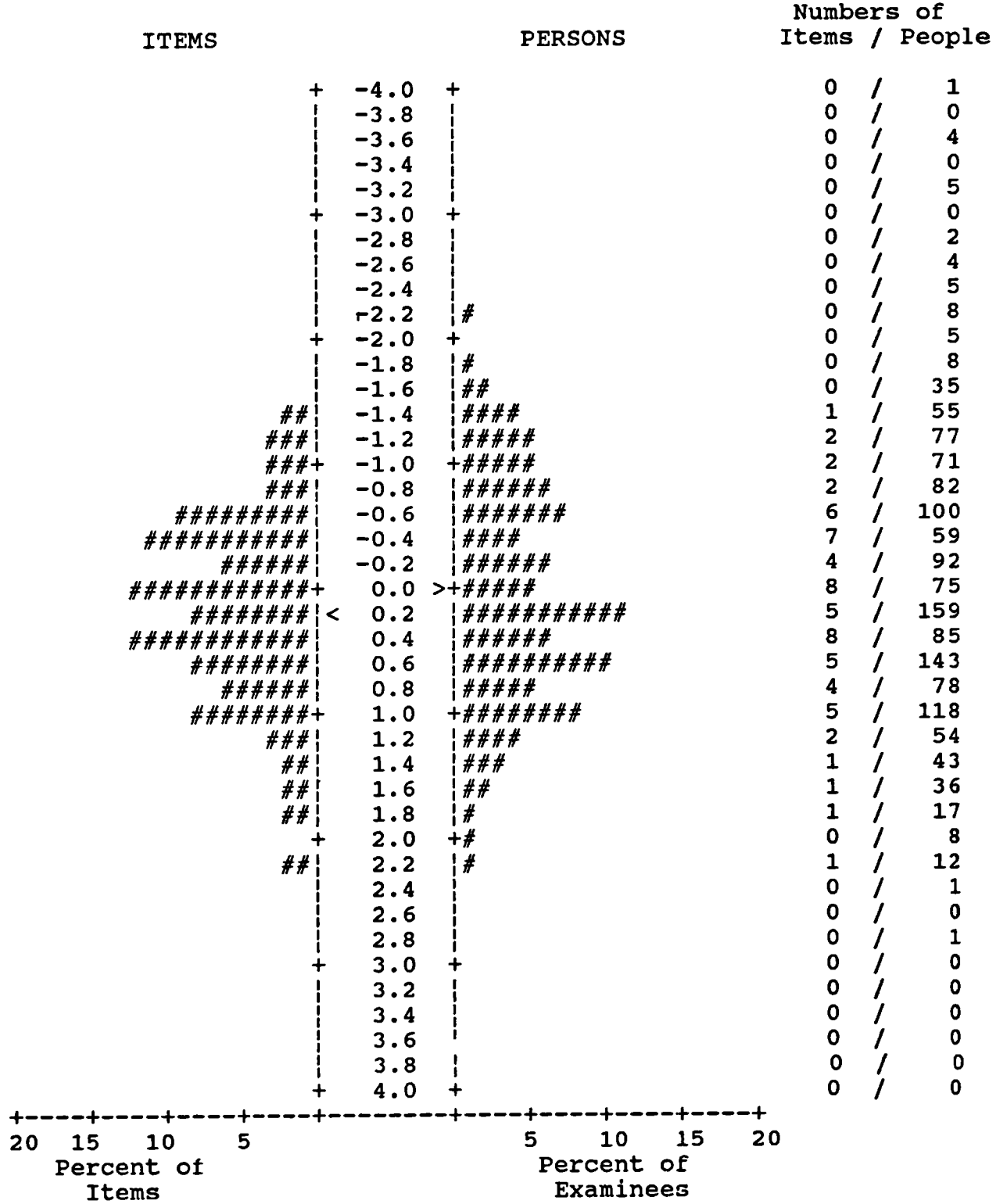
Summary Information:	Average Difficulty	S.D. Difficulty	Average Ability	S.D. Ability
(Theta Metric)	0.15	0.74	0.00	1.00
(Scaled Score Metric)	51.5	7.4	50.0	10.0

9.10 Pupils' Estimated Critical Reading Ability Across Grade Level and Stream

The estimated critical reading ability of the pupils based on Rasch analysis was further sorted into the five grade levels and the two streams, the Express and Normal Pupils. This will give a clearer picture of the respective abilities of the pupils' in each grade level and stream. Table 9.13 summarizes the result.

Table 9.13
Estimated Critical Reading Ability by Stream and Grade Level

Grade Level	Express Rasch Score	Theta	Normal Rasch Score	Theta	Total Rasch Score	Theta
Sec 1	31.51	.008	27.27	-.300	29.05	-.171
Sec 2	35.20	.359	26.24	-.386	30.03	-.071
Sec 3	36.77	.520	28.51	-.192	32.18	.124
Sec 4	35.96	.439	30.47	-.026	33.00	.204
Sec 5	-	-	30.82	-.084	30.82	-.084

The estimated ability of the Sec 1 pupils was the lowest, at -.171 while the Sec 4 pupils were the highest, with a mean estimated ability of .204. The Sec 5 pupils were low in their ability as this level is meant for Normal pupils only. An analysis of variance was performed on the five groups in order to examine whether the differences in abilities were significant. The F-value obtained was 7.42 with 4 degrees of freedom and statistically significant beyond the .001 level.

The ability of the Normal and Express pupils was clearly defined, with the Express pupils having mean estimated ability of .382 compared to the Normal pupils whose estimated ability was only -.219. The differences in ability measured by analysis of variance technique gave an F- value of 109.94 with 1 degree of freedom, significant at .001 level.

The breakdown of the data gave a clear picture of the ranking of the pupils' estimated ability: the abilities of the Express pupils clear exceeded that of the Normal pupils in all grade levels. Thus there was also a consistent pattern of ability with regard to grade level and stream. Pupils in the lower grade level have a lower estimated ability than pupils at a higher grade level, also pupils in the Express stream seems to have higher critical reading ability than those in the Normal stream.

9.11 Subskill Difficulty Based on Rasch Analysis

The outcome of the Rasch Item analysis was then utilized to estimate the difficulty of the nine RMLCRT subskills. The average Rasch Item difficulty and the scaled difficulty of items belonging to each subskill was also calculated. Table 9.14 produced the result, sorted according to the order of difficulty from the easiest to the most difficult subskill.

<center>Table 9.14</center>
<center>Rasch Item Difficulty of Subskills of RMLCRT</center>

Subskills	Mean Rasch Item Difficulty	Mean Rasch Scaled Difficulty
1. The ability to identify simililaries and differences.	-2.28	47.7
2. The ability to evaluate inductive inferences.	-2.15	47.9
3. The ability to identify facts and opinions.	0.09	50.8
4. The ability to evaluate generalizations.	0.19	52.0
5. The ability to evaluate strengths of arguments.	0.19	52.3
6. The ability to identify sources and uses of material.	0.20	52.1
7. The ability to recognize biased statements.	0.31	53.0
8. The ability to identify author's motives.	0.44	54.3
9. The ability to recognize hidden assumptions.	0.93	59.3

Thus, the Rasch analysis indicated that 'the ability to recognize hidden assumptions' was the most difficult item with an average Rasch item difficulty of 0.93, whereas 'the ability to identify similarities and differences' was the easiest subskill with Rasch item difficulty of -2.28. The above order of the difficulty level of the subskills could give some useful pedagogical directions. The easier subskills could be taught first at the lower levels before introducing the more difficult subskill which is not easily attainable by pupils of average ability.

9.12 Reliability of the RMLCRT Scale

The reliability of the RMLCRT or its internal consistency was examined by using Cronbach's Alpha. The Coefficient Alpha value obtained for the RMLCRT was **0.86**, an increase of .02 from that of the actual MLCRT which has an alpha of .84. Using Spearman equal length split-half reliability where the first and second part of the test comprised of 33 and 32 items respectively, the reliability coefficient achieved was **.87**, also an increase of .02 over the original MLCRT. The Alpha for Part 1 was .75 while for the second part it was .73. The result of the reliability analysis is shown in Table 9.15.

Table 9.15
Reliability of the RMLCRT

No of cases	Split -half SPEARMAN	Reliability Coefficient.	Standardised Alpha
1444	.87	.86	.86

Thus the reliability of the RMLCRT scale which is .86 gives evidence of the reliability of the instrument. This reliability coefficient, if interpreted in terms of the percentage of score variance attributable to different sources, means that 86% of the score variance depended on true variance in the critical reading construct measured while 14% might be due to error.

The standard error of measurement of the test (or the standard deviation of the true score) was calculated by using the formula:

$$SEM = SD \sqrt{(1 - R^2)} \quad , \quad \text{where}$$

SD is the standard deviation of the test, and R is the reliability coefficient.

The standard error of the MLCRT obtained by using the above formula was **3.6** . This means that there is a 68% confidence that a pupil's MLCRT scores will fluctuate 3.6 points on either side of their 'true' RMLCRT scores.

9.12.1 Reliability of the RMLCRT by Grade Level

The reliability of the MLCRT by grade level (using the alpha coefficient) ranged from .83 to .89. The lowest reliability recorded was for Sec 1 pupils (alpha = .83) while the highest came from the Sec 3 pupils with reliability coefficient of .88. Using the split-half method the reliability using Spearman Brown's unequal length formula, the coefficient for both parts of the test ranged from .83 to .89. The high reliability coefficient for all the levels shows that the instrument was a good measure of critical reading ability within all the 5 levels. The above result is an improvement over the actual MLCRT where reliability of the scale for the five grade levels ranged from .80 to .86. The result is presented in Table 9.16.

Table 9.16
Reliability of the RMLCRT by Grade Levels

Levels	Cases	Alpha	Split-half
Sec 1	362	.83	.83
Sec 2	332	.83	.84
Sec 3	353	.88	.89
Sec 4	268	.85	.85
Sec 5	129	.87	.88

9.12.2 Reliability of RMLCRT by Stream

An attempt was also made to find out the reliability of the RMLCRT scale for the Normal and Express Stream present in the Malay secondary school population. The result of this procedure produced in Table 9.17 indicated the high reliability of the instrument for for streams. Comparison with the actual MLCRT showed the revised form to be slightly more reliable with small increases in the alpha

coefficients as well as the split-half method using the Spearman Brown formula.

Table 9.17
Reliability of the RMLCRT by Stream

Stream	Cases	Alpha	Split-half
Normal	862	.82	.83
Express	581	.86	.86

The reliability of the instrument among Express stream pupils was higher than that of the Normal stream pupils, the standardized Alpha value for the Express stream being .86 compared to only .82 for the Normal stream.

9.12.3   Reliability of RMLCRT by Gender

The reliability coefficient of the RMLCRT by gender was also calculated and the result is produced in Table 9.18 below. The RMLCRT scale was reliable for both girls and boys, Standardized Alpha = .87. This is an improvement over the actual MLCRT which recorded alpha coefficient of only .84 for girls and .82 for boys.

Table 9.18
Reliability of the RMLCRT by Gender

Gender	Cases	Alpha	Std Alpha
Girls	700	.85	.87
Boys	710	.85	.87

9.13   The Construct Validity of MLCRT

Four types of analysis were utilized to show evidence of the content and construct validity of the RMLCRT. They were:

1.   The result of the expert views and their responses on the MLCRT for evidence of content validity.

2. Item-total correlation to show the internal consistency of the construct.

3. Factor analysis of RMLCRT with selected external variables as evidence of concurrent validity.

4. Factor analysis of all the items of RMLCRT as well as factor analysis of the subskills for evidences of construct validity.

9.13.1 Expert Responses on MLCRT Items

The original MLCRT was validated using a small group of eight Malay language experts from the Ministry of Education, Malay language lecturers of the National Institute of Education and Master-in-Education graduates who are proficient in Malay language.

The experts were asked to respond to the test on an individual basis. One of the experts obtained the highest score of 70 points, exceeding the maximum score of the standardizing sample. Another two of them obtained scores within the 98th percentile while the others all obtained scores above the average of the standardizing sample. Clearly their performances in critical reading was very high, way above the subjects of the present study.

Analysis of the item responses showed a high degree of agreement with the correct answers of the test. Evidence of the 'agreement' was obtained by calculating the percentage of correct responses scoring to the items. Fifteen items showed perfect agreement meaning that all the eight experts scored the same correct answers. In all the other items, except Item 24 and 32, more than fifty percent of the expert responses were in agreement with the correct answers. In 13 items or (15%), the experts were equally divided in their scoring of the correct answer. These 13 items were also identified as weak items through the item analysis technique and subsequently all the disputed and unclear items were discarded in the revised 65 item RMLCRT scale. The detailed expert responses is presented in Append'x 36.

Thus the revised scale has no disputed item at all. In this respect the RMLCRT could be claimed to have a high degree of content validity.

9.13.2 The Internal Consistency of RMLCRT Items

The validity of the RMLCRT was examined through the item-total correlation or the point biserial correlation presented in Appendix 37 which according to Flanagan (1939) is the best index of item validity.

These correlation coefficients between the individual items and the total RMLCRT were all significant beyond .001 level. These correlation matrices were all positive ranging from .14 to .58 showing the items to have internal consistency and measuring at least a common trait. Only six items or 9.2% of the total number of items registered a correlation lower then .15.

From the result of the correlation analysis, evidence that the items of RMLCRT are consistent with the construct of critical reading as measured by the instrument could be established.

9.13.3 The Concurrent Validity of RMLCRT

The strength of correlation between RMLCRT and other external tests and variables thought to have similar characteristics or to be in the same category was used as preliminary evidence of its concurrent validity. The tests which should correlate relatively strongly in tandem with RMLCRT were the cognitive and ability types such as PSLE, Mathematics, Science, Malay and general reading comprehension scores. Tests which are not similar in nature but which would have a degree of relationship with RMLCRT should be of the affective type or the non-cognitive type such as the Critical Thinking Disposition Test. The correlation matrix of the above intercorrelation coefficients based on data from 580 respondents is produced in Appendix 39.

From the correlation coefficient, it could be seen that there was a moderately high correlation (r = .54) between RMLCRT with PSLE a test of general academic ability and general reading comprehension (r= .47). Correlations of MLCRT with Mathematics, Science, English language grades were moderately high. These coefficients indicate the relatively strong relationship between RMLCRT and cognitive variables. Compared with an affective measure, like the CTDI, a marked differrence was seen: Correlation between RMLCRT and CTDI was only .18 even though it was significant beyond .001 level.

Following this, a more robust procedure, the Varimax rotated factor analysis was then conducted using the RMLCRT along with other selected tests and variables, to look into the internal loadings of RMLCRT in relation with these other external variables. The result is presented in Table 9.19.

Twelve variables including RMLCRT were factor analysed to try to examine the common trait or traits. Only factors having latent roots or eigenvalues greater than 1 were considered. Using the Principal

Component Analysis and then the Varimax rotation procedure, four factors emerged with eigenvalues above 1. The first factor extracted had an eigenvalue of 4.11 and accounts for 34.2% of the variance. The second factor had an eigenvalue of 1.9 and recorded 15.9% of the variance. Factor 3 and 4 had extracted 8.8% and 8.5%of the variance respectively. Altogether the four factors extracted 67.4% of the variance.

The first factor loaded on variables and tests which are related to cognitive factors such as PSLE (.89), Stream (-.81, favouring the Express stream), PSLE Mathematics (.81) PSLE Science (.78), and PSLE English (.69).

The second factor extracted was a group of variables which were related to Malay Language, that is reading comprehension, RMLCRT, Malay Language competency in PSLE and more Malay language (less English) home background.

The third factor explaining 8.8% of the variance loaded on two variables related to pupils socio-economic status - mother's and father's education. The last factor, factor 4 had only one variables which is independent of other variables, the Critical Thinking Disposition of the pupils.

The important finding is that critical reading represented by RMLCRT clustered together with reading comprehension and language test which has Malay language as the common factor. But the RMLCRT also had some common traits with general ability tests. It is certainly under different classification as and critical thinking disposition and socio-economic factors such as parent's educational level. It could therefore be posited that the RMLCRT has convergent validity with reading tests and Malay language variables but it has dicriminant validity with CTDI and socio-economic variables.

Table 9.19
Extraction of Variables and Tests Using Varimax Rotation

Variables	Factor 1	Factor 2	Factor 3	Factor 4
RMLCRT	.43	.56	-	-
PSLE	.89	-	-	-
PSLEML	.46	-	-	-
PSLEENG	.69	-	-	-
PSLESC	.78	-	-	-
PSLEMATH	.81	-	-	-
COMPRE		.76	-	-
CTDI	-	-	-	.90
BILINGUAL	-	.48	-	-
STREAM	-.81	-	-	-
M-EDN	-	-	.85	-
F-EDN	-	-	.88	-

9.13.4 Factor Analysis of Subskills of RMLCRT.

A factor analysis of the subskills of RMLCRT was also attempted to show the underlying nature of the latent trait, which will give an indication of the construct validity of the skills underlying critical reading. The result is shown in Table 9.20. The nine subskills recorded high correlations with the total scores of RMLCRT. The correlation matrix ranged from .24 to .75.

Table 9.20
Factor Matrix of Nine Subskills of RMLCRT

Subskills	Factor 1
Inference	.55
Generalization	.42
Hidden Assumptions	.50
Detecting Bias	.60
Facts and Opinion	.77
Author's Motive	.69
Similarities and Differences	.74
Strength of Arguments	.60

The Principal Factor Analysis and the Varimax Rotation for factor or latent-trait extraction was performed on the 9 subskills of both the RMLCRT. These subskills were utilized as item clusters in a factor analysis procedure which tried to examine the underlying trait of critical reading ability. The criteria for the number of factors to be extracted follow the Kaiser's criterion where only factors having latent roots or eigenvalue greater than 1 will be considered.

Using the Principal Component Analysis of the RMLCRT, only one factor emerged with eigenvalue above 1, explaining 39.8% of the variance. Table 9.20 presents the result which shows that all the nine subskills clustered into one factor and having a common latent trait which is critical reading ability.

9.13.5 Factor Analysis of all 65 Items of RMLCRT

Another more detailed analysis to examine the construct validity of the instrument, RMLCRT could be attempted through factor analysis of all the 65 items. In the first instance the items were subjected to the principal component analysis where a complex array of patterns and factors was obtained. Altogether 23 factors were extracted which explains 55.7% of the variance. Subsequent rotation of the factors did not lessen the complexity of the factors obtained. Therefore it was decided to restrict the number of orthogonal factors to only nine, in line with the number of subskills that the items were purported to comprise of. The result of this rotated factor analysis, although still complex and vague was interpretable to some extent. Since the exercise was only exploratory, an attempt to interpret the data was made. The outcome is shown in Table 9.21.

The nine factors obtained explained only 31.2% of the variance. The first factor loaded on 11 items from 5 subskills with 4 items requiring 'the ability to identify similarites and differences, 3 items belonging to the ability to evaluate arguments, and 1 item each in recognising author's motive and bias in statements. For simplicity, the first factor could be regarded as centering on a combination of items specific to making comparison of facts and arguments.

The second factor had an eigenvalue of 1.1 and recorded 10.5% of the variance. It extracted a group of items which were related to skills in logical reasoning such as inference-related abilities, the ability to form and evaluate generalizations and the ability to recognise the author's motive. This factor could be identified as the inferential and logic related type.

Table 9.21

Rotated Nine Factor Matrix of RMLCRT Items

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
54 (mat)	.67								
53 (mat)	.64								
55 (sim)	.61								
56 (sim)	.57								
62 (str)	.53								
63 (str)	.50								
46 (sim)	.48								
50 (sim)	.46								
64 (str)	.46								
51 (mot)	.36								
31 (bias)	.35								
18 (inf)		.61							
26 (mot)		.60							
15 (inf)		.59							
9 (gen)		.57							
27 (mat)		.43							
24 (gen)		.38							
8 (bias)		.31							
11 (mot)		.29							

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
41 (fact)	.31		.65						
43 (fact)	.33		.58						
47 (sim)	.45		.48						
45 (fact)			.47						
42 (fact)			.41						
44 (fact)			.38						
33 (bias)			.30						
21 (gen)				.58					
14 (gen)				.50					
25 (gen)				.47					
13 (gen)				.45					
4 (inf)				.38					
1 (inf)				.33					
5 (inf)				.33					
7 (inf)				-.29					
3 (inf)				.29					
49 (sim)				.28					
29 (bias)					.67				
30 (bias)					.50				
28 (bias)					.45				
16 (mot)					.38				
2 (inf)					.37				
23 (mot)					.36				

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Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
38 (fact)						.47			
48 (mot)						.43			
40 (fact)						.42			
37 (hid)						.37			
52 (mot)			.29			.29			
39 (fact)			.24			.27			
60 (mat)							.52		
58 (mot)							.49		
61 (mat)							.49		
22 (mat)							.30		
17 (mat)							.29		
10 (gen)							.26		
65 (str)								-.37	
34 (hid)								.36	
32 (bias)								.33	
19 (inf)								.33	
20 (inf)								.32	
12 (fact)								.31	
36 (hid)								.30	
57 (mot)									.53
59 (mat)									-.40
7 (inf)									-.35
35 (hid)									.32

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The third factor quite clearly loaded mostly on items related to the identification of facts and opinions. The pattern of loading of the fourth factor was quite clear; it loaded on items related to logical inference and generalizations. The fifth factor mostly loaded on items on the identification of bias and author's motives. Factor six also loaded on items related to identification of facts and opinions, and author's motives. Factor seven mainly clustered around the ability to identify textual materials. The last and second last factors were not clear, loading on several different subskills.

Thus in spite of the lack of perfect matching between items and subskills, some form of clustering could be observed. The anchor items of most of the factors could be identified as belonging to some specific subskill. Examples are factor 7 on textual materials, factor 5 on bias, factor 2 and 4 on inference and generalization, factor 3 on facts and opinions and factor 1 on comparing statements and arguments.

This result alone, however, did not give sufficient evidence of the validity of the items within each subskills, but if the result of factoring the subskills was also taken into consideration, a more positive picture emerged. It is fair to suggest then that the items did measure critical reading skills, but the skills could not be classified in neat clusters of subskills or dimensions; rather the skills were grouped under one main dimension or trait which is critical reading ability.

9.14 The Final Exploratory Model of the Construct of Critical Reading-Thinking Ability

According to the exploratory model of critical reading-thinking ability (refer to Chapter 6), critical reading was posited to consist of ten subskills grouped under two dimensions, the core critical reading and the logic-oriented dimension. Under the core critical reading dimensions six subskills were identified; but only four subskills were included under the logic-related dimension. Subsequently in the process of test development and refinements, one subskill, 'the ability to reason deductively' was dropped from the model.

Therefore in the final model (presented in Figure 9.8), only nine of the subskills remain.
- the ability to evaluate inductive inferences
- the ability to evaluate the soundness of generalizations,

- the ability to recognize hidden assumptions.
- the ability to identify bias in statements,
- the ability to recognize author's motive,
- the ability to identify fact or opinion,
- the ability to identify sources and relevancy of materials,
- the ability to recognise similarities and differences,
- the ability to evaluate strength of arguments.

Then further analysis was performed in order to explore the construct validity of the test which purports to measure critical reading ability. The findings through factor analysis of all the items failed to reveal a perfect match of item-subskill congruency, and to the existence of two dimensions of critical reading ability as thought out in the initial model; but sufficient evidence of the validity of the RMLCRT itself was indicated through other procedures. Thus in the final model presented in Figure 9.14, all the nine remaining subskills are purported to have one common dimension or trait, the critical reading - thinking ability.

Figure 9.8
THE FINAL EXPLORATORY MODEL OF THE CONSTRUCT OF CRITICAL READING-
THINKING ABILITY

Input from society in the form of background knowledge, experiences and values	Text related features

General Ability	Critical Thinking Disposition	Reading compre-hension ability

CRITICAL READING-THINKING ABILITY

Critical Reading Skills
- inductive reasoning
- evaluating generalizations
- evaluating assumptions
- detecting bias, contradictions
- evaluating soundness of arguments
- recognizing author's motive
- recognizing similarities & differences
- recognizing uses and sources of textual materials
- evaluating the strength of arguments

9.15 Summary of Findings and Conclusion

Initially the 82-item MLCRT was administered using a representative sample of 1444 pupils from five grade levels, that is Secondary 1 through Secondary 5 in twelve secondary schools. Both the Express and the Normal stream pupils were included in the study and their proportion in the distribution was almost similar to that in the school population of pupils taking Malay language in Singapore.

Although the quality of most of the items of MLCRT had been found to be acceptable, based on the established criteria of item difficulty, item discrimination and item-scale correlations, a small number of items were still found to be weak in terms of discrimination or correlation with the main scale.

Subsequently the scale was revised in a *post hoc* manner by discarding seventeen of the weakest items, leaving only 65 of the best items for the RMLCRT as it was called. The RMLCRT was analysed using the Rasch model where it was possible to estimate individual pupils' ability in critical reading against the Rasch scale. The Rasch item difficulty was also calculated and matched against pupils' ability. The Rasch scale was then transformed into standard scores, the T-scores. Hence the raw score equivalent of the RMLCRT could be interpreted in terms of Rasch scale as well as the traditional scale.

Several types of validity studies were conducted to show the content, concurrent and construct validity of the test. The content validity of the items was empirically tested, using the test responses of the experts. From this exercise disputable items were deleted, so that the RMLCRT was free of disputable items. The face validity of the items was earlier established, using the trial instruments which were found to be free of any intrinsic bias.

The concurrent validity study of the RMLCRT was conducted using correlation measures and factor analysis procedures utilizing all the items as well as the nine remaining subskills. The result provides evidence of the existence of a construct, critical reading ability separate from other tests of ability as well as of critical thinking disposition. The RMLCRT has convergent validity with reading comprehension and other tests of the cognitive type, but it has discriminant validity with other measures of attitude or disposition.

Through factor analysis it was revealed that the subskills grouped into one main factor which explains 39.8% of the variance in critical

reading ability. This factor was identified as the core critical reading component which comprises the ability to make generalizations, the ability to make inferences, the ability to recognize hidden assumptions, the ability to differentiate between facts and opinions, the ability to identify uses and relevancy of materials, to differentiate between similarities and differences, the ability to identify the author's motive, the strength of arguments and the ability to recognize bias.

However, a factor analysis of all the 65 items of RMLCRT did not show perfect congruency of subskills and the items it was supposed to comprise. Vague indications of the presence of the trait clustering in line with the subskill categorization was detected. The finding in this study, is therefore, in line with that of Worden's (1980) who found no empirical basis for further subdivision of the critical reading skill. Further research in this area will be needed to confirm the result.

Thus the main line of inquiry on the construct validity of the RMLCRT was examined using several other criteria, internal consistency or homogeneity, relationship of RMLCRT with other tests and variables, and expert judgements. Positive results were obtained which indicate the existence of the construct as measured by the RMLCRT. It can therefore be concluded fairly certainly that the RMLCRT has fulfilled the main criterion of a valid and reliable test for the population of Malay pupils in secondary schools in Singapore.

Footnote

(1) conducted on the advice of the examiners.

CHAPTER 10

RESULTS OF THE ANALYSIS OF THE CRITICAL THINKING DISPOSITION INVENTORY

10.1 Introduction

The results of the norming and standardization of the Critical Thinking Disposition Inventory are presented in the following manner: The description of the sample for the norming of the CTDI will be presented first, after which the central distribution of the scale. Then the analysis of the CTDI items will be discussed in relation to the question of validity of the instruments. Finally, the reliability of the instrument as a whole and by grade level will be established.

10.2 Administration of the CTDI

The CTDI was administered on a class basis by teachers teaching the Malay Language in the schools who were briefed on the test administration with regard to the time, the scoring and the collection of the tests. The time given for the scoring of the test was half an hour, scoring of the test must be done on the test itself, and pupils were asked to answer the questions as truthfully as possible. In addition the testees were assured that their responses would be confidential.

Prior to the scoring of the responses, the answers were checked for possible inconsistencies. Answers which show a particular pattern of responses, such as having the same responses for all the items (showing that the testees were not reading, or were not responding truthfully) were discarded. The same was done for incomplete responses. This is to ensure that only responsible answers were selected for the study.

10.3 Sample Distribution for CTDI Standardization

The sample pupils for the standardization of the CTDI were all secondary school pupils taking Malay as a Second language from the same twelve secondary schools utilised for the standardization of the Malay Language Critical Reading Test. These included Sec 1 through Sec 5 pupils from the Express and Normal streams, except for Sec 5 where only the Normal stream is available. A total of 1024 cases were found suitable for this sub-study, with 38% of them coming from the Express stream and 62% coming from the Normal stream. The proportion of the Express stream pupils was

slightly more than the population of Malay pupils in the Express stream at large. Another important feature to mention is the smaller number of Sec 4 pupils in the Normal stream compared to the other classes.

The percentage distribution of the CTDI sample by classes and stream is presented in Figure 10.1. and Table 10.1 respectively. Altogether 634 (or 62% of the sample) come from the Normal Stream compared to 389 or 38% from the Express Stream. This sample is also quite close to the Malay student population in secondary school where the ratio between Express and Normal stream is 2:3.

Figure 10.1
Percentage of CTDI Sample By Grade Level and Stream
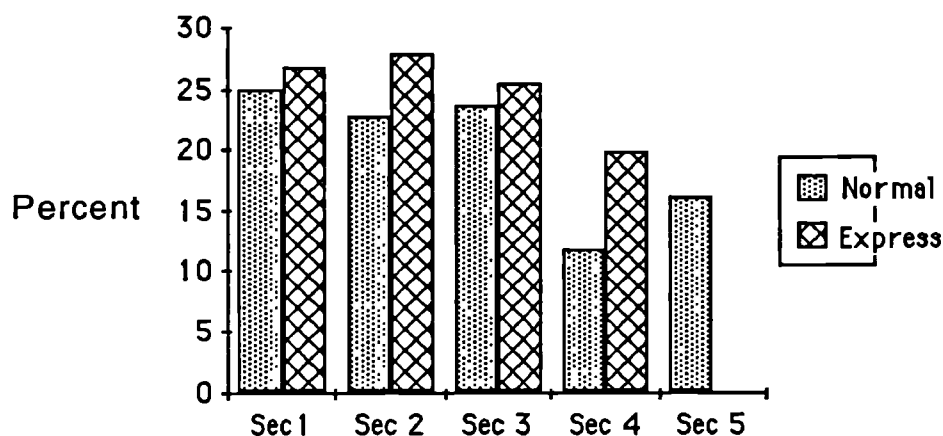
Table 10.1
Percentage Distribution of CTDI Sample by Grade Level and Stream

Levels	Normal		Express	
	Number	Percent	Number	Percent
Sec 1	159	25.1%	104	26.7%
Sec 2	145	22.9%	108	27.8%
Sec 3	151	23.8%	99	25.4%
Sec 4	76	12.0%	78	20.1%
Sec 5	103	16.2%	-	-
Total	634	62.0%	389	38.0%

The gender distribution of the sample is shown in Figure 10.2. In the Express stream, the percentage of girls (53.78%) exceeded that of the boys (46.2%); while in the Normal stream the opposite is true with 55.9% boys and 44.9% girls (26 subjects did not state their gender). In the actual school population there are also fewer Malay boys in the Express than the Normal stream.

Figure 10.2
Percentage of CTDI Sample By Grade Level and Gender
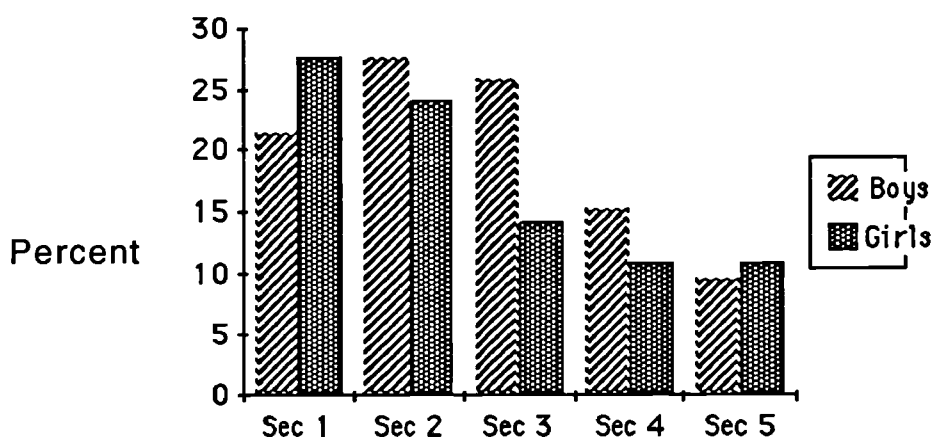
Table 10.2
Frequency Distribution of CTDI Sample By Grade Level and Gender

Levels	Boys	Girls
Sec 1	111	133
Sec 2	143	116
Sec 3	134	69
Sec 4	79	53
Sec 5	50 9.7%	53 12.5%

The frequency distribution by grade level, gender and stream is shown in Figure 10.3 and Table 10.3. In the Express Stream a total of 171 (33.1%) are boys compared to 199 (41.4%) who are girls. Of those in the Normal stream, 66.9% are boys. These numbers exclude

the 26 pupils who did not reveal their gender, but nevertheless were included in the norming of the instrument.

Figure 10.3
Frequency distribution of CTDI Sample By Grade Level and Gender and Stream
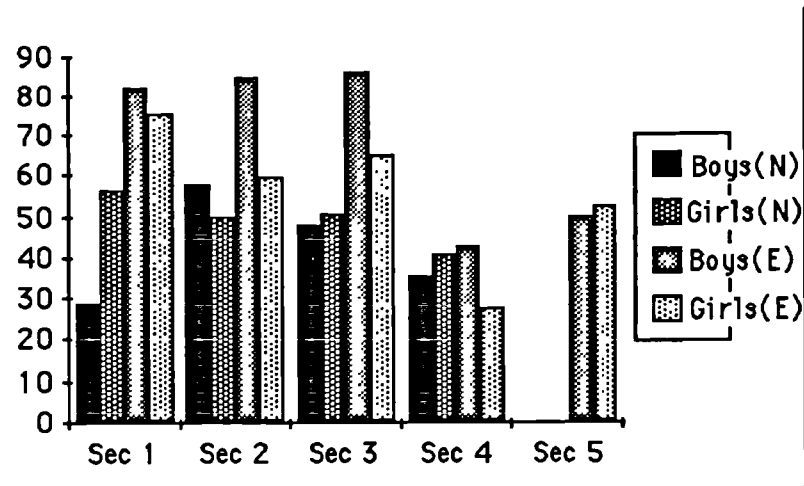
Table 10.3
Frequency distribution of CTDI Sample By Grade Level and Gender and Stream

Levels	Express		Normal	
	Boys	Girls	Boys	Girls
Sec 1	29	57	82	76
Sec 2	58	50	85	60
Sec 3	48	51	86	65
Sec 4	36	41	43	28
Sec 5	-	-	50	53
Total	171 (46.22%)	199 (53.78%)	346 55.10%)	282 (44.90%)

10.4   Distribution of the CTDI Scale

The CTDI consists of 38 items which are statements positively stated and scaled to measure disposition towards critical thinking. and reading. A four-point scale which represents the frequency of occurrence or the actualization of critical thinking behaviour as applied to reading was constructed for each statement. Each statement is followed by the phrase 'all the time', 'always', 'sometimes' and 'never'. The CTDI instrument is found in Appendix 23, while the English version is inserted in Appendix 24.

The percentage frequency of the original keyed-in responses is produced in Appendix 4, where 'A' represents 'all the time' , 'B' represents 'always' , 'C' represents 'sometimes' and 'D' represents 'never'. In the CTDI scale 'all the time' is allocated 3 points, 'always' is allocated 2 points, 'sometimes' is allocated 1 points and 'never' is given '0' point. Thus the highest possible score that could be obtained is 114. Figure 4 gives a histogram of the distribution of the CTDI Total scale as responded by the sample.

Figure 10.4
Histogram of CTDI Distribution

1	5	
3	10	*
5	15	*
7	20	* *
18	25	* * * * *
34	30	* * * * * * * * *
62	35	* * * * * * * * * * * * * * *
112	40	* *
125	45	* *
170	50	* *
137	55	* *
138	60	* *
108	65	* *
37	70	* * * * * * * * * .
21	75	* * * * *
17	80	* * * *
13	85	* * *
7	90	* *
5	95	*
2	100	*
2	105	*
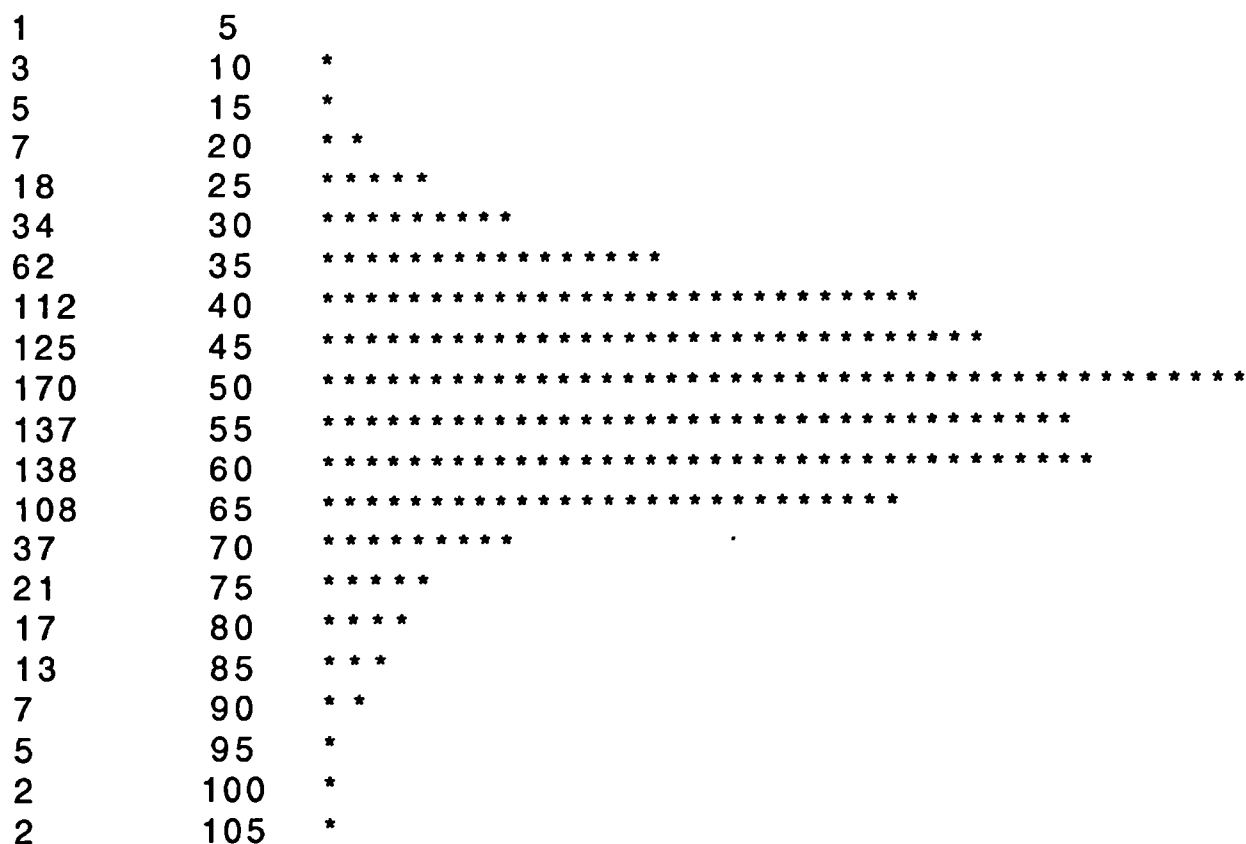
The main statistics for the scale are given in Table 10.4. The mean for the scale is 52.25 with a standard deviation of 14. The maximum score obtained by the sample is 107 while the minimum score obtained is 4, giving a range of 104. The skewness of the distribution is .29 indicating a slight skew from the normal curve. The standard error of measurement which was .44 is normal for a distribution of this size.

Table 10.4
Main Statistics for the CTDI Distribution

Mean	52.25	Std Error	.44	Median	52.00
Mode	59.00	Std Dev	14.00	Variance	196.59
Kurtosis	.98	S E Kurt	.15	Skewness	.29
S E skew	.08	Range	104.00	Minimum	3.00
Maximum	107.00	Sum	53500.00		

The spread of the distribution is given below. Here the percentile rank of the CTDI scale, that is the percentage of the norm group falling below a particular score, is given in Table 10.5. It shows the norm of the sample's rank in critical thinking disposition based on the total distribution, for example, the percentile rank of a score of 69 is approximately 90.91, or the 30th percentile of this data is equivalent to a raw score of 45.

The tendency of the percentile rank unit to bunch up in the middle and spread out at the extremes of the scale, made it necessary to convert it to an interval scale, the standard score norms (z score) and T scores.

The z score equivalents of raw score were determined by the formula :
    z = raw score - the mean of CTDI / std dev. of the distribution.

This results in a new distribution having a mean of zero and a standard deviation of 1. The z scores corresponding to the interval midpoints are listed in column 4 of the table.

The fact that the z scores can be negative or positive made led to the conversion of the z scores to T scores where the mean of the scores were set at 50 with a standard deviation of 10. It was obtained by multiplying the z scores by 10 and adding 50 to the product. Column 5 of Table 10.5 shows the distribution of T scores of the CTDI.

Table 10.5
Percentile Rank, Z Scores and T Scores of CTDI Scale

Raw Score	Percentile	Z score	T score
92 and above	98.99	2.81	78.14
85	97.98	2.34	73.39
82	96.97	2.12	71.25
79	95.96	1.91	69.11
76	94.95	1.69	66.96
74	93.94	1.55	65.54
72	92.93	1.41	64.11
71	91.92	1.33	63.40
69	90.91	1.19	61.96
68	89.90	1.13	61.25
67	88.89	1.05	59.82
66	87.88	1.05	60.54
65	84.85	0.91	59.11
64	82.83	0.84	58.39
63	80.81	0.77	57.68
62	78.79	0.69	56.94
61	75.76	0.63	56.25
60	74.75	0.57	55.65
59	70.71	0.48	54.82
58	67.68	0.41	54.11
57	65.66	0.34	53.39
56	62.63	0.27	52.67
55	59.60	0.19.	51.96
54	57.58	0.13	51.25
53	54.55	0.05	50.25
52	50.51	-0.02	49.82
51	48.48	-0.09	49.11
50	45.45	-0.16	48.40
49	42.42	-0.23	47.68
48	36.36	-0.30	46.97
47	35.35	-0.38	46.25
46	32.32	-0.45	45.53
45	30.30	-0.52	44.82

Table 10.5 (continued)
Percentile Rank, Z Scores and T Scores of CTDI Scale

Raw Score	Percentile	Z score	T score
44	27.27	-0.59	44.11
43	24.24	-0.66	43.40
42	23.23	-0.73	42.68
41	21.21	-0.80	41.96
40	18.18	-0.88	41.25
39	16.16	-0.95	40.54
38	14.14	-1.02	39.82
37	12.12	-1.09	39.11
36	11.11	-1.16	38.40
35	10.10	-1.20	38.06
34	8.08	-1.30	36.96
33	7.07	-1.38	36.25
32	6.06	-1.44	35.54
31	5.05	-1.52	34.82
29	4.04	-1.66	33.40
27	3.03	-1.80	31.96
23	2.02	-2.09	29.11
20 and below	1.01	-2.30	26.97

10.4.1 Norming of the CTDI Scale

To make the scores of the test more directly comparable, a transformation procedure that affects not the mean and standard deviation but also the shape of the distribution was attempted. The shape of the distribution of the CTDI scores was transformed into that of a normal curve. The conversion of the raw scores into to normalized standard score, Z_n was done by converting the percentile ranks to proportions of areas under a normal curve. Thus a raw score of 59 , has a percentile rank of 70.71 , a z score of .48, and a proportion of below 0.707 of the area under a normal curve. This proportion of the area under a normal curve is .52. The normalized T scores, Z_T scores were also converted by using the formula Z_T = 10 * Z_n + 50. This normalized T score has a mean of 50 and a standard deviation of 10 Table 10. 6 shows the normalized CTDI Z_n scores and Z_T scores.

Table 10.6
Normalized Standard Scores of CTDI Scale

Raw Score	Percentile	Z score	T score	Z_n Score	Z_T Score
92 and above	98.99	2.81	78.14	2.33	73.3
85	97.98	2.34	73.39	2.05	70.5
82	96.97	2.12	71.25	1.88	68.8
79	95.96	1.91	69.11	1.75	67.5
76	94.95	1.69	66.96	1.64	66.4
74	93.94	1.55	65.54	1.55	65.5
72	92.93	1.41	64.11	1.47	64.7
71	91.92	1.33	63.40	1.40	64.0
69	90.91	1.19	61.96	1.34	63.4
68	89.90	1.13	61.25	1.27	62.7
67	88.89	1.05	59.82	1.22	62.2
66	87.88	1.05	60.54	1.17	61.7
65	84.85	0.91	59.11	1.03	61.3
64	82.83	0.84	58.39	0.95	59.5
63	80.81	0.77	57.68	0.87	58.7
62	78.79	0.69	56.94	0.80	58.0
61	75.76	0.63	56.25	0.70	57.0
60	74.75	0.57	55.65	0.67	56.7
59	70.71	0.48	54.82	0.55	55.5
58	67.68	0.41	54.11	0.46	54.6
57	65.66	0.34	53.39	0.40	54.0
56	62.63	0.27	52.67	0.32	53.2
55	59.60	0.19.	51.96	0.24.	52.4
54	57.58	0.13	51.25	0.19	51.9
53	54.55	0.05	50.25	0.13	51.3
52	50.51	-0.02	49.82	0.00	50.0
51	48.48	-0.09	49.11	-0.04	49.9
50	45.45	-0.16	48.40	-0.12	48.8
49	42.42	-0.23	47.68	-0.19	48.1
48	36.36	-0.30	46.97	-0.35	46.5
47	35.35	-0.38	46.25	-0.38	46.2
46	32.32	-0.45	45.53	-0.46	45.4
45	30.30	-0 52	44.82	-0.52	44.8

Normalized Standard Scores of CTDI Scale

Raw Score	Percentile	Z score	T score	Z_n Score	Z_T Score
44	27.27	-0.59	44.11	-0.61	43.9
43	24.24	-0.66	43.40	-0.69	43.1
42	23.23	-0.73	42.68	-0.73	42.7
41	21.21	-0.80	41.96	-0.80	42.0
40	18.18	-0.88	41.25	-0.90	41.0
39	16.16	-0.95	40.54	-0.99	40.1
38	14.14	-1.02	39.82	-1.07	39.3
37	12.12	-1.09	39.11	-1.17	38.3
36	11.11	-1.16	38.40	-1.22	37.8
35	10.10	-1.20	38.06	-1.28	37.2
34	8 08	-1.30	36.96	-1.39	36.1
33	7.07	-1.38	36.25	-1.47	35.3
32	6.06	-1.44	35.54	-1.55	33.6
31	5.05	-1.52	34.82	-1.64	33.6
29	4.04	-1.66	33.40	-1.75	32.5
27	3.03	-1.80	31.96	-1.88	31.2
23	2.02	-2.09	29.11	-2.05	29.5
20 and below	1.01	-2.30	26.97	-2.32	26.8

10.4.2 Overall Result of CTDI Scale by Grade Level

The distribution of the CTDI scale by grade level is presented in Table 10.7. The result shows very small diferences in the means obtained by pupils from the five grade levels. Sec 4 and 5 students obtained higher means than the rest of the pupils. The highest mean was obtained by the Sec 4 pupils, while the highest spread of critical thinking disposition occurred among Sec 1 pupils. The least variation was found among the Sec 2 pupils. An analysis of variance performed to test if there is any significant difference in the means obtained by the different grade levels, showed that there was a significant difference in the means obtained. The F value obtained, 3.74, had a probability of .005. This shows that there is a difference in the mean CTDI scores obtained by the different grade levels, with the higher grade pupils showing a higher critical thinking disposition.

Table 10.7
Means and Standard Deviation of CTDI Scale by Grade Level

Levels	Number	Means	Std. Dev.
Sec 1	264	51.42	14.29
Sec 2	253	51.08	12.76
Sec 3	250	51.41	14.83
Sec 4	154	55.67	14.24
Sec 5	103	54.18	12.98

10.4.3 Overall Result of CTDI Scale by Stream

The means and standard deviations of the CTDI scale obtained by both the Express and the Normal Pupils are presented in Table 10.8. It shows a slightly higher mean obtained by the Express pupils. The Normal pupils also showed a larger spread of the distribution than the Normal pupils. The difference in the means obtained by both academic streams is significant, registering a t-value of 1.07, statistically significant at .05 level. It can be concluded that the Express pupils had a significantly higher critical thinking disposition than the Normal pupils.

Table 10.8
Means and Standard Deviations of CTDI Scale by Stream

Stream	Number	Means	Std. Dev.
Normal	634	51.57	14.97
Express	389	53.45	13.36

10.4.4 Overall Result of CTDI Scale by Gender

The distribution of the CTDI showed that the girls obtained a higher mean and a greater spread in the distribution than in the of the boys. The mean obtained by the girls is 53.77 compared to only 50.94 obtained by the boys.

An t-test performed on the data showed that a significant difference exists in the means obtained by both groups with the girls having a higher critical thinking disposition than the boys, (t-value of 3.22, $p = .001$ level). Therefore the girls in this sample could be said to have a higher critical thinking disposition than the boys.

Table 10.9
Means and Standard Deviations of CTDI Scale by Gender

Gender	Number	Means	Std. Dev.
Girls	482	91.77	12.39
Boys	516	88.93	14.32

10.5 Analysis of CTDI Items

The mean and standard deviation of every item are produced in Table 10.10. The item means ranged from 1.13 to 1.67, while its standard deviations ranged from .67 to .85.

Table 10.10:   Item Means and Standard Deviation of CTDI

CTD Items	Mean	Standard Deviation
1. I think of the main points that the author or speaker wish to convey	1.57	.75
2. I relate or compare what I read or hear with my own past experiences.	1.52	.79
3. I question why the author or speaker said certain things.	1.35	.84
4. I question whether what the author or speaker said is true.	1.67	.78
5. I question the author's or speaker's motive or intention for writing.	1.40	.80
6. I think of the reason why the author or speaker said certain things.	1.48	.82
7. I compare the author's or speaker's view with other people's point of view.	1.27	.79
8. I compare statements which I hear or read with other information.	1.30	.79
9. I compare the things I hear or read with my own experiences.	1.46	.77
10. I know what is a true fact and what is an opinion expressed by the author or speaker.	1.27	.68
11. I assess the accuracy of the statements I hear or read.	1.50	.76
12. I look whether the statement comes from believable authority.	1.53	.85
13. I try to find out whether the statements contradict one another.	1.24	.80
14. I try to find out if what the author or speaker says is reliable.	1.53	.77
15. I check whether the information given by the author or speaker is adequate.	1.13	.86
16. I can detect ambiguous or unclear statements.	1.19	.72
17. I can see or detect wrong or hasty conclusions in statements.	1.16	.69
18. I can detect an illogical reasoning whenever I hear or read.	1.47	.76
19. I know the assumptions or hidden idea behind statements made.	1.28	.74
20. I can detect misleading statements or writings.	1.27	.73

CTD Items	Mean	Standard Deviation
21. I try to distinguish objective and subjective statements.	1.14	.79
22. I focus on the meaning the author or speaker wish to convey.	1.53	.81
23. I know when a piece of writing is an advertisement	1.16	.82
24. I try to find out for whom the advertisement is written for.	1.33	.82
25. I try to assess what the advertisement says.	1.33	.78
26. When reading or listening to stories, I can differentiate whether it is true or make-believe.	1.63	.79
27 I question why the characters in the stories behave in a certain way.	1.49	.85
28. I compare the conclusions of the story to my own conclusion.	1.20	.86
29. I think whether a story is interesting or not.	1.94	.81
30. I think of the main story-line or the main sequence of a story.	1.56	.80
31. I can detect when the author or speaker uses words to influence people.	1.39	.82
32. I can detect when the author or speaker exaggerates something or somebody.	1.27	.78
33. I can detect when the author or speaker is biased against something or somebody.	1.34	.78
34. I know what are the relevant facts and what are irrelevant.	1.28	.77
35. I can distinguish the main points and the details of what is written or said.	1.24	.74
36. I know what are strong and what are weak arguments.	1.27	.75
37. I can determine which is the cause and which is the effect in anything spoken or writen.	1.37	.78
38. I know the different types ofwritten materials.	1.15	.76

The average or grand mean of the 38 CTDI items is 1.37 ranging from a minimum of 1.13 to a maximum mean of 1.94. The mean of the item variances is .62 while the mean inter-item covariances is .12. Therefore the most frequent pattern of response for most items is more likely to be either 'seldom' or 'often'. Item 29, 'I think whether a story is interesting or not' has the highest mean; while the second highest item is Item 4, ' I question whether what the author or speaker said is true'. The items with the lowest and second lowest means are Item 1, 'I check whether the information given by the author or speaker is adequate' and Item 38, 'I know the different types of written materials.'

10.6 Content Validity of CTDI

The content validity of the CTDI was determined from the expert opinions of the Malay language specialists at the Ministry of Education, the National Institute of Education, Singapore and the Curriculum Development Institute of Singapore were each given a set of the instrument to comment on. They were asked specifically to comment firstly, whether the items were measuring the disposition towards critical thinking, secondly, whether there is enough coverage of the aspect of disposition and thirdly, whether they find any bias or errors in the language used. All the experts believed that the test measures the disposition towards critical thinking. No new aspect was added and the experts were also in agreement that the language of the test could be easily understood by the pupils.

10.7 The Construct Validity of CTDI Items

Evidence of the construct validity of the CTDI was obtained through:

1) the Pearson correlation and biserial correlations of the items and the main scale. If the item is measuring similar trait as the man scale then it should correlate positively with it. The higher the correlation coefficient the stronger the relationship and therefore the validity of the items.

2) The discriminant validity of the scale with other tests thought to differ from the critical thinking disposition inventory.

The validity of the items comprising this critical thinking disposition test was examined through the validity or the correlation coefficents of the individual items with the total CTDI score. Two types of correation were computed: the Pearson correlation and the biserial correlations. In the case of the biserial

correlation, the total CTDI scores were divided into two categories comprising the low group, recoded from the lowest CTDI score to 52, the 50 percent score value, and the high group with the scores ranging from 53 to the highest. Adequate validity should be present if the product-moment correlation coefficient is positive and not lower than .3.

Tables 10.11 shows the result of the Pearson correlation coefficients between the items and the total score. The result revealed a moderately high significant correlation ranging from .34 to .55 between the items and the total CTDI score. The highest correlation was between Item 36 and the total score, while the lowest is between Item 1 and the total score. Item 36 is a statement about the strength of arguments, while Item 1 is about the main idea proposed by the speaker or author.

Table 10.11
Correlations of CTDI Items with CTDI Scale

CTDI Items	Pearson R	CTDI Items	Pearson R
CTDI 1	.34 *	CTDI 20	.46 *
CTDI 2	.41 *	CTDI 21	.48 *
CTDI 3	.44 *	CTDI 22	.51 *
CTDI 4	.43 *	CTDI 23	.44 *
CTDI 5	.45 *	CTDI 24	.44 *
CTDI 6	.43 *	CTDI 25	.50 *
CTDI 7	.46 *	CTDI 26	.43 *
CTDI 8	.47 *	CTDI 27	.53 *
CTDI 9	.52 *	CTDI 28	.48 *
CTDI 10	.42 *	CTDI 29	.45 *
CTDI 11	.51 *	CTDI 30	.47 *
CTDI 12	.50 *	CTDI 31	.53 *
CTDI 13	.44 *	CTDI 32	.51 *
CTDI 14	.45 *	CTDI 33	.55 *
CTDI 15	.39 *	CTDI 34	.51 *
CTDI 16	.43 *	CTDI 35	.51 *
CTDI 17	.50 *	CTDI 36	.55 *
CTDI 18	.48 *	CTDI 37	.51 *
CTDI 19	.50 *	CTDI 38	.43 *

10.8   The Discriminant Validity of the CTDI

Tests having similar traits, properties or processes should have a higher correlation with each other than otherwise. The CTDI is an affective or attitude scale, substantially different from an ability or an achievement test. Using the above reason, the CTDI should not correlate highly with achievement and ability tests such as the PSLE, PSLE Malay Language Examnination, PSLE English Language Examination, PSLE Science Examination and PSLE Mathematics Examination. It should not also correlate highly w th critical reading ability and comprehension ability as these are ability tests, not an attitude test; but between the two, it should have higher correlation with critical reading (as the two tests have a common trait, critical thinking), than with reading comprehension.

Table 10.12
Correlation of CTDI with Other Tests

Variables /Tests	Correlation with CTDI
RMLCRT	.16*
Reading Comprehension	.09
PSLE	.17*
Malay Language	.06
English Language	.15*
Mathematics	.05
Science	.10

* significant at .001 level

An analysis of the correlation matrix shown in Table 10.12 indicates that CTDI had low non-significant correlation with Malay language, but it had low but statistically significant correlation with reading comprehension, general ability and English language competency. These facts show that while the CTDI had some relationship with those variables, it is not similar because the correlation is low. In addition, although it is a test on critical thinking disposition which should be related to a test on critical reading ability, these two tests measure a dissimilar, though related construct. Further analysis of its properties could be done by using the factor analysis technique.

10.9 Factor Analysis of CTDI and Other External Tests.

The construct validity of the CTDI was already examined using the factor analysis procedure discussed in Chapter 9 in conjunction with the concurrent validity of the RMLCRT . The CTDI should not load together with ability or the achievement tests as it is an affective measure. From Table 9.38 from the last chapter, it was shown that the CTDI did not share common variances with all other ability and achievement tests. It is an independent factor on its own. This indicates that it is not in the same class as the other variables.

10.10 Reliability of the Critical Thinking Inventory

The reliability of the CTDI scale was calculated by using the Kuder Richardson formula 21 for multi-point items. The result gave the reliability coefficient of .90 for the 38 items and 1024 cases. (refer to Table 10.13) Using the split half-method, the reliability of the CTDI is a little higher at .92.

Table 10.13
Reliability of the CTDI Scale

Scale	Cases	Alpha split-half	Alpha Standardized
CTDI	1024	.9183	.9045

The standard error of measurement calculated from this reliability figure is 4.4 .

10.10.1   Reliability of CTDI Across Levels

As the CTDI is normed using secondary school pupils coming from five grade levels, the reliability of the instrument within each grade is computed   The results in Table 10.14 show that the CTDI could be reliably used in all the five grade levels, with reliability coefficients ranging from .87 to .92.   The reliability of the instrument for Sec 2 pupils was lower than the rest (.88).   Thus the CTDI could be relied upon as a measure of critical thinking disposition as measured by the CTDI.

Table 10.14
Reliability of the CTDI by Grade Level

Classes	Cases	Alpha split-half	Alpha Standardized
Sec 1	264	.9166	.9008
Sec 2	253	.8751	.8780
Sec 3	250	.9375	.9171
Sec 4	.154	.9437	.9225
Sec 5	103	.8299	.8981

10.10.2   Reliability of CTDI Across Stream

The reliability of the CTDI scale with the Normal and Express stream is also calculated and the results presented in Table 10.15. The reliability coefficient obtained for the Express stream is a little higher than that for the Normal stream, the standardized

Alpha being .92 for the Express stream and 89 for the Normal stream. Nevertheless, both streams could rely on the instrument as a measure of critical thinking disposition.

Table 10.15
Reliability of the CTDI Across Streams

Classes	Cases	Alpha split-half	Alpha Standardized
Express	389	.9286	.9218
Normal	634	.9098	.8917

10.10.3 Reliability of CTDI Across Gender

The reliability coefficients of the CTDI scale with the boys and girls are presented in Table 10.16. The Alpha reliability coefficient obtained for both gender is very similar, both attaining a reliability of .90.

Table 10.16
Reliability of the CTDI Across Gender

Classes	Cases	Alpha split-half	Alpha Standardized
Girls	.482	.904	.904
Boys	516	.901	.901

Thus the instrument could be said to be reliable for both boys and girls in secondary schools.

10.11 The Underlying Trait of CTDI Items

A study of the underlying latent structure of the CTDI items was undertaken by using the factor analysis procedure.

Firstly, the principal component analysis was employed to extract the latent trait or the underlying factors of the 38 CTDI items. The result of the analysis is produced in Table 10.17.

The result indicates the emergence of a complex matrix of inter-relations of the items. With a sample size of 1024, all the correlations were significant beyond .001 level. Then a further investigation using the Varimax rotation method was attempted. In this method the variables were rotated to maximum loading.

Table 10.17 shows the result of the analysis where the size of the eigenvalues (that is the sum of squares of the loadings, also known as commonality) and the percentage of variance extracted by the factors are shown. The method used for the extraction of the underlying traits was the Varimax Rotation. In this analysis the axes were turned about the origin until an alternative position of the loadings had been reached.

The eigenvalue extracted for the first factor was 8.48 and converted to the percentage of maximum possible variance, in the first factor extracted a 22.3% percentage variance. The second to ninth factor extracted 5% to 2.6% of the variance each. The total extracted variance of the CTDI scale was 48.9% meaning that the variance attributable to interrelatedness of the factors is about 48.9%.

Table 10.17
Initial Statistics of Principal Component Analysis of CTDI

Factors	Eigenvalue	PCT of Variance	Cumulative Percentage
1	8.48	22.3	22.3
2	1.90	5.0	27.3
3	1.41	3.7	31.1
4	1.33	3.5	34.6
5	1.20	3.1	37.7
6	1.13	3.0	40.7
7	1.06	2.8	43.5
8	1.05	2.8	46.2
9	1.00	2.6	48.9

Only one main factor having latent roots substantially greater than one is identified as the common trait and this factor alone contributes 22.3%. The other eight factors contribute 26.6% of the variance in critical thinking disposition as measured by the CTDI. Table 10.18 presents the result of the varimax rotation analysis using SPSSX Statististical Package for Social Sciences . In the

table only loadings greater than .3 are shown to facilitate interpretation.

The first factor has a common variance of 22%. The other eight factors contribute between 2.6% to 5% of the variance. Therefore only one factor seemed to be the common underlying trait. An inspection of the loadings indicates the first factor to be composed of a cluster of variables representing detection of ambiguity, abrupt conclusions, illogical and misleading statements, and the detection of hidden assumptions. These variables could be related to the general dispositions in critical thinking such as the detection of ambiguities, knowing what a fact is and what an opinion is, being able to detect wrong and hasty conclusions, being able to detect illogical reasoning, knowing the assumptions or hidden ideas behind statements, being able to detect misleading statements as well as knowing when a piece of writing is used as an advertisement. Clearly these are core critical thinking dispositions.

The other eight factors beginning from the second factor, which did not meet the criterion of at least 10% of variance will also be explored here, although they are minor and not important.

The Second Factor, which is minor, contains five variables related to stories: thinking whether a story is interesting, knowing whether the story is true or fictitious and knowing the sequence of the story. The significant loadings ranged from .71 to .38. This could mean that the second factor is a specific critical disposition towards evaluating stories or literary materials.

The third factor with significant loadings ranging from .64 to .38 seemed to load on a group of variables related to ideas and authors in a piece of writing or statements. The variables are detecting the author's use of influencial statements, distinguishing the main idea from the details, knowing the difference between a strong argument and a weak one, knowing the types of writing, distinguishing objective and subjective statements and the disposition towards determining the cause and effect of written or spoken statements.

Table 10.18
Rotated Factor Matrix of CTDI Items

CTDI Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1					
2					
3					
4					
5					
6					
7				.456	
8				.519	
9				.629	
10	.563				
11					
12					.656
13					.601
14		.308			.647
15					
16	.611				
17	.597				
18	.557	.354			
19	.489				
20	.540				
21			.366		
22		.382			
23	.301				
24					
25					
26		.596			
27		.361			
28					
29		.705			
30		.555			
31			.317		
32					
33					
34			.551		
35			.646		
36			.620		
37			.327	.348	
38			.412	.357	

Rotated Factor Matrix of CTDI Items

CTDI Items	Factor 6	Factor 7	Factor 8	Factor 9	
1				-.355	
2					
3	.610				
4	.674				
5	.676				
6	.445				
7					
8					
9					
10					
11					
12					
13					
14					
15			.689		
16					
17					
18					
19					
20					
21			.489		
22					
23		.467			
24		.746			
25		.636			
26					
27					
28			.563		
29					
30					
31				.464	
32				.577	
33				.570	
34					
35					
36					
37					
38					

The fourth minor factor had three variables related to making comparisons - comparing the statements read or heard with one's very own experience, comparing the facts stated with other information, comparing the author's or speaker's view with other people's point of view. Also linked together was the determination of the cause and the effect of written or spoken statements.

Factor five (minor factor) had a cluster of variables which constitutes the disposition towards checking the reliability of authors, speakers and sources in common. It included the detection or checking of contradictions, inconsistencies and adequacy of information.

The sixth minor factor indicated questioning dispositions like getting to the truth and motives as the common features. For example, the statements on questioning the intent of the author or speaker, questioning the truth of what the author said, questioning the reason behind the author's or speaker's statements and thinking of the reasons why a statement is made.

Factor seven (minor) was very clear in that all the three highest loadings had in common 'advertisements': finding out the target of the advertisements, assessing the worth of what is mentioned in advertisements, and knowing when advertising is made in a piece of writing.

Factor eight , on the other hand, was not very clear and was a mixture of the disposition towards seeking the truth and completeness of information and objective and subjective statements.

Finally the ninth minor factor, although it contributed small commonalities, seemed to load on the detection of important crit cal disposition, that is, the detection of exaggeration, bias and words used to influence people but what is unclear is the negative loading on "thinking about the main points the author or speaker wishes to convey".

Thus one main factor which contributed a substantial proportion of the variance in critical thinking disposition could be identified, but bes des these eight other subsidiary factors, all related to critical thinking disposition were also revealed. The main factor identified was disposition towards detecting inconsistent and ambiguous statements .

The other minor factors were:

- disposition towards assessing and understanding stories,
- disposition towards getting to the meaning of ideas and arguments,
- disposition towards making comparisons,
- disposition towards finding the truth or reliability of statements,
- disposition towards questioning the motives and the reasons behind statements,
- awareness of advertisements and its related features disposition towards achieving adequacy ,
- disposition towards detecting bias, exaggeration and influencial/propaganda agencies.

10.12   Conclusion

The CTDI was created based on the Ennis's theory of critical thinking. At the pilot stage, 40 items were constructed, but after item analysis was done, 38 items remain on the actual CTDI.

The Critical Thinking Disposition Inventory had been standardized on a representative sample of Singaporeans pupils taking Malay as second language in secondary schools. The instrument had been shown to be a reliable one having a reliability coefficient of .90 It could also be reliably used in all secondary levels, from Sec 1 to Sec 5, for the Normal as well as the Express stream.

There is evidence of internal consistency and validity of the 38 items of the CTDI as a measure of critical thinking disposition. The item validity coefficients ranged from .34 to .55 showing it to have consistency with the main CTDI scale.

The construct validity of the CTDI was determined through the discriminant validity procedure in which it was shown that the construct of the CTDI, an affective measure, was independent from other tests measuring cognitive abilities

A factor analysis procedure had also been employed in order to identify the latent traits or the common traits of the items in the test. One main factor extracted, identified as the core disposition towards thinking critically. Some other specific, minor traits were also identified such as dispositions towards getting to the truth, dispositions towards making comparision, investigating the reliability of sources and authors, having a questioning attitude,

awareness of acts of advertising and others; but these factors were insignificant.

The result of these exercises indicate that the CTDI had demonstrated the properties of a reliable and valid measure of critical thinking disposition of the population concerned.

CHAPTER 11

THE EXPLORATORY MODEL OF CRITICAL READING ABILITY

11.1   Introduction

The objective of the present chapter is to explore the relationship between critical reading ability and some of its correlates. The main thrust of this chapter is to look for an answer to the third line of inquiry, that is, to construct an exploratory model of the correlates of critical reading ability. The major hypothesis is that the variation in critical reading ability is a function of several characteristics of the readers such as their general academic ability, their critical thinking disposition, reading comprehension ability, age, gender, socio-economic and language background.

11.2   Descriptive Analysis of the Subsample

The final sample used for this part of the inter-relationship study consisted of a smaller number of pupils pooled from the main standardization sample, namely, pupils who completed the MLCRT, the CTDI, the General Reading Comprehension Test as well as having responded fully to the Questionnaire. Hence, only 580 subjects were considered in this substudy. The composition of the sample is illustrated in Table 11.1 and 11.2 below where the breakdown based on grade levels as well as stream and gender are indicated. Figures 11.1 and 11.2 give the corresponding charts.

In this subsample, 283 or 48.7% of the subjects were girls and more subjects (330 or 56.9%) came from the Normal stream than the Express stream which provided only 43.1% of the subsample. The subjects were spread out in terms of grade level, with Sec 2 pupils forming the largest number of subjects. This ratio between the Normal and Express stream pupils is close to the actual pupil population distribution where the ratio of Normal to Express stream among Malay pupils was about 3 : 2.

Figure 11.1: Distribution of Subsample by Gender and Grade level.
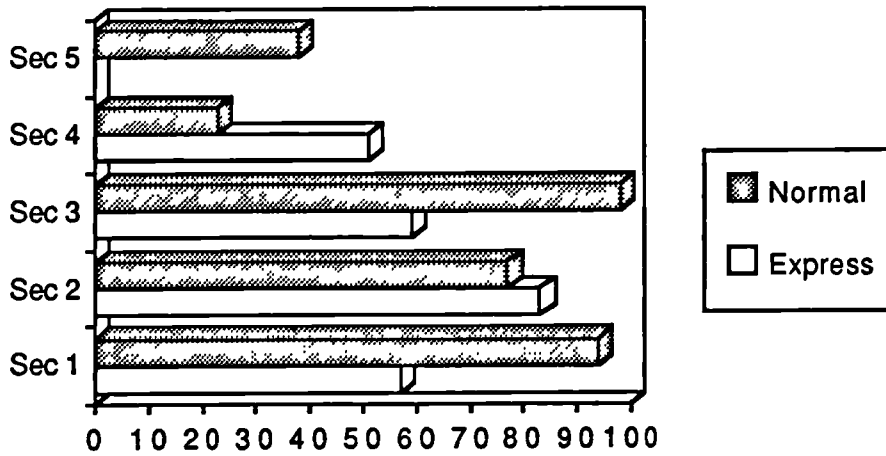
Table 11.1: Distribution of Subsample by Gender and Grade level.

Grade level	Express	Normal	Total
Sec 1	57	94	151
Sec 2	83	77	160
Sec.3	59	98	157
Sec.4	51	23	74
Sec 5		38	38
Total	250 (43.1%)	330 (56.9%)	580 (100.0%)

Figure 11.2: Distribution of Subsample by Gender, Stream and Grade Level.
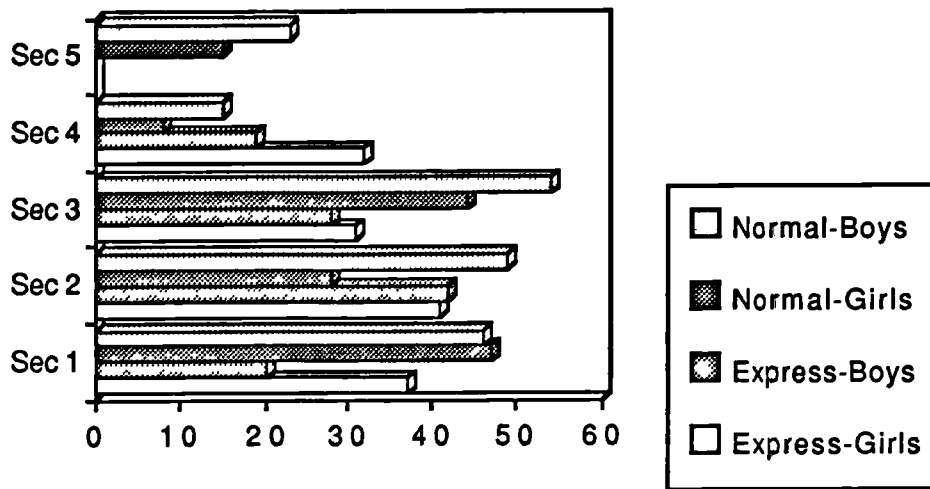
Table 11.2: Distribution of Subsample by Gender, Stream and Grade Level.

Class	Express		Normal	
	Girls	Boys	Girls	Boys
Sec 1	37	20	47	47
Sec 2	41	42	28	49
Sec 3	31	28	44	54
Sec 4	32	19	8	15
Sec 5 ·	-	-	15	23
Total	141 (56.4%)	109 (43.6%)	142 (43.0%)	188 (57.0%)

11.3 Source of Data for the Variables Under Study

The relevant data was obtained through a questionnaire filled in by the pupils after completing the critical reading test, CTDI and reading comprehension test administered earlier.

11.4 The Variables Under Study

The RMLCRT was used to represent critical reading ability in this substudy. The variables or correlates examined in this study were categorized into seven groups, namely,
- the personal variables,
- the socio-economic variables,
- the bilingual language background variables,
- the general ability factors,
- the school variables,
- general reading comprehension and
- the critical thinking disposition factor.

The personal factors consisted of variables pertaining to the subjects' gender and age. The socio-economic variables were indicated through the educational level of the parents, the parent's income, type of dwelling and number of people in the homes. The bilingual language background was represented by the use of English in interaction and the use of English with families and friends. To represent general ability factors, such variables as the subjects' performance in the Primary School Leaving Examination (PSLE), their PSLE-mathematics grade, their PSLE-Science grade, their PSLE-English score and their PSLE-Malay Language grade were included.

11.5 Coding of the Variables Under Study

a) The personal variables
Age and gender were obtained directly from the data. For sex, girls were coded a 0 and boys as 1. The subjects' age in years and months during the test administration were recorded and then recoded for subsequent analysis.

b) Socio-economic factors (SES)
A composite number of indicators were used. In this respect, the pupils' parental income, parents' educational level and type of housing was computed in such a way that the higher the composite score the higher will be the SES. The pupils' type of housing was recoded as:

1   one or two-room HDB flats
2   three -room HDB flats-
3   four-room HDB flats-
4   five-room HDB flat
5   executive flats
6   HUDC flats
7   private flats
8   terrace/semi-detached or detached houses.

The number of people living in the house was examined as one variable, with the higher number of people per head (an indication of over-crowding) being used to indicate a lower SES.   For income and educational level of the parents, the higher their income and their educational level, the higher would be their accorded SES.

c) Bilingual language background

As all the subjects were ethnic Malays and Malay native speakers, the use of another language mostly English which is studied as the language of instruction in school was used as an indicator of bilingual home background.   Therefore the bilingual language background of the subjects was measured through the subjects' self-rated frequency or amount of English usage with their family members and friends.

d) The General Academic Ability Factors

The general academic ability variables included such variables as the subjects' class or grade level, course or stream, general academic ability as represented by their performance in the Primary School Leaving Examination (PSLE), their PSLE-English score and their PSLE-Malay Language score.

For the PSLE, the T-score was directly used for computation, but for PSLE-Malay and PSLE-English, a grade equivalent was recorded.   Thus Grade A* was coded as 6, Grade A coded as 5, Grade B as 4, Grade C as 3, Grade D as 2 and Grade E (Fail) coded as 1.

e) Course or Stream

In the secondary school system, there were five grade-levels, from Secondary One to Secondary Five.   Course or academic stream was categorised into two groups, the Express and the Normal Stream, where the Express Stream were allocated to pupils who were better

academically while the Normal Stream was for pupils who were academically weaker.

f) The General Reading Comprehension Ability
The General reading comprehension ability measure was taken from the scores obtained from the Supki Malay Language Reading Comprehension Test administered to the pupils.

g) The Critical Thinking Disposit'on
The scores obtained from the CTDI test administration were used as an indicator of critical thinking disposition of the subjects. Only subjects who had completed the whole test were included in this study.

11.6 Research Questions

In an attempt to investigate the predictors of critical reading ability of the Malay pupils in Singapore, which was the final research question addressed in this section, the relationships between critical reading ability and the personal, social, bilingual language background, course, general ability factors were explored. In addition the relationship between critical reading and general reading comprehension and critical thinking disposition was also included in the model.

Hence the initial technique of analysis employed was a correlation analysis followed further by t-tests and the analysis of variance as was appropiate. For the model construction, a regression analysis was undertaken to conclude the whole procedure.

The seven sets of hypotheses pertaining to research question 1 tested in this substudy were:

1. There exists a statistically significant relationship between the personal characteristics such as a) gender and b) age of the subjects and critical reading ability.

2. There exists a statistically significant relationship between the socio-economic levels of the subjects and critical reading ability.

3. There exists a statisticallt significant relationship between the b'lingual language background of the subjects and critical reading ability.

4. There exists a statistically significant relationship between the general academic ability of the subjects and critical reading ability.

5   There exists a statistically significant relationship between school variables such as a) stream and b) grade level with critical reading ability.

6. There exists a statistically significant relationship between the general reading comprehension ability of the subjects as measured by the SGRCT (Supki General Reading Comprehension Test) and critical reading ability.

7. There exists a statistically significant relationship between the critical thinking disposition of the subjects as measured by the CTDI and critical reading ability.

8. In the exploratory model of critical reading ability, gender, age, socio-economic background, bilingual language background, reading comprehension ability, general ability, critical thinking disposition will have significant effects on the critical reading ability.

11.7 Testing The Hypothesis

11.7.1   Hypothesis 1 (personal factors)

1. There exists a significant relationship between the personal characteristics of the subjects and critical reading ability.

Two variables were looked into, gender and age. which were further subdivided into two sub-hypothesis, hypothesis 1a and 1b.

Hypothesis 1a

A significant relationship exists between the gender of the subjects and their critical reading ability. and

Hypothesis 1b

A significant relationship exists between the age of the subjects and their critical reading ability.

The result of the intercorrelation analysis between critical reading ability as represented by the RMLCRT is presented in Appendix 39.

Table 11. 3
Intercorrelations between Personal Characteristics and Critical Reading.

	MLCRT	Gender	Age
MLCRT	1.00	-.23**	.12**
Gender	-.23**	1.00	.05
Age	.14**	.05	1.00

** significant beyond .001 level

Results as presented in Table 11.3 showed a correlation coefficient of -.23 in favour of the girls, between sex and MLCRT. This is statistically significant at .00l level. A t-test analysis between sex and critical reading ability was performed to probe further into the question of variance between the means obtained by both sexes.

Thus Table 11.4 below shows the result of the t-test analysis. A t-value of 5.6 with probability less than .001 was obtained, showing a significant difference between the means obtained by the boys and girls in critical reading with the girls obtaining significantly higher mean of 36.12 compared to 32.18 obtained by the boys.

Table 11.4:
T-test Analysis Between Both Gender And Critical Reading Ability

SEX	N	Mean	Std Dev	Std Err.	t-value	Prob
Girls	283	36.52	9.16	.55	5.61	.000
Boys	297	32.18	9.45	.55		

* significant at .001 level.

The above result shows that there was a significant difference between the means obtained by the boys and girls with the girls obtaining a higher significant means. Thus Hypothesis 1a is supported.

Hypothesis 1b

A significant relationship exists between the age of the subjects and their critical reading ability.

The result of the correlation analysis, shown in Table 11.3, indicates that age had a positive low correlation of .14 with critical reading ability. This was significant at the .001 level and gave indication of low positive relationship between age and the ability to read critically. Further analysis was designed to examine whether there was any significant variation in the means obtained by the 5 age groups. For this purpose, an ANOVA was performed on the data. The subjects' age was then recoded accordingly as follows:

12 yrs 1 mth to 13 years = 12
13 yrs 1 mth to 14 years = 13
14 yrs 1 mth to 15 years = 14
15 yrs 1 mth to 16 years = 15
16 yrs and above   = 16

The means obtained by each age group on the MLCRT are indicated in Table 11.5 while the result of ANOVA performed on the 5 age groups are presented in Table 11 6.

Table 11.5
Comparison of Means Between 5 Age Groups

Age Group	Count	Mean	Std.Dev.	95% Conf Int for mean
12 yrs	30	30.74	8.36	27.61 - 33.85
13 yrs	116	31.89	9.72	30.10 - 33.68
14 yrs	156	35.45	9.14	34.00- 36.89
15 yrs	148	34.43	9.50	32.88 - 35.97
16 yrs	130	35.72	9.72	34.04 - 37.41

Table 11. 6
ANOVA between AGE and R-MLCRT

Source	D.F.	Sum of Sq.	Mean Sq.	F Ratio	F Prob.
Between groups	5	1527.96	381.99	4.28	.002
Within Groups	574	51314.21	89.24		
Total	579	52842.17			

An F ratio of 4.28 was obtained following the analysis of variance performed on the 5 age-groups. This ratio is significant at the .01 level. Therefore there is a significant variation in critical reading ability due to the age factor. Hypothesis 1b is supported.

11.7.2   Hypothesis 2

A significant relationship exists between pupil's **socio-economic** levels and their critical reading ability.

Several variables were identified as representing the socio-economic level of the pupils. The father's education (FEDN) , mother's education (MEDN), father's income (FINCOM), mother's income (MINCOM), type of houses (HOUSE) and the number of people living in the house (NHOUSE). In Singapore, the type of houses, (with indication of the number of rooms) could be used as an indicator of socio-economic status as the Housing Development Board (HDB), the statutory body in charge of public housing in Singapore, enforced strict rules and regulation regarding the ownership and renting of its flats. Only citizens who were within a specified income bracket were allowed to buy flats

A correlation analysis utilising the Pearson R coefficient was performed on the set of variables. The results are presented in Table 11.7.

Table 11.7
Intercorrelations Between RMLCRT and Socio-economic Variables

	RMLCRT	FEDN	MEDN	FINCOM	MINCOM	HOUSE	NHOUSE
RMLCRT	1.00	.08*	.10*	.02	-.00	.08	-.03
FEDN		1.00	.55**	.20*	.10*	.26*	-.05
MEDN			1.00	.15**	.19**	.25**	-.11*
FINCOM				1.00	.34**	.07	.02
MINCM					1.00	.09	-.07
HOUSE						1.00	.17**
NHOUS							1.00

*   prob. > .01
**   prob. >.001

From Table 11.7, it can be seen that only one variable, mothers' education, had statistically significant correlation with critical reading ability, both of which recorded a correlation of .10 with critical reading ability. All the other variables were not correlated with critical reading ability, but father's mother's educational level was quite highly correlated, with r = .55.

Further analysis into mother's education and critical reading was attempted using the ANOVA procedure. The result is shown in Table 11.8.

The categories for both parent's educational level were:
Lower Primary and no schooling - 1
Primary 6 - 2
Secondary 1 and 2 - 3
Secondary 3 and 4 - 4
Post-Secondary education - 5

Table 11.8
ANOVA Between Mother's Education and Critical Reading Scores

Source	D.F.	Sum of Sq.	Mean Sq.	F Ratio	F Prob.
Between groups	4	1185.22	296.30	3.30	.01
Within Groups	575	51656.95	89.84		
Total	579	52842.17			

As shown in the table, differences in critical reading ability were statistically significant at .01 level between groups of pupils based on their mother's qualifications. There was a significant increase in the means obtained by pupils whose mothers were having higher education as against those whose mothers were having lower levels of education .

Therefore Hypothesis 2 is supported if mother's education is used as an indicator of socio-economic status.

11.7.3 Hypothesis 3

A significant relationship exists between the **bilingual language background** of the subjects and their critical reading ability.

The amount of English used, besides Malay, the native tongue of the subjects, was computed as an indicator of the bilingual background. Two variabless were considered: the subjects' use of English with their family members and the frequency of English usage as reported by the subjects.
From the correlation coefficients it is evident that no significant relationship existed between critical reading ability and the subjects' bilingual language background, the correlation between the amount of English used within the family and critical reading ability is only .03.

Nevertheless an analysis of variance performed between the amount of English used within the family and their crit'cal reading ability was

performed. The result, shown in Table 11.9, indicates that there was a significant difference in the ability to read critically among those who were high and low in their usage of English among family members, obtaining a t value of 4.45 significant at the .002 level.

Table 11.9
ANOVA Between Bilingual Language Background and
Critical Reading Scores

Source	D.F.	Sum of Sq.	Mean Sq.	F Ratio	F Prob.
Between groups	4	1587.98	397.00	4.45	.002
Within Groups	575	51254.19	89.14		
Total	579	52842.17			

Therefore Hypothesis 3 is supported when the use of English among family members is utilised as an indicator of bilingual language background.

11.7.4 Hypothesis 4

A significant relationship exists between the general ability of the subjects and their critical reading ability.

The result of the inter-correlations between general ability represented by the performance in PSLE, Malay language, English language and reading comprehension ability is given in Table 11.10. From the table it can be concluded that there exist significant and positive relationships between critical reading ability and academic factors. The correlation between PSLE and critical reading was the highest of all, with an 'r' of .54. PSLE alone could therefore contribute 29% of the variance in critical reading ability.

Table 11.10
Intercorrelations between General Ability, English, Malay language and Reading Comprehension With Critical Reading Ability.

	PSLE	English	Malay	Compre
MLCRT	.54**	.36**	.22**	.47**
PSLE		.70**	.39**	.33**
English			.22**	.45**
Malay				.29**

** p > .001 level.

An Analysis of Variance between general ability and critical reading was attempted to investigate the differences in the variances of the two variables among the subjects. The result of the analysis is presented in Table 11.11. It shows that there is a significant difference in the means obtained by the subjects in both critical reading and general ability as represented by performance in the PSLE.

Table 11.11
ANOVA between General Ability and RMLCRT

Source	D.F.	Sum of Sq.	Mean Sq.	F Ratio	F Prob.
Between groups	84	23215.25	276.37	4.62	.000
Within Groups	495	29626.93	59.85		
Total	579	52842.17			

Thus Hypothesis 4 is supported by the result.

11.7.5 Hypothesis 5

Significant relationship exists between school variables related to the subjects and critical reading ability.

School variables are here defined as the class or grade level and the course or stream in which the subjects pursued their studies. This hypothesis was further subdivided into Hypotheses 5a and 5b, thus:

Hypothesis 5a

A significant relationship exists between stream attended by the subjects and their critical reading ability.

Hypothesis 5b

A significant relationship exists between grade-level attended by the subjects and their critical reading ability.

The correlation matrix between these school factors is presented in Table 11.12.

Table 11.12
Intercorrelations Between Grade level and Stream with Critical Reading

	MLCRT	Stream	Class
MLCRT	1.00	-.44**	.24**
Stream	-.44**	1.00	.03
Class	.24**	.03	1.00

** p > .001

Both class level and stream correlated significantly with critical reading ability (.22 and -.44 respectively). Of the two, stream had a higher correlation (r = .44, p > .001) with the criterion variable.

Hypothesis 5a

Significant relationship exists between stream and critical reading ability.

A positive significant correlation was revealed between stream and grade level with crtical reading, the correlation between stream and critical reading was in fact higher at .44 in favour of the Express stream pupils.

A t-test analysis to look into the differences in mean between the Express and Normal pupils was attempted and the results revealed in Table 11.13.

Table 11.13
T-Test Analysis of Means Between Stream and RMLCRT Scores

Stream	Number	Mean	S.D.	T-value	Prob.
Express	250	39.15	8.27	11.89	.000
Normal	330	30.66	8.81		

The result shows that the Express stream pupils performed significantly better in critical reading than the Normal pupils, as the means obtained by them were significantly higher, 39.15 compared to that of the Normal pupils whose mean critical reading score was only 30.66.

Thus Hypothesis 5a is supported.

Hypothesis 5b

A significant relationship exists between grade level of the subjects and their critical reading ability.

The correlation between grade level and critical reading was .24 which was moderate but statistically significant. There were significant variations in performance between the five grade levels as was evident through the ANOVA analysis performed on grade level and MLCRT shown in Table 11.14.

Table 11.14
ANOVA Between Grade Level and RMLCRT

Source	D.F.	Sum of Sq.	Mean Sq.	F Ratio	F Prob.
Between groups	4	4382.57	1095.6	13.00	.000
Within Groups	575	48459.60	84.28		
Total	579	52842			

Both Hypothesis 5a and 5b are therefore supported as both stream and grade level did have significant relationsh ps with critical reading.

11.7.6 Hypothesis 6

A significant relationship exists between general reading comprehension ability of the subjects and their critical reading ability.

The relationship between General Reading comprehension and Critical Reading Ability was first analysed through a correlation analysis. The result of this analysis produced correlation coefficient of .47 significant at the .001 level between critical reading ability and general comprehension ability in the same language. This coefficient was considered substantial as it was second in sizeonly to performance in PSLE.

To determine whether there is a significant diference in the mean obtained by the subjects in their critical reading test, and general reading comprehension ability, an analysis of variance was performed and the result is shown in Table 11.15.

Table 11.15
ANOVA between General Reading Comprehension and RMLCRT

Source	D.F.	Sum of Sq.	Mean Sq.	F Ratio	F Prob.
Between groups	46	15847.66	344.51	4.96	.000
Within Groups	533	36994.51	69.41		
Total	579	52842.17			

As shown in Table, 11.5, significant variations (F value of 4.96 , p=.001) were observed between reading comprehension and critical reading ability. Thus Hypothesis 6 is supported.

11.7.7 Hypothesis 7

A significant relationship exists between Critical Thinking Disposition of the subjects and their Critical Reading Ability.

The relationship between critical thinking disposition as represented by the CTDI and critical reading abil'ty as represented by the RMLCRT was pursued through a correlation analysis. The result was a correlation coefficient of .18 significant beyond .001 level. This index was rather low but is to be expected as the CTDI is an affect ve scale, whereas the RMLCRT is a cognitive test.

The analysis of variance was also performed in order to examine the variation in the means obtained by the subjects on the two variables. The result, given in Table 11.16, showed significant differences at the .05 level between critical reading scores and scores of the CTDI.

Table 11.16
ANOVA between Critical Thinking Disposition Scores and RMLCRT

Source	D.F.	Sum of Sq.	Mean Sq.	F Ratio	F Prob.
Between groups	70	8239.40	117.63	4.28	.04
Within Groups	509	44607.77	87.64		
Total	579	52842.17			

The result supports the hypothesis that there was a significant difference in the means of critical reading and critical thinking disposition obtained by the subjects. Thus Hypothesis 7 is supported.

11.8   Intercorrelation of Variables

A correlation matrix is presented in Appendix 39. The matrix shows correlation coefficients ranging from -.51 to .82 among the selected variables such as gender, age, socio-economic status (as represented by type of housing), number of persons per household, parent's income and parents' education, general ability, reading comprehension ability with critical thinking disposition .

It is evident from the correlation matrix that generally there was relatively high correlations between academic ability factors such as Malay language, general reading comprehension ability and school factors with critical reading scores. Low but pos tive, and

statistically significant relationships were noted between gender, age on critical reading ability, with correlation of -.23 between gender and critical reading ability, and an r of .12 between age and critical reading ability. Mother's educational level registered a significant correlation of .10 with critical reading ability.

To summarize, the correlation study, the t-tests and the analysis of variance study disclosed the following signif'cant features:

1. All the school and academic achievement factors were positively and moderately correlated with the criterion variable, critical reading ability.

2. Except for mother's educational level, all the socio-economic factors, viz. mother's income, father's income, number of people in the home and the type of housing, had very low statistically non-significant correlations with critical reading ability.

3. General ability had the highest correlation with critical reading ability, with r = .54, followed by general reading comprehension, (r=.47, p = .001)

4. Critical Thinking ability as measured by the CTDI registered a low but significant correlation with critical reading ability, (r=.18, p=.001).

5. The personal variables, namely, age and sex were moderately correlated with critical reading ability. The girls seemed to be significantly better than the boys in critical reading. Also, as the pupils advanced in age, their critical reading abilities, too, seemed to improve.

6. The school factors, namely grade level and stream, had moderately high and significant correlations with the criterion variable. The Express stream pupils were significantly better at critical reading, and as the pupils advanced in grade level, their critical reading ability also improved.

7. The bilingual language background was not significantly correlated with critical reading ability, but using the analysis of variance, it was found that there is a difference in critical reading ability of those who were high and low in their English usage among their family members.

8. Grade level had a moderate correlation w'th critical reading ability and high correlation with age, r = .82, p = .001.

9. Academic stream had a moderately high correlation with critical reading ability and a high correlation with general ability, r = .76, p = .001.

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11.9   The Exploratory Model of the Correlates of Critical Reading Ability

Research Question 8
What is the Exploratory Model of Critical Reading Ability?

The major hypothesis of this study is that variation in critical reading ability is a function of concomitant variation in measures of selected characteristics and the background of the individual. In the conceptual model of critical reading ability of Singaporean Malay pupils, differential effects of general ability, reading comprehension, grade level, sex, age, mother's education, socio economic status, grade level on critical reading ability were hypothesized.

As the purpose of model building procedure is explanatory in nature, the path analysis was used to evaluate the relative effects of the learners' variables to critical reading ability. Path analysis is a method for studying the direct and indirect effects of variables taken as causes of variables identified as effects. It is a method applied to a causal model formulated by the researcher on the basis of knowledge and theoretical considerations regarding critical reading ability of Malay students in the Singapore context.

The advantage of using path analysis is that it provides a means by which the nature of the problem addressed by an empirical study may be summarized. It requires the researcher to think of the cause, particularly a system of intercausal connections (termed "the path model") that provides an expirical link between a prior theoretical notion of causal connections and quantitative estimates of a causal impact.

The path diagram is a useful device for displaying graphically the pattern of causal relations among a set of variables. An exogenous variable is a variable whose variability is assumed to be determined by causes outside the model whereas an endogenous variable is one whose variation is explained by exogenous or endogenous variables in the model.

A path coefficient, according to Wright (1934), is the fraction of a standard deviation of the dependent variable, with an appropiate sign (in this case, critical reading ability) for which the designated factor is directly respons'ble, in the sense that this factor varies to the

same extent as the observed data while all others (including the residual factors) remain constant.

A residual path coefficient indicates the effect of all unmeasured variables not included in the model that cause variation in the dependent variable and is determined by applying the formula P residual $= / 1- R^2$ where R^2 is the coefficient of determination or variance accounted for by the independent variables in each of the structural equations.

At the initial stage the variables which were thought to have an effect on critical reading ability were entered into a multiple regression equation where critical reading ability was regressed on the selected variables. These independent variables in a single path model were treated as exogenous. The result of the analysis is shown in Table 11.17. The variables were general ability, reading comprehension, grade level, sex, mother's education, bilingual background, Malay language competency and critical thinking disposition on critical reading ability. Academic stream and age were not included in the analysis as academic stream was highly correlated with general ability, while age was highly correlated with grade level, both of which were already in the model.

Table 11.17
Multiple Regression with Critical Reading as the Dependent Variable

Var	R	R2	R2 Added	b	S E of b	Std b
1. General Ability	.5419	.2939	.2939	.1822	.0147	.4233
2. Comprehension	.6226	.3876	.0937	.3073	.0404	.2711
3. Grade Level	.6319	.3993	.0117	.9983	.2688	.1246
4. Sex	.6412	-.4111	.0118	-2.1421	.6294	-.1123

As apparent in Table 11.17, the stepwise procedure disclosed that when general ability was entered first the multiple R coefficient was .54 and the contribution of this factor was 29% of the variance. When general reading comprehension scores was entered in Step 2, another 9% addit'onal contribution due to this incoming variable was added. In Steps 3, and 4 , sex and grade level contributed another 1% each. The

total contribution of these four variables amounted to a figure of 41% of the variation in critical reading ability. The other four variables, mother's education, bilingual background, Malay language and critical thinking, did not reach the .05 statistical significance level.

In the above equation, each test was weighted in direct proportion to its correlation with the criterion and in inverse proportion to its correlation with the other tests. Therefore the highest we ght would be assigned to the variable with the highest amount of overlap with the rest of the variables.

This five-factor model must be understood in terms of the intercorrelations among the various factors, as many of the factors which had a strong correlation with each other was already represented in the model. As already described, general ability itself registered strong correlations with other academic related factors such as $r = .38$ with Malay language.

In the model tested, general ability, general reading comprehension ability, critical reading disposition, grade level and gender of the pupils were conceptualized as exogenous causal agents influencing the ability to read critically.

The next step was to regress general ability on Malay language, personal and social background of the pupils. The result of the multiple regression is presented in Table 11.18.

Table 11.18
Multiple Regression with General Ability as the Dependent Variable

Var	R	R2	R2 Added	b	S E of b	BETA
1. Malay Language.	.3935	.1548	.1548	14.6981	1.3108	.4099
2. Bilingual Background	.4551	.2044	.0496	3.6171	.7689	.1771
3. Mother's Education	.4769	.2274	.0230	1.4899	.3733	.1501
4. Critical Thinking	.4917	.2417	.0143	.1913	.0581	.1203

Malay language contributed 15% of the variance in general ability, bilingual background contributed another 5% of the variance in general

ability, mother's education another 2% and critical thinking disposition contributed an additional 1.4%. Altogether the variance explained by the four variables on general ability was 24%.

In the next step, reading comprehension was regressed on the other variables conceptualized as having an effect on it, that is Malay language, sex, and grade level. The result is given in Table 11. 19.

From the table it was observed that the four variables had significant effects on reading comprehension, with general ability having the largest effect and sex the least.

Table 11.19
Multiple Regression with Reading Comprehension as the Dependent Variable

Var	R	R2	R2 Added	b	S E of b	Std b
1. General Ability	.3325	.1106	.1106	.0765	.0156	.1976
2. Grade Level	.4173	.1741	.0635	2.0293	.2607	.2874
3. Malay Lang	.4672	.2182	.0441	2.9914	.5567	.2156
4. Sex	.4878	.2379	-.0197	-2.4021	.6242	.1126

The total variance accounted for through reading comprehension was about 24%.

In the next step, critical thinking was also regressed on the remaining variables, thought to have significant effects on it, that is, grade level, gender and bilingual background of the pupils. The result, shown in Table 11.20, revealed that only two variables, grade level and gender had significant effect, with gender and grade level having a small contribution of 1% each to the variance in critical thinking disposition.

Table 11.20
Multiple Regression with Critical Thinking Disposition as the Dependent Variable

Var	B	R2	R2 Added	b	S E of b	Std b
Sex	.1130	.0128	.0130	-3.2226	1.1244	-.1179
Grade Level	.1600	.0256	.0115	1.3007	.4721	.1133

The significant standardized regression coefficients (Standardized b or BETA) were actually the path coefficients where hypothesised causal relationships known as the model of critical reading had been diagrammatically shown in Figure 11.3. The path diagrams indicate linear and additive relationships among the set of variables. The model that was constructed was of a recursive type. In the model, X1, X2, X3, X4, and X5 were exogenous variables while the rest of the variables were endogenous. General ability reading comprehension and critical thinking disposition was taken as mediating variables.

In a path diagram, the straight lines with the arrow heads indicate the direction of effect. The path coefficients are standardized coefficients, that is $P_{91} = B_{91}$. These path coefficients represent the proportion of the standard deviation of the dependent variable directly accounted for by an independent variable when the influence of all other variables are controlled. The first subscript of the path coefficient indicates the effect (or dependent variable) and the second indicates the cause (the independent variable). Thus P_{91} shows the direct effect of variable 9 on variable 1.

FIGURE 11. 3
PATH DIAGRAM FOR CRITICAL READING ABILITY
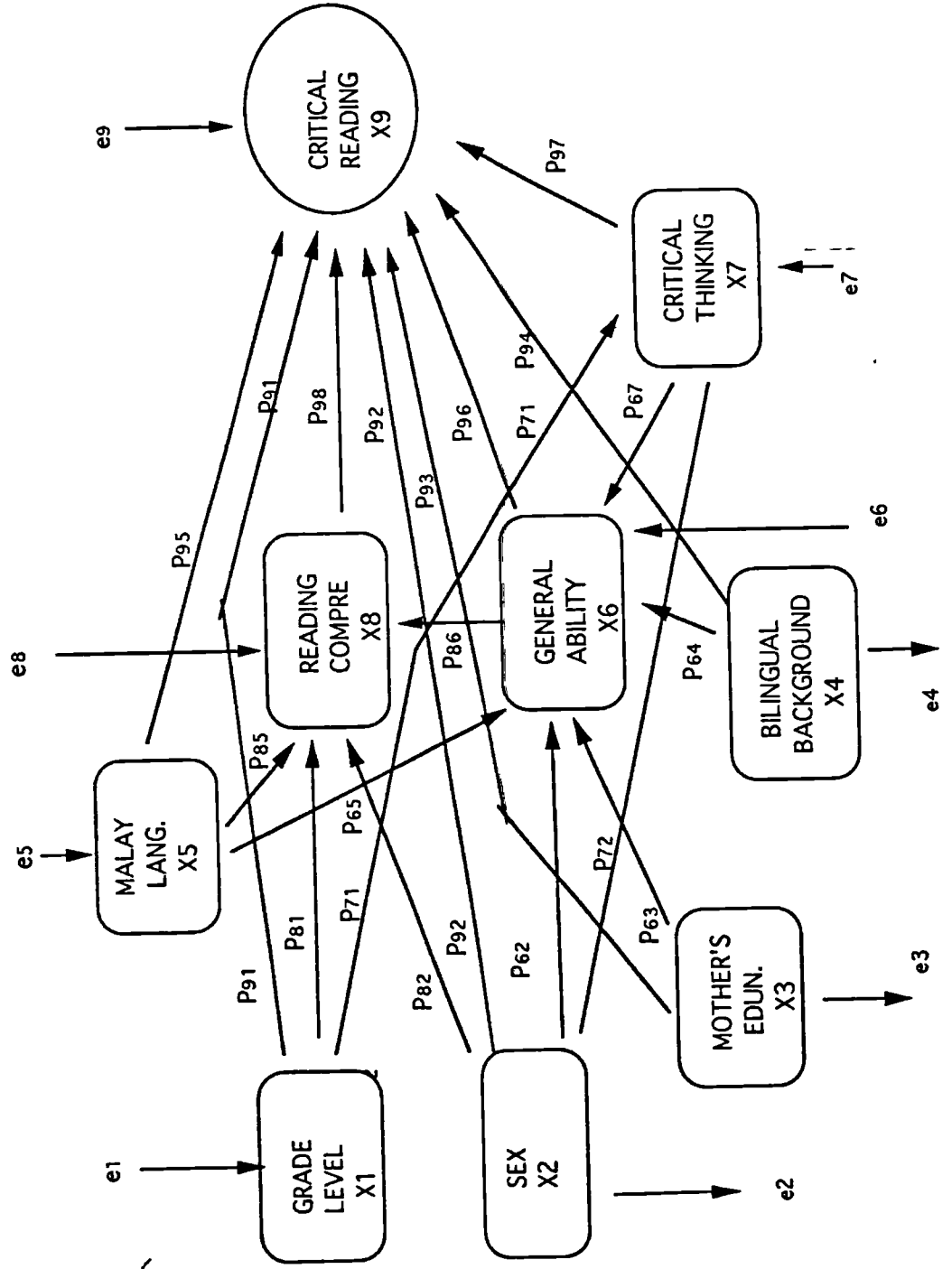
After the path model had been specified, a set of structural equations was developed and analysed to provide numerical estimates for the path coefficients. Shown below is a set of structural equations for all explanatory variables affecting critical reading ability. Each variable is in its standard form.

Structural Equations

$$Z_1 = e_1$$

$$Z_2 = e_2$$

$$Z_3 = e_3$$

$$Z_4 = e_4$$

$$Z_5 = e_5$$

$$Z_6 = P_{67} Z_7 + P_{64} Z_4 + P_{63} Z_3 + P_{62} Z_2 + e_6$$

$$Z_7 = P_{71} Z_1 + P_{72} Z_2 + e_7$$

$$Z_8 = P_{85} Z_5 + P_{86} Z_6 + P_{81} Z_1 + P_{82} Z_2 + e_8$$

$$Z_9 = P_{98} Z_8 + P_{97} Z + P_{96} Z_6 + P_{95} Z_5 + P_{94} Z_4 + P_{93} Z_3 + P_{92} Z_2 + P_{91} Z_1 + e_9$$

11.10 Effects of Variables on Critical Reading Ability

The effects of the following variables will now be discussed.

11.10.1. General Ability

The equation for calculating the path coefficient for general ability is:

$$r_{69} = P_{96} + P_{98} P_{86}$$

$$(\text{ DE}) + (\text{ IE })$$

$$= .4768$$

General ability had a direct effect on critical reading ability and an indirect effect through   reading comprehension as the mediating variables. The large effect of this variable was expected as its correlation with critical reading was the highest ($r = .54$, $p = .001$). The result is also supported by findings from other earlier studies.

11.10.2. Reading comprehension.

$r\,89 = P_{98}$

(DE)

$= .2711$

General reading comprehension had a direct effect, but no indirect effect on critical reading ability, but it mediated between critical reading and many other exogenous variables. Pupils who were good at comprehension were able to understand and to read between the lines thereby enabling them to be better critical readers. Reading comprehension had been found to correlate significantly with critical reading ability in studies by Wolf et al (1967), Sochor (1959) and others.

11.10.3   Critical Thinking Disposition

$r_{79} = P_{97} + P_{98}P_{67}\,P_{86}$

(DE) + (IE   ) $= .1205$

There was no significant direct effect of critical thinking disposition on critical reading ability, the BETA value being only .06, therefore the direct effect of this variable was very minimal and not significant, but the total effect was significant, .12, as the bulk of its indirect effect came through general ability. Through this variable as the mediating factor, two other paths had been identified.

11.10.4   Grade level

$r_{19} = P_{91} + P_{98}\,P_{81}\,+P_{97}\,P_{71}$

(DE) + (IE   ) $= .2162$

Grade level had a direct as well as an indirect effect through reading comprehension and crit'cal thinking disposition. Pupils who were at a higher grade level were able to benefit from the schooling process and instruction enabling them to become a better critical reader, which age or maturity alone could not have accomplished.

11.10.5. Sex

$$r_{29} = P_{92} + P_{28} \cdot P_{98} + P_{62} \cdot P_{96} + P_{72} \cdot P_{97}$$

$$(\text{DE}) + \quad (\quad \text{IE} \quad)$$

$$= -.1365$$

From the path model it seems that one's gender exerted a direct as well as an indirect effect on critical reading ability, with the girls performing better than the boys. This variable also had an effect on general reading comprehension and critical thinking disposition, from which its indirect effects on critical reading ability were obtained. It could be hypothesized, from the result, that the girls were more able academically, better at reading comprehension and more competent in Malay language than the boys. Hence, they were significantly better critical readers than their male counterparts.

11.10.6 Bilingual Language background

$$r_{49} = P_{94} + P_{64} \, P_{96}$$

$$= (\text{DE}) + (\quad \text{IE} \quad)$$

$$= 0.0933$$

The incidence of bilingualism in the homes did not have any significant direct effect on critical reading, (BETA = .008) but this variable had exerted an indirect effect through general ability, from which most of its total effects came; but the total effect of this variable was not significant and substant al.

11.10.7 Malay Language

$$r_{59} = P_{95} + P_{85} . P_{98} + P_{65} . P_{96}$$

$$= (DE) + (\quad IE \quad)$$

$$= \cdot 2903$$

Malay language competency also did not have any significant direct effect on critical reading ability according to the model, but it exerted indirect effects through reading comprehension and general ability. Therefore the total effect was significant and very substantial. It could be inferred that to be able to read critically depends on one's language competence which is effected indirectly through one's reading comprehesion and general ability .

11.10.8 Mother's Education

$$r_{39} = P_{93} + P_{63} . P_{96}$$

$$= (DE) + (\quad IE \quad)$$

$$= .1784$$

Socio-economic status as represented by mother's education had a small non-significant direct effect on critical reading ability according to the model, but it too exerted an indirect effect through general ability, with the result that the total effect of this variable was small but significant. Therefore the educational level of the mother could be said to exercise a significant indirect effect on critical reading in the Singapore context. Mother's educational level had also been found to have a relationship with academic achievement of pupils in Singapore in studies by Aziz (1990) and Bibi Jan (1992).

The path diagrams showing the effects of the eight variables on critical reading is shown in Figure 11.4. Paths with statistically non-significant values were deleted.

The summary of the effects of various variables on critical reading as evident in the exploratory model is given in Table 11.21.

FIGURE 11. 4
THE FINAL MODEL OF THE CORRELATES OF CRITICAL READING ABILITY
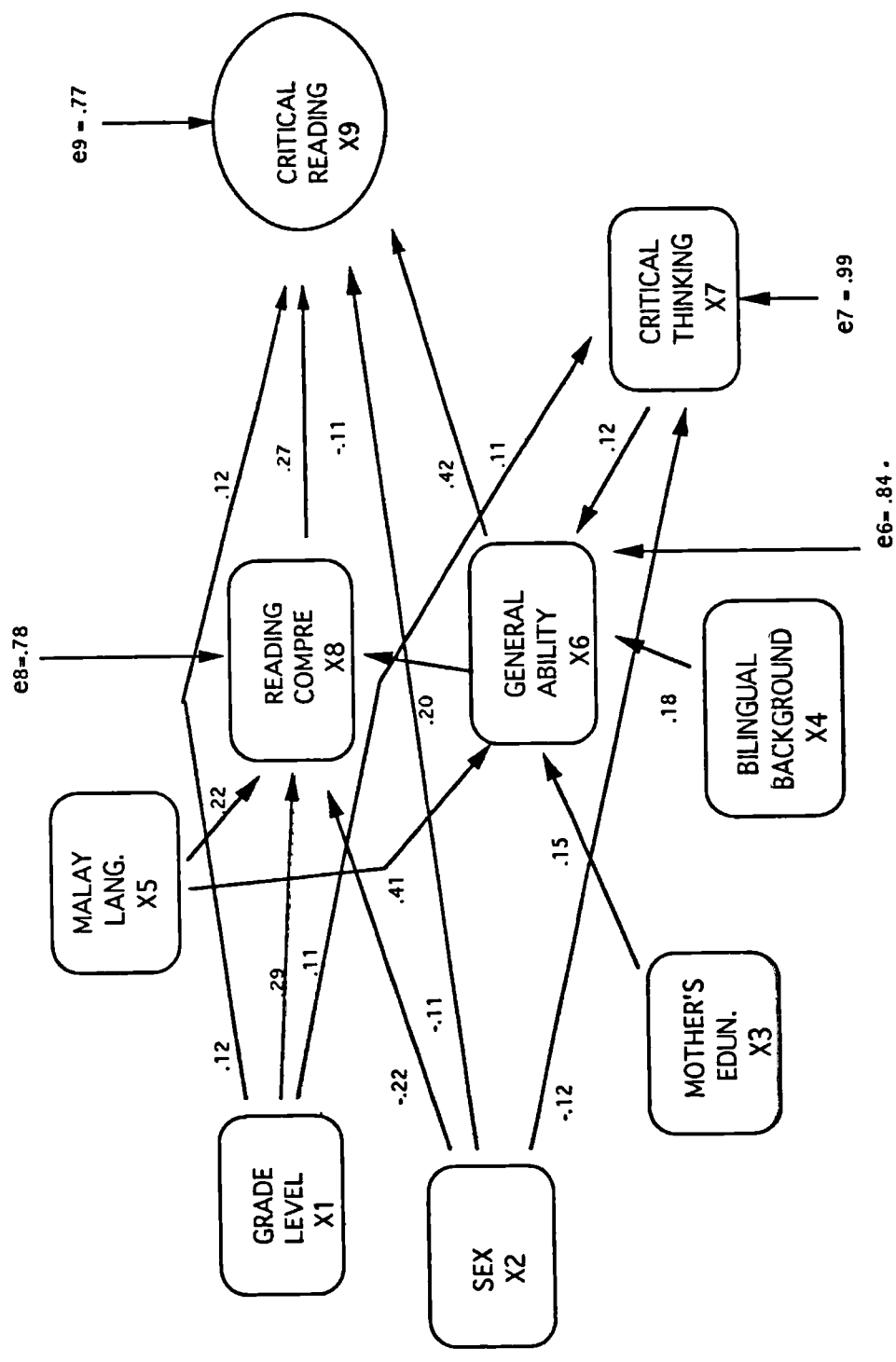
Table 11.21
Summary of Direct and Indirect Effect of Variables on Critical Reading Ability

Variable	Zero-order Correlation	Direct Effect	Indirect Effect	Total Effect
Reading Compre.	.47*	.271*	.000	.271*
Critical Thinking	.18*	.063	.057	.121*
General ability	.54*	.420*	.054	.477*
Grade level	.24*	.125*	.092	.216*
Sex	-.23*	-.112*	-.024	.137*
Bilingual background	.03	.008	.085	.093
Malay Language	.22*	-.036	.254*	.290*
Mother's education	.10*	.054	.125*	.178*

11.11 Summary on the Exploratory Model of the Correlates of Critical Reading Ability.

The conceptual framework presented in Figure 11.3 hypothesized that critical reading ability could be influenced directly by critical thinking ability, general reading comprehension ability, general ability, Malay language competency, pupils' sex, bilingual language background of the pupils, pupils' socio-economic status, grade level and Malay language competency.

The result of the path analysis of each variable on critical reading ability as the dependent variable disclosed that all of these variables except for bilingual language background had significant causal effect on critical reading. The five variables with the largest effects were general ability, Malay language competency, general reading comprehension, grade level and mother's education respectively.

The indirect effects through mediating variables were determined through reading comprehension, general ability and critical thinking

disposition as the mediating variables. The indirect paths through reading comprehension showed that most of the variables, general ability, sex, grade level, and Malay language competency had causal relationship with critical reading through reading comprehension ability. The indirect paths through general ability showed that four variables, Malay language, mother's education, bilingual language background and critical thinking disposition, had a causal relationship with critical reading through general ability. Lastly, the indirect paths through critical thinking disposition suggested that two variables, sex, and grade level, had causal relationship with critical reading through critical thinking disposition as the mediating variable.

Based on these results the exploratory model was presented to explain the relationship between selected predictor variables and critical reading ability. This final model seems to be generally consistent with the postulated model hypothesized earlier in the research process, with some minor modifications on the effect of bilingual background, academic stream and age. Hence, the modified path model was able to explain the differential effects of the variables under study, which could not be discerned through ordinary correlation or regression analysis.

It was expected that the variable, general ability, came out as the strongest predictor surpassing reading comprehension ability as it underlies Malay language competency, reading comprehension as well as critical thinking disposition. General ability and other similar variables like academic achievement and intelligence had been shown to have a large contribution to critical reading ability, by other studies such as those by Maney (1958), Wolf (1968), Sullivan (1973). Since general ability correlated highly with other academic and cognitive variables, those variables too would have exerted a large influence on critical reading.

Unexpectedly, Malay language was revealed to have the second largest effect on critical reading surpassing that of general reading comprehension. The major effect of Malay language was mainly indirect, through general ability and reading comprehension ability, its direct effect on critical reading is insignificant. The importance of the language factor in critical reading cannot be over-stressed, one need to have a good grasp of the vocabulary, grammar and syntax of the language before getting to the deeper meaning of the text.

As far as reading comprehension is concerned, it has been shown that it had a moderately high correlation with critical reading and the third largest contributor to the ability to read critically. Therefore it i also hypothesized that ability in reading comprehension has a causal relationship with critical reading. Comprehension ability is in turn influenced by competency in Malay, the grade level of the pupils, academic stream and bilingual language background which together contributed 10% to its variance.

Grade level had a direct and an indirect effect on critical reading. Its inclusion in the model signals the importance of school instruction in enhancing pupils' ability in reading critically. The fact that grade level and age were highly correlated made it necessary to exclude age from the model, to minimize the confounding effect.

Of the socio-economic variables, mother's education was shown to have a sizeable effect on critical reading ability. This result is quite unexpected and would need further follow-up study.

One's gender also has a causal direct link with critical reading besides the ability to comprehend. The bilingual background did not have any significant effect on critical reading, although the analysis of variance performed on the means of this variables showed small significant differences in critical reading ability.

Compared to all other variables, except bilingual language background, a critical thinking disposition had a small significant effect on critical reading ability mainly through general ability.
It did not have any direct effect on the criterion variable. This result is also unexpected, as it seems to be inconsistent with the literature on the subject, although, as had been mentioned earlier, such tests on the *disposition* aspect of critical thinking had never been known to exist before. Since this study is exploratory no theoretical implication concerning the relationship between critical reading and critical thinking disposition is made. But it could be assumed that the construct underlying the disposition to think critically could be entrenched in general ability through which most of the high correlations between critical thinking and reading were derived.

It must be mentioned, however, that critical thinking disposition is an affective measure which normally records low relationships with the criterion variable, as was shown from the zero-order correlations

from this study (r = .18). Moreover, without setting the task of weighing the differential effects of several variables on critical reading through path model, one would be unable to quantify its effect as well as make concurrent comparison of its effects with other variables in the model.

Taking the effects of all the variables in the Model of the Correlates of Critical Reading Ability into consideration, critical reading ability seems to be influenced largely by general ability, Malay language and reading comprehension, moderately influenced by grade level (or age), socio-economic status and gender and critical thinking disposition. Bilingual language background seems to have non-significant effect on critical reading.

CHAPTER 12

CONCLUSIONS, IMPLICATIONS AND SUGGESTIONS

12.1 Summary and Discussion of Results of the MLCRT Data

The first of the two main purposes of this study was to develop a set of instruments to measure the critical reading ability and critical thinking dispositions of Malay secondary school pupils learning the Malay language. Three versions of the test on critical reading, the trial-MLCRT, the actual MLCRT and the Revised-MLCRT were developed and administered to the appropriate sample identified for the study. These instruments were created based on the theoretical model of the study in which critical reading ability, defined as the ability to comprehend, apply, analyse, synthesize and evaluate written material in a critical manner, is posited as a process of critical thinking activated during reading. The ability of reading critically is postulated to be manifested in skills or subskills of critical reading ability. The subskills were:

- the ability to evaluate deductive inferences,
- the ability to evaluate inductive inferences,
- the ability to evaluate the soundness of generalization,
- the ability to recognize hidden assumptions,
- the ability to identify bias in statements,
- the ability to recognize author's motives,
- the ability to identify facts and opinions,
- the ability to identify relevant and irrelevant materials,
- the ability to recognize similarities and differences and
- the ability to evaluate strength of arguments.

The trial MLCRT consists of 100 items and was administered to 353 pupils in two secondary schools in Singapore. The trial-test only achieved an overall reliability of .74 Alpha coefficient and ranged from an Alpha of .16 to .74 for the five grade levels. But it had good internal consistency, achieving a split-half reliability of .93.

Then the actual test was developed after an item analysis of the 100 trial items were conducted using two main criteria, item discrimination and item difficulty. The product was a revised test, The Malay Language Critical Reading Test (MLCRT), utilising 82

items which was administered to 1444 Sec 1 to Sec 5 pupils in 12 secondary schools in Singapore. These pupils form the standardization group of the MLCRT and later the RMLCRT.

A reliability study conducted on the 82-item MLCRT showed it to have a reliability of .84 for the whole sample. Item characteristic curves for every one of the 82 items were constructed to identify the internal pattern of item responses; from these graphs it was disclosed that, except for a small number of weak items, almost all the other items were good and acceptable according to established criteria. Through the item characteristic curves by gender, the possibility of the item being biased was also examined but no gender biases were found. This test was therefore an improvement in reliability over the earlier trial instrument although a smaller number of weak items were still present.

Subsequently a *post hoc* revised test (RMLCRT) was reconstructed to make further improvements to the scale. Seventeen weak items were discarded, using the item facility, biserial correlation coefficient as a criterion for item retention. The outcome was that the RMLCRT was a shorter test with 65 items and only nine subskills. A very small improvement in the reliability of the test was achieved, from an alpha coefficient of .84 to .86, but otherwise the new RMLCRT and the actual MLCRT are identical, having a correlation of .97.

The internal item consistency, the convergence validity and results of 'expert' responses to the MLCRT were forwarded as evidence of the construct validity of the RMLCRT. For item validity, the item total correlation and subskill-item correlation analysis were shown to range from moderate to high. A factor analysis of the RMLCRT and some cognitive and non-cognitive variables revealed the RMLCRT to converge with reading comprehension and Malay language variables which could be taken as an indication of some similar underlying construct with reading and language.

A factor analysis technique, namely the varimax rotated factor analysis was applied to all the items and then to the subskills in order to explain the underlying construct. The procedure extracted one main factor indentified as the general critical reading factor to be the underlying trait of the scale. This result is at variance with the initial postulated model where two dimensions; the core

critical reading and the logic-related dimension were thought to underlie critical reading-thinking process.

12.1.1   Performance of a Different Subsample on the RMLCRT

Standandization and norming of the RMLCRT as a test on the critical reading ability of Malay pupils in Secondary schools in Singapore was conducted using the Rasch model and the traditional model. A different pattern of distribution of critical reading ability with regard to subgroups in the population was identified in the study.

The Express pupils were shown to be more able critical readers than the Normal stream pupils; they obtained a significantly higher mean on the trial test, the actual MLCRT and the revised test.

Gender differences in critical reading ability exist: the girls were shown to obtain a higher mean in the RMLCRT than the boys in the same sample.

The performance of pupils in the five grade levels was also significantly different. Pupils on the higher grade levels were consistently shown to obtain higher means on the test. The exception was with the Sec 5 pupils who were shown to obtain lower means than the Sec 4 pupils. This is to be expected as the Sec 5 pupils comprised pupils in the Normal or weaker stream only, whereas the Sec 4 sample included the Express stream pupils as well.

12.1.2   Reliability Indices of RMLCRT Compared

As had been stated elsewhere, the MLCRT was the first test on critical reading in Malay Language ever constructed, therefore strictly speaking, there should be no parallel for comparison. However, critical reading and thinking tests for critical reading and thinking in English for the different age groups and school population do exist, therefore a comparison of the RMLCRT with other tests on critical reading was made, bearing in mind a different language was used in RMLCRT.

The RMLCRT compares well with other critical reading tests such as Worden's Critical Reading/Thinking Appraisal, the Watson-

Glaser Critical Thinking Test, and Wolf et al's Critical Reading Test.

The KR 20 Test of Reliability was used by Worden during the first and second administration of his test, the Worden's Critical Reading/Thinking Appraisal (1980). For the first administration the reliability obtained was .84 and for the second, it was lower, .80. The RMLCRT has a higher reliability than that of Worden's.

The reliability of the Watson-Glaser Critical Thinking Test, (split half) was .84 . The same test used in a Malaysian context by William (1973) who used the modified form of the Watson Glazer on 63 Pre-university Malaysian students, was found to achieve a lower reliability of only .66; which the author attributed to the instability of the individuals taking the test. This compares well with the RMLCRT which achieved a reliability of .86, using Cronbach's alpha.

The RMLCRT also compares well with Wolf et al's Critical Reading Test for the Primary level which managed to record a reliability of .67 to .83, for the Intermediate level the reliability (KR 21) of the instrument ranged from .63 to .79.

Therefore, when compared to the above tests, the RMLCRT is indeed as reliable if not more reliable than similar established tests of critical reading and thinking.

12.1.3   Validity of MLCRT Items

The validity of every item, its internal structure, and item bias of the original MLCRT was examined in detail. The percentage of inferior items in the actual MLCRT was shown to be low, even before these items were discarded in the revised scale. The RMLCRT therefore had no weak items at all. In this context, it is important to note that Worden's Critical Reading/Thinking Appraisal had a sizeable number of items with low discrimination. Similarly, according to Govier (1987), the Watson-Glaser Critical Thinking Appraisal had 16% 'weak' and controversial items. The psychometric property of the items of the RMLCRT is thus comparable with other tests of critical reading and thinking ability.

12.1.4. The RMLCRT Subskills

The construction of the actual MLCRT was based originally on 10 subskills identified to constitute critical reading ability. It was shown through intercorrelations of subskill and subskill-total correlation of MLCRT that one subskill, the ability to evaluate deductive inferences, was not very consistent with the rest of the subskills and had the lowest correlation with the scale. Thus the model was revised to exclude the 'ability to reason deductively' in the RMLCRT.

A factor analysis of these remaining subskills showed that they load into only one main factor, the general critical reading dimension.

Therefore as to the question of whether critical reading ability is a holistic or a separate skill, it could be concluded from the result of the present study that there is evidence to support the holistic, general nature of critical reading ability.

12.1.5 The Exploratory Model of the Construct of Critical Reading and Thinking Ability.

The conception of the Model of the Construct of Critical Reading and Thinking outlined in Chapter 7 underwent a minor modification in the light of the result of this investigation. Critical reading, defined as the ability to recognize, comprehend, apply, analyse, synthesize and evaluate written materials in a critical manner, is conceptualized as an application of critical thinking during the reading process. To critically evaluate something during reading involves a reflective, fair-minded and rational way of thinking before making judgements on the text. It thus involves both the process of critical reading and thinking. The manifestation of critical reading process in the reading act will involve the use of skills or subskills and one of the points investigated in this study was the nature and composition of these subskills thought to constitute the act of reading and thinking critically.

In the modified exploratory model, only one main holistic dimension or component of critical reading, the general critical reading skill was presented. It must be stressed, however, that the model is exploratory in nature, and the result is generalizable within the limits of the present study.

12.2 Summary and Discussion of CTDI Result

Another instrument standardized for the study was the Critical Thinking Disposition Inventory (CTDI) which was also trialed and standardised in the same way. The trial-CTDI originally consisted of 40 items designed to represent the disposit'on of the pupils towards critical thinking, but upon revision, a 38-item inventory was designed and administered to 1024 pupils for standardization. Prior to the psychometric analysis, the content validity of the CTDI was established by experts in Malay language, who posited that the content of the CTDI seems to elicit critical th nking disposition. The reliability of the CTDI was found to be .90 using Kuder Richardson Formula 20 and .92 using the split half method. Within each grade level, the reliability coefficients ranged from .88 to .92.

The mean of the CTDI scale is 52 with a standard deviation of 14. The percentile rank, the normalized Z scores and T scores were calculated and available for reference. The validity of the construct of critical thinking disposition as measured by the CTDI was established through several methods. The items, measured by the Pearson and biserial correlation coefficients were shown to have internal consistency and validity. The discriminant validity of the scale with other tests such as the PSLE, the RMLCRT and reading comprehension test were used to show that the construct measured by the CTDI was different from those tests. The CTDI has low correlations with those tests; factor analysis of all the tests including CTDI indicates that CTDI does not share common variance with those tests. It had high loading on the affective factors.

Then, the items of the CTDI was also factor analysed. Results of the factor analysis disclosed a complex pattern of relationships underlying this construct, but one main factor was identified, which consists of a core factor of critical reading and thinking disposition. Some of the minor factors identified were dispositions towards detecting contradictory statements, understanding stories, disposition towards getting to the central meaning, disposition towards making comparisons, disposition towards finding the truth or reliability of statements, questioning author's motives, awareness of advertizing devices and the detection of biases, exaggerations and propaganda materials.

A test on dispositions towards critical thinking in the format designed as the CTDI was not known to exist for comparitive purposes. In the present study, sufficient evidence is available to show that the CTDI is a reliable and valid instrument.

In the absence of other measures of assessing critical thinking disposition it is not possible to compare the disposition of these subjects with that of others. Among the subjects studied, it was found that slightly more pupils had critical thinking scores below the mean than above the mean, and the difference in the disposition between the low and high critical thinking disposition groups is significant at the .001 level, with t value of 38.35 within 1022 degrees of freedom.

This study indicates the existence of significant variation in critical thinking disposition of the subjects, with more subjects categorised in the below average or below the mean of the scale than the above average category. This result which provides some baseline data on the construct suggests the slightly low critical thinking disposition of the population under study.

12.3 Summary Result of the Exploratory Model of the Correlates Study

The second part of the study was mainly focussed on identifying the differential effects of the selected variables on critical reading ability with a view to presenting a model of the correlates of critical reading ability among Malay pupils in Singapore. A subsample of the standardization group comprising pupils who provided all the relevant information in the questionnaire were utilized. These 580 pupils, although small in comparison to the standardization group, was also representative of the Malay school population in Singapore.

The result of the analysis of variance and correlation study supported all the seven hypotheses that were examined for their relationship with critical reading ability. They were:

- The personal factor swhich were age and sex,
- The socio-economic factor represented by fathers' and mothers' educational level,
- General ability represented by the performance on PSLE,
- Malay language competency,

- The school or course factor such as academic stream and grade level,
- General reading comprehension ability,
- The Critical Thinking Disposition as measured by the CTDI, and
- The bilingual language background.

Academic stream and age were dropped from the model because of their very high correlation with general ability and grade level respectively as the high correlation coefficient could have confounded the data for path analysis.

All other variables which correlated significantly with RMLCRT were subjected to a path analysis for the purpose of explaining, specifying and quantifying the effects of the selected variables on critical reading ability.

Initial multiple regression analysis produced five exogenous variables having direct effects, reaching .05 limits and contributing altogether 41% of the variance in critical reading ability. They were general ability which exerted the largest influence, general reading comprehension ability, the gender of the subjects and their grade level and mother's education. Then all the independent variables were analysed through a multistage path analysis where general ability, reading comprehension and critical thinking comprehension mediated between the exogenous variables and critical reading ability as was postulated in the original hypothesized model.

In the final path model, all the selected variables including Malay language, mother's education and critical thinking which initially did not reveal any significant direct effect, were found to exert significant total effects on critical reading in varying degrees, whether directly or indirectly. The effect of bilingual language background was the smallest and did not reach any statistically significant level. The order of the effects from the largest to the smallest was:

1. general ability
2. Malay language
3. reading comprehension
4. grade level
5. mother's education
6. sex
7. critical thinking, and

8.   bilingual language background

Hence, according to the final model, general ability, Malay language and reading comprehension ability had causal relationships with critical reading. Grade level, socio-economic background as represented by mother's education, sex and critical thinking disposition also had significant effects, but the effect of bilingual language background was small and non-significant.

This finding, to a large measure is consistent with initial postulation of the model except where Malay language ability and critical thinking disposition were concerned. It seems that the earlier hypothesis had misread the large effect of language competency, in this case Malay language, and overestimate the effect of critical thinking disposition. Malay language was shown to have larger effect than reading comprehension while critical thinking disposition had a small effect on critical reading ability . The effect of specific language factor was often overlooked in critical reading research, but by utilizing bilingual Malay-English subjects, this study managed to extract some important findings on the major effect of the language factor in determining critical reading ability. This is logical, as critical thinking disposition could not be exercised if one lacks competence in the language concerned.

12.4.   Discussion of the Main Findings of the Correlates of Critical Reading Ability.

Many factors contributing towards critical reading and thinking were cited in past researches. Most of the factors found to be related to critical reading as measured by the RMLCRT is consistent to the findings of other studies. The present model reveals a complex interactions of variables (general ability, reading comprehension, Malay language competency, critical thinking disposition, sex, grade level, socio-economic and bilingual language background) having effects on the criterion variable which is critical reading ability.

The largest effect on critical reading shown in the final correlates model is attributed to general academic ability. School and academic ability factors were positively correlated with critical reading ability. The PSLE which could be classified as a general ability factor has the highest correlation with critical reading

ability, with an r of .54 and exerting the largest effect of .48 path coefficient. A similar result was obtained by Follman and Lowe (1972) and Sullivan (1973) with their result on the relationship between critical reading and intelligence/ academic ability, for Grades 8 to 12, where a correlation coefficient of .48 to .71 respectively was obtained.

The importance of pupils' ability variable such as general academic ability in explaining the variance of critical reading reveals a close link between critical reading and intelligence and tends to support the view that the better pupils are also the better critical readers. Critical reading is beyond doubt a measure of general academic ability, hence enhancing one's critical judgement, and would therefore also enhance one's academic performance.

As revealed in this study, a substantial effect of critical reading ability is due to the ability to comprehend the reading materials. General reading comprehension exerts a largest effect on critical reading as well mediating between a few variables and critical reading. Most past studies cited in the literature report significant correlations ranging between .41 to .76 between the reading comprehension and critical reading of the primary and secondary grades . The relationship between these two variables in this study was also found to be moderately high, (r = .47).

The close similarity of this finding with that of other studies, even though one is in general reading comprehension in English and the other in Malay language is quite remarkable; the correlation between critical reading in English and reading comprehension in the same language ranges between .41 and .69; Glazer (1941) , Trela (1967) and, Follman and Lowe (1973) for instance, reported correlations of .41, .69 and .51 respectively. The result of this study confirms the close relationship between the two variables.

Could general academic ability and the ability to comprehend the text then be the universal underlying factor of critical reading ability? The present finding seems to support the view.

Another important theoretical finding is suggested in the larger effect of language, in this case the Malay language, on general ability and reading comprehension, than on critical thinking disposition. Clearly competency in the target language is an important pre-requisite to critical reading but not on critical

thinking. Therefore critical reading is much more an *ability* rather than a *disposition* construct. It means that a person who is highly disposed towards being critical or critically-minded but who lacks the ability component will not be a successful critical reader as another person who has the *ability* but not the *disposition*.

The findings also point to the significance of the language competency factor in critical reading, without the necessary language competency, part of the underlying meaning or hidden meaning in language could be missed out, thereby crippling one's ability to comprehend and hence, to critically evaluate the reading materials. The large effect of Malay language on general ability also shows the importance of language in human cognition which is the backdrop of this study on critical reading and thinking. This again is culturally bound.

Then contrary to the hypothesized model of critical reading and thinking ability, critical thinking was found to exert very small indirect effect on the ability to read critically. Its main effects was mainly through general ability. On hind-sight this phenomena should be quite normal as affective variables normally show low correlations and therefore smaller effect on cognitive variables such as critical reading.

The effect of grade level on critical reading is also consistent with past studies, where pupils in the higher grade level, having more exposure and experience in reading were found to be better critical readers. It indicates the positive effect of schooling or teaching in influencing one's ability. Similar effect of age on critical reading ability is also evident. This is significant especially in the Singapore context where grade level and age in secondary school are not synonymous unlike other school system which practices automatic promotion. The substantial influence of grade level or number of years of instruction to critical reading ability gives credit to the role of school instruction in developing the critical minded.

Academic stream was not included in the final model as it was shown to be highly correlated with general ability. The effect of stream would have been similar to general ability as it was on the basis of academic achievement or general ability that the Singapore school pupils were streamed at the end of primary schooling.

It is interesting to note that gender and mother's education had substantial effects on critical reading ability. In past studies on the relationship between gender and critical reading ability, Results were inconsistent although generally girls are known to be more competent in language and reading. The finding obtained in this study tends to contradict Wolf et al (1967), Gall (1973) and Downing (1973) who found no gender differences in critical reading ability. In fact Malay female students were found to be significantly better in critical reading ability as measured by the RMLCRT. The effect of gender was large and evident on a number of other variables such as reading comprehension, Malay language competency and critical thinking, but not on general ability.

The issue of gender is especially interesting to the Malay community in Singapore where more girls were graduating from the universities than their male counterparts. In the light of the present result, it could be suggested that basically the girls are as able as the boys academically (as borne out by the non-effect of sex on general ability), but they are better critical readers. Whether being better critical readers has an effect on the proportion of Malay graduates is not known; however many other variables (for instance, compulsory National Service for males) could come into play from the secondary level to Pre-university level which could have had substantial effect on the size of Malay undergraduate intake in the universities. Be it as it may, the above finding could only provide insufficent evidence. Further study such as looking into the culture-specific ways which had disadvantaged the males in the community would be appropiate.

It is expected that except for father's and mother's educational level all the socio-economic factors, viz. mother's income, father's income, number of people in the home and the type of housing had very non-significant correlations with critical reading ability. The results of this study are consistent with those of similar studies in the past between achievement, ability factors and socio-economic factors, although studies specifically on the relationship between critical reading and socio-economic factors had not been found.

The fact that it is the mother's and not the father's educational level that has had an effect on critical reading and general ability is an interesting finding and deserves more discussion. For

instance differences arising from gender could be attributed to the differential treatment or different child rearing pract ces among the Malays which could in turn be a result of the particular physical and psychological conditions in the home. It may be possible that the pattern of interaction between the mothers and fathers with their children among Malay families had a part to play; hence educated mothers were able to impart more values on critical thinking to the daughters than to the sons.

The importance of the above variables in the model could be a manifestation of the particular environment or context of the subjects under study. But the relationship of critical thinking disposition and critical reading is of greater general significance and is henceforth discussed. Contrary to the hypothesized model of critical reading and thinking ability, critical thinking was found to exert small indirect effects on the ability to read cr tically. Its main effects were mainly indirect, through general ability. On hind-sight, this phenomenon should be quite normal as affective variables normally show low correlations and therefore smaller effect on pupils' ability variables such as critical reading.

Nevertheless, the fact that the effect of critical disposition of the subjects was obtained indirectly through general ability, could indicate the importance of critical thinking in determ ning ability variables like critical reading and performance on the PSLE. Also as critical thinking is related to bilingual language background and the fact that it also correlated significantly with English language competency but not with Malay language competency shows that the more bilingual one's home background is, the more competent will one's English language be, and the more critically d sposed one becomes. Bilingualism and English language are fairly recent 'acquisitions' and represent modernization and western imported values, and as such it could be inferred that as the subjects become more modern or westernized (in the form of higher competency in English, more exposure to English in the home background and highly educated the mother), the more critical minded one becomes.

This study could provide a rich source of data for examining numerous other related questions like the comparison of cognitive component of Malay and English Language, relationship between and gender and competency in language, between bilingualism and general ab lity and so forth. But as far as critical reading and

thinking is concerned it is fair to conclude that the model of the correlates of critical reading and thinking ability does provide important insights into the complex relationships of the construct with other variables present in the context of the Malay pupil population in Singapore.

12.5   Uses of the Instruments

As a reading and thinking test, the RMLCRT could be fruitfully used as a formative and predictive test of critical reading ability in Malay Language.

As a predictive test, it could be used to predict and thereby categorise pupils according to their critical reading ability for the purpose of instruction. Pupils who are more critical could then be given a different kind of instruction from those who are less critically minded. The subskill study could provide a detailed aspect to be taught.

As a formative test, the RMLCRT could be used to identify the strengths and weakenesses of secondary school pupils in their critical reading performances. Generally the higher the scores obtained by the pupils, the higher their ability. The norm and percentile rank presented could be used as a norm against which to gauge the ability of the pupils. For instance, Student A who obtained a score of 20 has a T score of 41 and is placed approximately on the -0.87 on the Rasch ability scale, will therefore need more instruction in critical reading than student B who obtained a raw score of 47 which is equivalent to a T score of 64 and an estimated Rasch ability scale of 1.36 on critical reading ability.

The pupils' detailed score on specific subtests could also be used to prioritize certain subskill of critical reading ability besides being used as an instruction guide. For example if a class of pupils were found to do poorly in the detection of bias in writing, then that skill could be further developed with appropiate exercises and additional instruction given. On the other hand, if certain topics were found to be too easy, then it could be skipped or given less prominence.

12.6 Implications for Syllabus Design

The school curriculum should develop a more rational curriculum which incorporates critical thinking, reading as an important component in order to cultivate students to be 'good thinkers', that is having the critical spirit, the capacity for independent thinking and the readiness to explore and inquire. Ideally every subject area should emphasise this aspect of development, but in practical terms perhaps it is the language classroom that is most suitable for such innovation, as it is 'content free'. Therefore the present suggestion is directed toward language teaching, specifically Malay language teaching in Singapore.

In the syllabus for Malay as a Second Language (1972), critical reading did not have any consideration and treatment at all. As had been highlighted earlier in this study, critical reading ability is a multi-subskill component which students have to learn in order to gain mastery in the skill. Therefore, critical reading and the inculcation of critical thinking should form an important component of Malay language learning and teaching.

Below are listed some of the suggestions regarding the curriculum, the methodology and teacher's role in incorporating critical reading components in the curriculum.

1. A special critical reading and thinking component should be incorporated as part of the Malay Language syllabus in order to promote critical awareness and to enhance thinking skills among the pupils. This will be in line with the conscious effort to include more "thinking" components in all aspects of the curriculum.

2. The above component, critical reading, should be conducted mostly in the reading comprehension lesson, as it is essentially an extension or a higher level of reading comprehension ability, although it should also be taught in the listening component or in the writing lessons where the focus is more on enhancement and cultivation of the critical spirit.

3. All the ten subskills should be taught at least from Secondary One onwards so that when pupils complete Secondary 4 or 5 they would have been exposed to most if not

all of the important aspect of critical reading. This does not mean that only these ten subskills should be included; pupils should be exposed to more varied skills whenever the opportunity arise.

4. The easier subskills should be taught first before teaching the more difficult ones, for example, the subskill which had been identified to be easier such as the ability to evaluate inductive inferences could be introduced fairly early before attempting the more complex ones such as the ability to identify hidden assumptions in statements. In any case, the material and the targeted skill should be appropiate psychologically and cognitively to the pupils concerned.

5. A variety of tasks on critical reading and thinking should be given for proper mastery of the skill; the tasks could be in the form of both oral and written exercises. It could be conducted in a "communicative" way or in a more traditional or stuctured way. The most important consideration is to obtain full participaton and illicit genuine interest from the pupils. The pupils should be guided and facilitated to explore the ways of thinking, to explore the thoughts behind a piece of writing and to raise questions.

6. Teachers are crucial to the successful implementation of the curriculum. They should be a good model of the *inquirer* and the *critical thinker*, he or she must be able to use his or her imagination and creativity in planning meaningful tasks and lessons. Above all he or she has to show a caring attitude and integrity and do the utmost to promote reflective and independent thinking in her class.

7. Good texts will be an asset to learning and teaching. As far as possible, the passages or texts used should be taken from authentic materials, that is, from actual literary materials, such as story books, poems, songs and others which are functional and meaningful for the pupils, something which are related to their experience and in their daily lives. To use Lipman's terms, the texts should be literary, psychologically and intellectually acceptable.

8. An in-service programme for Malay Language teachers teaching critical thinking and reading should be mounted so

that a clear understanding of the objectives and methods of teaching critical reading and thinking could be devised and disseminated, before its incorporation into the schools. This programme could be offered by the various institutions either independently or jointly with the Ministry of Education in order to facilitate the successful implementation of the programme.

9. Curriculum developers, writers of Malay Language textbooks, workbooks and those involved in the production of teaching materials should also realize the importance of critical reading and the methods used to promote Malay critical readers and thinkers.

10. A more accepting and open environment for critical thought should be created for the inculcation of critical, creative and independent thinking. This, of course, creates a great challenge for the teachers and is more easily said than done. It means that teachers, parents - the whole community - have a role and purpose to cultivate such suitable environment.

12.7   Suggestions for Further Research

In the light of the present research, various follow-up studies could be further pursued.

1. The instrument developed in this study could be further refined if possible. For example, certain small revision of the few weaker items, which were identified through the item characteristic curves, but not through normal facility and discrimination index, could be conducted in future. Also in future test development, a more rigorous design involving methodologies such as interviews, could be used, before attempting the writing of items if time and resources permit.

2   The MLCRT could be adapted for use in the primary schools and also for the pre-university students. The easier subskills identified in this study could be the focal point in selecting other suitable subskills or other items for the targeted group, either in the form of additional subskills and items or by discarding certain items which could be too

difficult or too easy for the respective group. Another way would be in the choice of passages or statements used for the writing of items, where the readability of passages could be used to gauge suitability of items. The critical reading and thinking ability of the primary school or post-secondary Malay pupils in Singapore could then be established and comparisons made with the results of the present study.

3. Another interesting aspect will be the comparison of the critical thinking and reading ability of bilingual Malay pupils in English and in Malay language . The interesting question to be answered will be, how will the students fare in critical reading in English? Is their critical reading ability in English significantly different from their critical reading in Malay? Is critical reading ability language dependent or language independent?, and such like.

4. From another perspective, the study could be replicated to examine the critical reading ability of non-Malay pupils in Singapore. The findings could then identify the common areas of strengths and weaknesses as well as identify the differences, if any, with the Malay pupils in general. Then further research into the cultural and ethnically-related lifestyles could be investigated to determine the specific causes or factors that enhance or constrain critical thinking.

5. Another line of research, which pertains to classroom teaching will be on the approaches and methods of teaching critical reading. This line of research could experiment on a more effective method of teaching critical reading.

6. Further research could attempt to determine the pattern of causal interrelationships between critical reading, critical thinking, academic ability and other interesting variables through the use of the path analysis model.

7. Case studies using largely qualitative data could be undertaken to reveal the factors that contribute the most to the high achievement of successful Malay students.

8. In order to study the developmental trends of pupils' critical reading and thinking ability, longitudinal studies could be

carried out to follow the same group of pupils through their education from Primary level to Pre-university classes.

9. Another interesting study will be a comparative study on the critical reading and thinking ability of pupils of similar cultural background as the Malays in Singapore, namely pupils in Indonesia, Malaysia and Brunei.

The nine lines of research development suggested above are of direct relevance to the present study. Further afield, there will surely be a need for research into critical thinking and reading at the various levels, for various languages as well as within the different school and home environments using a variety of research methodologies including ethnographic and sociological approaches.

12.8 Concluding Remarks

This study represents an attempt to investigate the critical reading and thinking ability of Malay Singaporean students in the midst of a wider problem of low academic achievement of the Malay pupils in general. While general ability was shown to have an effect on critical reading ability, and general ability is influenced by critical thinking disposition, there may be other variables having equally substantial effects on general academic ability not examined in the model.

The subjects under study had displayed a range of critical reading abilities and thinking dispositions. One should caution on the danger of generalizing too much from the research findings, such as attributing low critical reading and thinking as the main cause of low academic achievement among Malay pupils. Nevertheless, the following conclusion drawn from the findings of the present study may be significant to the extent that it can cast some light on the problem of low achievement among Malay pupils. Any attempt to improve the critical reading and thinking environment in the homes and schools will only have a positive (rather than negative) effect on pupils' academic achievement.

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APPENDICES

APPENDIX 1

Percentage of a Primary One Cohort Passing PSLE By Ethnic Group

Year Enrolled In P1	Year PSLE Normally taken	Chinese	Malay	Indian	Others	All Races
1973	1978	81.6	68.4	70.0	71.4	78.3
1974	1979	83.3	69.1	70.7	75.9	79.9
1975	1980	86.2	70.9	73.1	71.0	82.6
1976	1981	88.2	71.9	77.2	81.2	84.9
1977	1982	86.3	70.6	72.5	81.7	83.0
1978	1983	88 0	69.6	75.8	80.1	84.5
1979	1984	87.4	69.0	75.2	84.5	83.9
1980	1985	87.7	70.5	77.4	87.4	84.6
1981	1986	89.5	71.2	78.0	85.6	86 2
1982	1987	90.0	71.4	78.8	93.8	86.8
1983	1988	91.8	71.0	76.5	86.9	88.2
1984	1989 ·	92.6	72.9	76.4	92.0	88.8

Figures for 1978-1980 P1 Cohort are estimates.

Source: Paper presented by the then Minister Of Education, Dr
Tony Tan at the Opening of the First National Conference and
Exhibition On Kindergarten Education, 15.11.1990.

APPENDIX 2

Percentage of a Primary One Cohort With At Least 3 'O'
Level Passes By Ethnic Group

TABLE REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES

Figures for 1978-1980 P1 Cohort are estimates.

Source: Paper presented by the then Minister Of Education, Dr
Tony Tan at the Opening of the First National Conference and
Exhibition On Kindergarten Education, 15.11.1990.

APPENDIX 3

Percentage of a P1 Cohort With At Least 2 'A' and 2 "AO" Passes By Ethnic Group

TABLE REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES

Figures for 1978-1980 P1 Cohort are estimates.

Source: Paper presented by the then Minister Of Education, Dr Tony Tan at the Opening of the First National Conference and Exhibition On Kindergarten Education, 15.11.1990.

APPENDIX 4

Number & Percentage of P3 Cohort Streamed to P4 Normal/Extended/Monolingual Course

Year	P3 Enrolment		Number and Percent streamed to		
			P4N	P4E	P4M
1984	CHINESE	31,773	29,301	1,327	1,054
			92%	4%	3%
	MALAY	5,858	4,551	370	520
			82%	7%	10%
	INDIAN	2,578	2,178	175	186
			85%	7%	7%
1985	CHINESE	35,038	32,632	1,343	893
			93%	4%	3%
	MALAY	5,430	4,480	395	464
			83%	7%	9%
	INDIAN	2,641	2,221	193	71
			84%	7%	7%
1986	CHINESE	30,614	28,382	1,333	740
			93%	4%	2%
	MALAY	5,276	4,330	398	451
			82%	8%	9%
	INDIAN	2,582	2,188	158	183
			85%	6%	7%
1987	CHINESE	31,158	28,674	1,605	733
			92%	5%	2%
	MALAY	5,335	4,323	530	428
			81%	10%	8%
	INDIAN	2,563	2,154	218	144
			84%	9%	6%

APPENDIX 5

Number and Percentage of PSLE Candidates Streamed to Secondary 1 Special/ Express and Normal Course

Year	PSLE Candidature		Number and Percent streamed to	
			S1S /S1E	S1N
1980	CHINESE	36,892	20,169 55%	11,654 32%
	MALAY	8,408	2,454 29%	3,621 43%
	INDIAN	3,500	1,305 37%	1,537 44%
1981	CHINESE	32,543	16,961 52%	10,696 33%
	MALAY	6,356	1,577 25%	3,677 42%
	INDIAN	2,954	11,119 38%	1,150 39%
1982	CHINESE	33,987	19,179 56%	11,398 34%
	MALAY	6,350	1,909 30%	2,828 45%
	INDIAN	2,994	1,121 37%	1,384 46%
1983	CHINESE	33,615	19,655 58%	10,500 31%
	MALAY	6,133	1,816 30%	2,683 44%
	INDIAN	2,732	1,105 40%	1,174 43%

APPENDIX 6

Percentage of a Primary One Cohort Passing Mathen   at
PSLE By Ethnic Group

TABLE REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES

Figures for 1978-1980 P1 Cohort are estimates.

Source: Paper presented by the then Minister Of Education D·
   Tony Tan at the Opening of the First National Confeience and
   Exhibition On Kindergarten Education, 15.11.1990.

APPENDIX 7

Percentage of a Primary One Cohort Passing First Language at PSLE Level By Ethnic Group

TABLE REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES

Figures for 1982-1984 P1 Cohort are estimates.

Source: Paper presented by the then Minister Of Education, Dr
Tony Tan at the Opening of the First National Conference and
Exhibition On Kindergarten Education, 15.11.1990.

#/ Refers to pass in either Elementary or Additional Mathematics

NEW EDUCATION SYSTEM

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┌─────────────────────────────────────────────────────────┐
│                      EMPLOYMENT                          │
└─────────────────────────────────────────────────────────┘
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UNIVERSITY
EDUCATION

Universities

POST
SECONDARY
EDUCATION

Appren
-tise
-ship

VITB
Institute

Polytechnics /
EDB Institutes
of Technology

GCE 'A' Level

Junior
Colleges

GCE 'O' Level

Secondary 5 Normal

GCE 'N' Level

SECONDARY
EDUCATION

Normal (Academic) / Normal (Technical) Course 4 years	Special / Express Course 4 years

Modified PSLE

PRIMARY
EDUCATION

ORIENTATION STAGE - PRIMARY 5 -PRIMARY 6
WITH 3 LANGUAGE STREAMS

FOUNDATION STAGE - PRIMARY 1 -PRIMARY 4

PREPARATORY STAGE - 1 YEAR

APPENDIX 9

Languages 'Primary One Cohort 1990 Speak At Hon e

Most Frequently Spoken Home Language

	Chinese	Malays	Indian	Othei	Ove ll
Total Number of pupils	28,074	6,920	2,925	340	38,- 9
English	26,2%	10.6%	46.6%	70.3^{c}c	25.4 o
Mandarin	67.9%	0.1%	0.4%	1.2^{c}c	49.9%
Malay	0.2%	89.9%	19.4%	27.4^{c}c	18.0%
Tamil	-	-	30%	-	2.3
Chinese Dialects	5.6%	-	-		4.1
Other Languages	-	-	3.5%	1 2%	0.1
	100%	100%	100%	100%	100%

Second Most Frequently Spoken Home Langl age

English	33.3%	83.1%	48.7%	2 .4%	43.
Mandarin	26.0%	0.3%	2.9%	20. c	19.
Malay	0.4%	10.2%	8.8%	2 .8^r	3.
Tamil	-	-	24.3%	-	1.9
Chinese Dialects	28.4%	-	0.3%	..2 /c	20.
Other Languages	0.1%	0.1%	8.9%	4 7%	0.7
Not Available	11.3%	6.2%	6.1%	2 .6	10.1^r
	100%	100%	100%	1 0 c	10 %

Straits Times Weekly Edition - November 24th 1990.

APPENDIX 10
UJIANTARA MEMBACA SECARA KRITIKAL

Arahan: Jangan membuka buku ini sehingga kamu diberitahu.

Ujian ini mengandungi beberapa petikan . Kamu dikehendakki membaca petikan-petikan tersebut dan kemudian menjawab soalan yang mengikutinya. Tolong bulatkan huruf yang kamu fikir ialah bagi jawapan yang betul di kertas jawapan yang disediakan. Kamu boleh membaca semula sesuatu perenggan seberapa banyak kali yang kamu suka. Jika kamu tidak berapa pasti jawapan bagi sesuatu soalan, kamu boleh menjawab soalan lain dahulu kemudian baru mencuba soalan yang dit'nggalkan tadi.

Arahan untuk soalan 1 - 5

Berikan kesimpulan yang wajar atau yang sepatutnya bagi ayat-ayat berikut. Anggaplah kenyataan yang tertulis itu benar.

Contoh 1

Semua kucing suka minum susu. Comel ialah seekor kucing.
A.   Comel suka minum susu.
B.   Comel tidak suka minum susu.
C.   Ada kucing yang tidak suka susu.
D.   Tidak ada kucing yang tidak suka susu

Jawapan yang betul ialah 'A'.

Sekarang jawablah soalan-soalan berikut, anggaplah kenyataan-kenyataan yang tertulis itu benar.

1. Semua limau di dalam kotak itu manis. Limau ini diambil dari kotak itu.
   A. Limau dari kotak itu tentu masam.
   B. Limau dari kotak itu tentu manis.
   C. Ada limau dari kotak itu yang tidak manis.
   D. Sebahagian dari limau di kotak itu manis.

2. Semua budak perempuan suka main anak patung.Putih suka main anakpatung
   A. Putih tak suka bermain anak patung.
   B. Putih tentulah seorang budak perempuan.
   C. Putih tentulah bukan budak perempuan.
   D. Putih mungkin seorang budak perempuan, mungkin juga seorang budak lelaki.

3. Semua kanak-kanak yang tinggal di rumah Nombor 7 ialah keluarga Pak Abu. Bedah tinggal d rumah itu.
   A. Pasti Bedah bukan keluarga Pak Abu.
   B. Pasti Bedah ialah keluarga Pak Abu.
   C. Mungkin Bedah ialah keluarga Pak Abu.
   D. Mungkin Bedah bukan keluarga Pak Abu.

4. Jika seseorang tidak sakit ia t'dak merasa lesu. Orang tua itu merasa lesu.
   A. Orang tua itu pasti sak t.
   B. Orang tua itu pasti t'dak sakit.
   C. Mungkin orang tua itu sakit, mungkin tidak.
   D. Mungkin orang tua tu t dak sakit.

5. Ramai budak berumur sepuluh tahun yang sudah mengaj' Quran. Aminah berumur sepuluh tahun.
   A. Mungkin Aminah belum mengaji Quran.
   B. Pasti Aminah belum mengaji Quran.
   C. Aminah mungkin sudah mengaji Quran.
   D. Pasti Aminah sudah mengaji Quran.

Arahan bagi soalan 6 hingga 18
Jawablah soalan yang mengikuti ayat-ayat yang diberi. Kamu dikehendakki menilai samada kesimpulanan yang diberi berdasarkan ayat-ayat yang diberi itu benar, tidak benar atau tidak dapat d ketahui.

Contoh 2

Jika hari hendak hujan adalah awan hitam. Tidak ada awan hitam hari ini.

Oleh itu hari ini tidak akan ada hujan.
   A. Betul   B. Tidak   C. Tidak pasti

Jawapan yang betul ialah 'C' iaitu tidak pasti.

Sekarang jawablah soalan-soalan berikut.

Malik dan Azman masing-masing mempunyai sepuluh masalah kira-kira yang harus dibuat. Mereka mula membuatnya pada masa yang sama, tetapi Malik selesaikan kira-kiranya lima belas minit sebelum Azman.

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6. Malik lebih pandai dari Azman.
   A. Betul   B. Tidak   C. Tidak pasti

7. Malik menggunakan masa yang kurang untuk menyelesa'kan masalahnya dari Azman.
   A. Betul   B. Tidak   C. Tidak pasti

8. Azman mendapat lebih banyak jawapan kira-kira yang betul dari Malik.
   A. Betul   B. Tidak   C. Tidak pasti

Kapal-kapal di lautan terbuka tidaklah dalam keadaan merbahaya kecuali jika ada angin taufan dan kabus tebal

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9. Kapal-kapal di pelabuhan dalam keadaan yang eb'h bahaya dari kapal-kapal di laut.
   A. Betul   B. Tidak   C. T dak pasti

10. Kapal-kapal di laut terbuka kadang-kadang menghadapi bahaya.
    A. Betul   B. Tidak   C. Tidak pasti

> Salah seorang murid dari Darjah 5B Sekolah Seri Taming telah menjadi juara Pertandingan Teka Kata Kawasan Timur.

11. Guru Darjah 5B ialah guru teka-kata yang paling baik di Kawasan Timur.
   A. Betul   B. Tidak   C. Tidak pasti

12. Murid-murid di Sekolah Seri Taming ialah murid-murid yang terpandai di Kawasan Timur.
   A. Betul   B. Tidak   C. Tidak pasti

> Encik Wan dan Encik Din pergi mengail bersama-sama. Encik Wan mendapat enam ekor ikan sementara Encik Din mendapat tiga ekor sahaja. Encil Wan dan Encik Din menggunakan umpan yang berlainan

13. Encik Wan seorang pengail yang lebih pandai dari Encik Din.
   A. Betul   B. Tidak   C. Tidak pasti

14. Umpan yang digunakan oleh Encik Wan lebih baik dari umpan Encik Din.
   A. Betul   B. Tidak   C. pasti

> Guru Darjah 4A menyimpan rekod tentang murid-murid yang tidak membawa buku ke sekolah pada bulan April. Lima orang murid tidak membawa buku karangan dan sepuluh orang murid tidak membawa buku bacaan

15. Murid-murid tidak membawa buku bacaan lebih kerap pada bulan April daripada lain-lain bulan.
   A. Betul   B. Tidak   C. Tidak pasti

16. Dua pertiga dari murid-murid yang lupa membawa buku terdiri dari mereka yang lupa membawa buku bacaan.
   A. Betul   B. Tidak   C. Tidak pasti

> Jika Mak Limah mendapat suntikan dari doktor, ia akan sembuh dari penyakitnya. Ia kemudian sembuh

17. Mak Limah tentu telah mendapat suntikan dari doktor.
   A. Betul   B. Tidak   C. Tidak pasti

> Si Labi akan menjadi kaya jika ia menggali gunung itu. Dia t'dak menjadi kaya.

18. Si Labi pasti tidak menggali lubang itu.
   A. Betul   B. Tidak   C. T dak pasti

Arahan bagi soalan 19 hingga 54
Jawablah soalan yang mengikuti petikan yang d'beri. Kamu dikehendakki menilai tafsiran yang diberi secara kritikal.

Petikan 1
Ahmad mencari-cari basikalnya yang hilang di kampung itu. Dia tahu kawannya Kasim, seorang budak miskin kaki ponteng, tinggal di kampung itu. Budak yang selalu ponteng memang pencuri. Matanya memerhati di kiri kanan jalan, kemudian, nun di tepi rumah buruk d'a ternampak basikalnya tercampak di situ.

Contoh 3
     C3. Kasim telah mencuri basikal Ahmad.
        A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti
Jawapan yang betul ialah 'C' iaitu tidak pasti.

     C4.. Ahmad tinggal di kampung itu.
        A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti
Jawapan yang betul ialah 'B' iaitu mungkin tidak.

Sekarang jawab soalan-soalan yang berikut berdasarkan petikan yang sama.

19.   Ahmad seorang budak yang lalai.
     A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

20.   Ahmad dan Kasim berkawan baik.
     A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

21.   Kasim tinggal di rumah buruk itu.
     A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

22.   Basikal itu ditaruh secara tergesa=gesa.
     A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

23.   Perkataan apakah yang paling serong, atau paling memburukkan Kasim.
     A. kawannya   B. budak miskin   C. kaki ponteng   D. tercampak

24.   Petikan di atas mungkin suatu
     A. cerita benar   B. cerita pendek
     C. laporan akhbar   D. catatan harian

Petikan 2
Nora ingin mendapat markah yang tinggi untuk ujian ejaannya padahari Jumaat itu. Pelajaran ejaan sangat susah. Pada masa yang lalu ia mendapat markah yang agak rendah. Ibu Nora berkata, "Mengapa tidak belajar sedikit-sedikit setiap hari, daripada belajar semua perkataan sekali gus pada malam Jumaat?" Setiap malam dalam minggu itu Nora belajar ejaan. Pada hari Jumaat ia mendapat markah yang tinggi untuk ujian itu

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25.   Kanak-kanak dapat belajar lebih banyak lagi di rumah dari di sekolah.
     A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

26. Semenjak hari itu Nora akan belajar sedikit-sedikit setiap malam, tidak lagi ia melonggokkan pelajaranya sehingga malam sebelum ujian.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

27. Kebanyakan ujian ejaan terlalu payah.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

28. Kanak-kanak yang belajar sedikit demi sedikit setiap hari tidak akan menjadi pandai.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

29. Ibu Nora sangat mengambil berat tentang pelajaran Nora.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

30. Petikan di atas mungkin suatu
   A. cerita rekaan   B. cerita benar
   C. laporan akhbar   D. catatan harian

31. Apakah yang hendak ditunjukkan oleh penulis?
   A. Bagaimana rajinnya Nora belajar.
   B. Belajar sedikit-sedikit lama-lama pandai.
   C. Mendengar kata ibu itu baik akhirnya.
   D. Jangan tunggu masa terakhir baru belajar.

32. Yang mana satukah yang merupakan pendapat?
   A. Pelajaran ejaan sangat susah.
   B. Nora ingin mendapat markah yang tinggi.
   C. Nora belajar ejaan sedikir-sedikit setiap malam.
   D. Pada hari Jumaat ia mendapat markah yang tinggi.

Pet'kan 3

Pak Mat dan anaknya Adam telah menjadi juara peraduan gasing yang diadakan sebagai acara kemuncak Pesta Bulan Budaya. Gasing mereka diadili sebagai yang tercantik dan paling menarik pusingannya. Mereka membuat gasing kemenangan itu dari kayu bakau yang diambil dari belakang rumah mereka. Kepala gasing itu telah diukir berbentuk kepala naga, sementara badannya dicat berbelang belang dengan warna merah dan putih. Kedua-duanya mengatakan mereka tidak sangka mereka akan menang.

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33. Gasing yang terba'k d'buat dari kayu bakau.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

34. Jika Pak Mat dan Adam membuat gasing tahun hadapan, mereka akan menggunakan kayu bakau.
   A. Mungkin benar   B. Mungkin t dak   C. Tidak past'

35. Orang ramai amat gemar menyaksikan peraduan gas'ng.
   A. Mungkin benar   B. Mungk'n tidak   C. Tidak pasti

36. Pak Mat dan Adam tidak akan memasuki peraduan gas'ng tahun hadapan.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

37. Gasing Pak Mat dan Adamlah yang paling cantik.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

38. Tujuan penulis cerita ini ialah untuk
   A. Menceritakan cara Pak Mat dan Adam membuat gas ng.
   B. Menceritakan tentang peraduan gasing acara kemuncak.
   C. Menceritakan hal Pak Mat dan Adam memenangi peraduan gasing.
   D. Menaikkan nama Pak Mat dan Adam sebagai pembuat gasing.

39. Petikan di atas mungkin suatu
   A cerita rekaan   B. cerita benar
   C. laporan akhbar   D. catatan harian

Petikan 4

Pada pagi ini aku, Misah dan Janah, kawanku dari madrasah pergi dari rumah ke rumah memungut derma wang dan pakaian untuk mangsa banjir di kampung Selasih. Selepas dua buah rumah kami tidak terlarat lagi mengangkut pakaian dan barang-barang keper uan yang diberi orang. Misah menebalkan muka meminta murid- murid lelaki yang malas membantu kami. Dengan suka hati mereka pun turut serta. Kami dapat memungut banyak wang, pakaian dan peralatan rumah. Tidak sesia penat lelah kami.

---

40. Wang dan pakaian derma itu akan disampaikan kepada mangsa banjir.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

41. Murid-murid perempuan itu merasa malu untuk meminta bantuan murid lelaki.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

42. Murid lelaki dan perempuan yang bekerjasama itu te ah dapat memungut lebih banyak pakaian dari apa yang mereka akan dapati jika mereka pergi bersendirian.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

43. Mangsa banjir di Kampung Selasih akan mengucapkan terima kasih kepada murid-murid tersebut.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

44. Jika bukan murid perempuan yang minta bantuan tentu murid lelaki tidak membantu.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

45. Semua murid-murid sekolah madrasah berhati mul a.
   A. Mungkin benar   B. Mungkin tidak   C. T dak pasti

46. Petikan di atas mungkin suatu
   A. cerita benar   B. cerita pendek
   C. laporan akhbar   D. catatan harian

47. Tujuan pengarang petikan ini ialah untuk
   A. menceritakan bagaimana mereka dapat memungut derma.
   B. menunjukkan mereka suka menolong orang susah.
   C. menceritakan pengalaman mereka memungut derma.
   D. menerangkan kemalasan murid lelaki.

> **Petikan 5**
> Manusia yang tinggal di gua-gua batu itu kemudian tahu bagaimana memasang api di hadapan gua mereka pada waktu malam. Mereka boleh nampak cahaya api berkilauan di dalam mata-mata binatang buas yang berkeliaran di situ bila keadaan gelap. Mereka akan dapat tahu bila waktu bahaya akan tiba selagi ap'-api di luar gua itu masih menyala.

48. Banyak manusia di gua-gua batu itu terselamat oleh api yang dinyalakan di luar gua itu.
    A. Mungkin benar   B. Mungkin tidak benar   C. Tidak pasti

49. Banyak binatang buas yang melompat dari api lalu membunuh manusia dalam gua.
    A. Mungkin benar   B. Mungkin tidak benar   C. Tidak pasti

50. Bila hari hujan api-api itu dinyalakan di dalam gua.
    A. Mungkin benar   B. Mungkin tidak benar   C. Tidak pasti

51. Sebelum ini manusia gua batu itu menghalau binatang buas dengan merejam mereka dengan batu.
    A. Mungkin benar   B. Mungkin tidak benar   C. Tidak pasti

52. Mata binatang buas itu jadi seperti cermin, boleh mengimbas cahaya.
    A. Mungkin benar   B. Mungkin tidak benar   C. Tidak pasti

57. Semua orang-orang yang tinggal di gua batu bodoh.
    A. Mungkin benar   B. Mungkin t'dak benar   C. Tidak pasti

53. Penulis perenggan ini
    A. menerangkan kesusahan orang zaman dahulu.
    B. menceritakan keadaan binatang buas memakan orang.
    C. menerangkan kegunaan api pada orang-orang digua batu.
    D. menerangkan kebodohan orang-orang zaman gua batu.

54. Petikan di atas mungkin suatu
    A. cerita benar   B. cerita rekaan
    C. laporan akhbar   D. catatan harian

Arahan bagi soa an 55 hingga 59
Bulatkan perkataan di mana penulis tidak menggunakan kata-kata atau unsur-unsur yang berleb'han .

> **Contoh 4**
> Kereta jenis PURNAMA ialah kereta yang terhandal di seluruh Asia. Ia dikagumi oleh mereka yang tahu menilai mutu terbaik.
>
> A. dikagumi   B. terbaik ·   C. terhandal   D. menilai
>
> Jawapan yang betul ialah 'D' iaitu tahu.

Sekarang jawablah soalan-soalan yang berikut.

55. Televisyen dikagumi sebagai suatu alat hiburan yang d'puja ramai, baik sebagai saluran pendidikan atau hiburan.
    A. hiburan   B. dipuja   C. dikagumi   D. ramai

56. Ramai penaja yang sangat pemurah telah mengeluarkan beribu-ribu dolar untuk menaja rancangan TV yang menarik hati. Ini membuat rama' penonton terpaku dikaca TV apabila rancangan idaman mereka dipancarkan.
    A. idaman   B. sangat   C. terpaku   D. menaja

57. Rancangan suka-ramai Gara-gara Super Mat yang sungguh mengasyikkan para remaja belasan tahun telah menggondol tempat pertama sebagai rancangan TV yang paling disukai ramai.
    A. mengasyikkan   B. tempat pertama
    C. suka-ramai   D. menggondol

58. Para ibu bapa yang kolot sangat benci terhadap rancangan suka-ramai Gara-gara Super Mat kerana anak-anak mereka suka meniru gerak-laku Super Mat yang keterlaluan.
    A. kolot   B. suka-ramai   C. gerak-laku   D. keterlaluan

59. Seniwati Nani yang sungguh jelita telah berjaya menawan jutaan peminat akibat dari pandainya ia melakunkan watak wanita moden.
    A. melakunkan   B. jelita   C. jutaan   D. pandainya

Arahan bagi soalan 60 hingga 63
    Pilih ayat-ayat yang 'serong' atau 'berat sebelah' atau 'yang cuba mempengaruhi pembaca' dari kumpulan empat ayat yang berikut.

Contoh 5
A. *Seorang pelajar miskin telah mendapat bantuan biasiswa.*
B. *Pelajar tersebut mengucapkan terima kasih kepada Persatuan Kampung Pasir.*
C. *Jikalau tidak kerana bantuan Persatuan Kampung Pasir Rahim tidak akan dapat meneruskan pelajarannya.*
D. *Persatuan Kampung Pasir telah menganugerahkan biasiswa sebanyak 3000 dolar setahun.*

. *Ayat yang serong itu ialah:* --------
    Jawapan yang betul ialah 'C'.

Sekarang buatlah soalan-soalan yang berkut.

A. Satu perbuatan yang sangat d'galakkan ialah bacaan buku-buku cereka.
B. Sudah tiba masanya k'ta mengenepikan buku-buku hikayat yang usang dan ketinggalan zaman.
C. Cerita -cerita lama kerap meng'sahkan tentang keh dupan di 'stana.
D. Cereka berunsur sains dan misteri d'gemari oleh mur'd-mur'd sekolah rendah dan menengah.

60. Ayat yang serong itu ialah: -----

A. Seorang yang bijak tidak akan membuang masa di pusat-pusat membeli belah.

B. Pusat-pusat membeli belah telah menjadi tempat pergaulan bebas muda-mudi.

C. Muda-mudi membeli-belah di toko-toko besar yang menjual pakaian model terbaru.

D. Kedai makanan segera seperti Mac Donald menjadi tumpuan anak-anak muda.

61. Ayat yang serong itu ialah: ------

-

A. Puan Asiah ialah seorang ibu yang sedia berkorban untuk kepentingan kaumnya.

B. Beliau telah banyak berjasa kepada masyarakat yang tidak beruntung.

C. Tidak hairan jika ia menjadi contoh wanita yang paling mulia.

D. Jasa-jasa Allah Yarhamah akan tetap dikenang oleh keluarga dan rakan-rakan.

62. Ayat yang serong itu ialah: ------

A. Satu rompakan bersenjata telah dilakukan oleh tiga orang pemuda berambut panjang.

B. Mereka telah mencederakan tuan punya kedai dan membunuh isterinya yang cuba menjerit.

C. Wang lebih dari dua puluh ribu dolar dan semua barang-barang kemas telah dibawa lari.

D. Semua orang diingatkan supaya berhati-hati terhadap pemuda yang berambut panjang.

63 Ayat yang serong itu ialah: --------

Arahan untuk soalan 64 - 68

Bagi sesuatu ayat yang diberi, carilah ide atau anggapan yang tersembunyi atau tersirat di sebal k kata-kata tersebut. Anggaplah semua ide dalam ayat-ayat itu benar.

Contoh 6
Kerani pejabat pos itu tidak melayan orang-orang yang tidak beratur untuk membeli setem.

   C5 Anggapan yang tersembunyi di sebalik kata-kata tadi ialah
   A. Orang yang hendak membeli setem di pejabat pos mestilah beratur.
   B. Kerani pejabat pos itu seorang yang sombong.
   C. Kerani pejabat pos seorang yang tidak pil'h kasih.
   D. Mereka yang beratur akan dilayan dengan baik.

   Jawapan yang betul ialah 'A'.

Sekarang jawablah soalan-soalan yang berikut .

> Seluar jean jenama Rust lebih baik dari seluar jean jenama Brush kerana harganya lebih mahal.

64. Anggapan yang tersembunyi di sebalik kata-kata tadi ialah ----
   A. Seluar jean Rust dibuat dari bahan yang lebih baik.
   B. Lebih mahal sesuatu seluar jean itu, lebih baik mutunya.
   C. Seluar jean Rust dibuat dari bahan yang kurang baik.
   D. Seluar jean lebih baik kerana harganya lebih mahal.

> Faridah seorang murid yang pandai kerana dia tidak mencabar kata-kata gurunya.

65. Anggapan yang tersembunyi disebalik kata-kata tadi ialah
   A. Faridah menjadi pandai kerana ia mengikut perintah guru.
   B. Semua murid-murid yang pandai tidak akan mencabar kata-kata guru mereka
   C. Hanya murid-murid yang bodoh mencabar kata-kata guru mereka.
   D. Kebanyakan murid yang pandai tidak mencabar kata-kata guru.

> Satu cara yang baik untuk mengurangkan kejadian kecurian kereta ialah dengan memasang kunci berbunyi.

66. Anggapan yang tersembunyi disebalik kata-kata tadi ialah
   B. Pencuri tidak akan berani mencuri kereta yang dipasang kunci yang berbunyi
   C. Kunci tersebut akan berbunyi hanya apabila pencur' cuba masuk.
   D. Kunci tersebut adalah alat menghalang kecurian kereta yang berkesan.

> Marilah kita memperbaiki kawasan tempat kediaman kita bersama.Kawasan yang semak-samun kelihatan kotor dan akan menjadi tempat kediaman ular atau binatang-binatang lain

67. Anggapan yang tersembunyi di sebalik kata-kata tadi ia ah
   A. Kawasan tempat kediaman itu semak-samun.
   B. Kawasan yang semak-samun akan menarik ular dan a'n-la'n b'natang.
   C. Orang yang bercakap itu seorang yang raj'n.
   D. Kawasan itu tidak d'bersihkan oleh tukang kebunnya.

> Encil Marzuki, seorang peguam yang berhemah tinggi t dak mungkin melakukan rompakan tersebut

68. Anggapan yang tersembunyi di sebalik kata-kata tadi ialah
   A. Encik Marzuki tidak pernah melakukan kesalahan jenayah seperti merompak.
   B. Tidak ada bukti yang menunjukkan yang Encik Marzuki yang melakukan rompakan itu.
   C. Peguam ialah orang yang baik dan mungkin melakukan rompakan.
   D. Encik Marzuki bukan seorang berhemah tinggi kalau ia melakukan rompakan.

Arahan untuk soalan 69 hingga 72

Pilihlah ayat yang yang mengemukakan suatu pendapat , fakta atau maklumat dari kumpulan empat ayat yang berikut.

Contoh 7
   C7. Ayat yang menunjukkan pendapat ialah: -----
   A. Penduduk Singapura berjumlah hampir tiga juta orang.
   B. Penduduk Singapura rajin bekerja untuk mempertingkat ekonomi.
   C. Kaum wanita juga digalakkan untuk bekerja.
   D. Pendapatan negara bertambah dari tahun ke tahun.

Jawapan yang betul ialah 'B'

Sekarang jawablah soalan-soalan yang berikut.

69. Ayat yang menunjukkan pendapat ialah: -------
   A. New York ialah bandar terbesar dan tercantik di Amerika Syarikat.
   B. New York terkenal sebagai bandaraya bangunan pencakar langit.
   C. Di waktu malam cahaya ampu yang gilang gemilang menyinari kegelapan malam.
   D. New York juga terkenal kerana jumlah jenayah yang tinggi.

70. Ayat yang menunjukkan pendapat ialah: ------
   A. Ramai sanak-saudara me awat nenek Aman di rumah sak't.
   C. Penyakit nenek Aman ke hatan telah amat tenat.
   D. Para doktor pakar telah pun melakukan pembedahan.

71. Ayat yang menunjukkan fakta atau maklumat ialah: -----
   A. Rumah pangsa ialah rumah yang paling sesuai bagi rakyat Singapura.
   B. Kebanyakan rakyat Singapura tinggal di rumah pangsa.
   C. Keadaan rumah pangsa amat selesa dan bersih.
   D. Ramai di antara penghuni rumah pangsa yang gemarkan keadaan sekitarannya.

72. Ayat yang menunjukkan fakta atau maklumat ialah: -----
   A. Ubat gigi Putih Berseri benar-benar menyerikan h'dup anda.
   B. Ia dibuat dari ramuan yang pal ng segar dan terba'k
   C. Ia di perakukan oleh pakar-pakar pergigian yang ternama.
   D. Ubat gigi itu akan dijual di pasaran mulai bulan hadapan.

Arahan bagi soalan 73 hingga 77
Nyatakan samaada ayat-ayat di bawah ini adalah pendapat, fakta (atau maklumat sebenar), fakta palsu atau kepercayaan lama.

Contoh 8
C7. Barang-barang yang dijual di pasar Geylang amat murah harganya.
A) pendapat   B) fakta atau maklumat sebenar
C) fakta palsu atau   D) kepercayaan lama
Jawapan yang betul ialah 'A'

Sekarang jawablah soalan-soalan yang berikut.

73. Gadis yang suka menyanyi didapur akan mendapat suami yang tua.
A) pendapat   B) fakta atau maklumat sebenar
C) fakta palsu atau   D) kepercayaan lama

74. Orang yang tidak mampu tidak patut membeli kereta.
A) pendapat   B) fakta atau maklumat sebenar
C) fakta palsu atau   D) kepercayaan lama

75. Kuala lumpur ialah ibukota Malaysia, sementara Jakarta ialah ibukota Indones'a
A) pendapat   B) fakta atau maklumat sebenar
C) fakta palsu atau   D) kepercayaan lama

76. Negeri-negeri di Asia Tenggara mempunyai empat musim.
A) pendapat   B) fakta atau maklumat sebenar
C) fakta palsu atau   D) kepercayaan lama

77. Jika hujan panas, renyai-renyai alamat ada orang besar yang meninggal.
A) pendapat   B) fakta atau maklumat sebenar
C) fakta palsu atau   D) kepercayaan lama

Arahan bagi soalan 78 hingga 95
Baca ah cerita pertama dan kedua, kemudian jawab soalan yang mengikut'nya.

Pet kan 6
Cerita pertama:
    Anak rusa itu berdiri tegak apab'la mendengar bunyi sang singa melalui hutan tersebut. Warna bulu rusa itu sama dengan warna tumbuh-tumbuhan di sekelilingnya. Sang singa tidaklah dapat melihat adanya anak rusa itu.
Cerita kedua
    Dalam masa perang askar-askar mengecat pakaian dan alat-alat perang seakan-akan warna tanah dan kawasan peperangan itu. Warna-warna itu sama dengan warna pokok, tanah dan langit atau awan di sekeliling mereka. Musuh tidak dapat melihat mereka di hutan itu.

78. Apakah persamaan yang d dapati di antara kedua-dua cer'ta tadi?
A   Kedua-dua menerangkan baga'mana warna boleh mel'ndung' k'ta
B. Kedua-dua menceritakan tentang askar-askar yang mewarnakan pakaian mereka.
C. Kedua-dua menceritakan tentang rusa dan sang singa.
D. Kedua-dua menceritakan tentang kepentingan warna.

79. Apakah perbezaan di antara kedua-dua cerita tadi?
    A. Yang satu menerangkan tentang pakaian dan yang satu lagi tentang daun-daun.
    B. Yang satu menerangkan tentang warna dan yang satu lagi tentang tumbuh- tumbuhan.
    C. Yang satu menerangkan tentang binatang dan yang satu lagi tentang pokok-pokok
    D. Yang satu tentang binatang dan yang satu lagi tentang manusia.

80. Apakah maksud pengarang cerita pertama?
    A. cuba mempengaruhi pembaca supaya mengenali binatang.
    B. cuba menerangkan keadaan sambil menunjukkan kepandaiannya.
    C. cuba menyampaikan maklumat secara terus terang.
    D. cuba menarik perhatian pembaca.

81. Dari manakah cerita pertama tadi dipetik?
    A. majallah hiburan   B. cerita kanak-kanak
    C. rencana sains   D. rencana masyarakat

82. Dari manakah cerita kedua tadi dipetik?
    A. majallah hiburan   B. cerita kanak-kanak
    C. rencana sains   D. rencana masyarakat

Petikan 7

Cerita pertama

Pada zaman dahulu orang menggunakan kereta lembu untuk bergerak ke mana-mana. Walaupun kereta lembu tidak begitu laju, tetapi penumpangnya dapatlah berehat, tidak payah berjalan kaki. Sambil itu barang-barang yang berat seperti padi, kelapa dan buah-buahan dapat diangkut ke tempat-tempat yang jauh. Orang-orang dahulu sangat suka menaiki kereta lembu.

Cerita kedua

Masa kini keretapi gerak cepat sangat d'perlukan untuk bergerak ke pusat-pusat bandar yang sesak. Ribuan manusia naik dengan cepat dan turun bergegas-gegas. Mereka hanya membawa dir, tujuan mereka hanya untuk sampai ke tempat yang dituju seberapa segera yang boleh. Kalau tidak ada keretapi gerak cepat pekerja-pekerja dibandar mungkin terlambat sampai di tempat kerja.

---

83. Apakah persamaan dalam kedua-dua cerita tadi?

    A. Kedua-duanya menceritakan tentang perlunya pengangkutan darat.
    B Kedua-duanya menceritakan tentang masa perjalanan menggunakan pengangkutan darat.
    C. Kedua-duanya menceritakan tentang penumpang atau orang yang menggunakakan kenderaan.
    D. Kedua-duanya menceritakan tentang cara manus'a bergerak dari satu tempat ke satu tempat yang lain.

84. Apakah kelainan di antara kedua-dua cerita tadi?

A. Yang satu menerangkan tentang barang-barang yang diangkut dan yang satu menerangkan tentang orang yang tidak membawa beg.
B. Yang satu menerangkan tentang kereta lembu dan yang satu menceritakan tentang keretapi gerak cepat.
C. Yang satu menerangkan tentang orang-orang di kota dan yang satu menerangkan tentang orang-orang bandaraya.
D. Yang satu menerangkan tentang pentingnya masa dan yang satu menerangkan tentang kurang berharganya masa

85. Apakah tujuan pengarang cerita pertama?
A. Untuk menunjukkan kepentingan kereta lembu pada zaman dahulu.
B. Untuk menunjukkan bagaimana payahnya hidup di zaman dahulu.
C. Untuk menunjukkan cara orang dahulu bergerak dari satu tempat ke satu tempat.
D. Untuk menunjukkan cara orang dahulu mengangkut padi, kelapa dan buah-buahan.

86. Apakah tujuan pengarang cerita kedua?
A. Untuk menunjukkan bagaimana lajunya keretapi gerak cepat.
B. Untuk menunjukkan sikap penumpang zaman sekarang.
C.Untuk menunjukkan keselesaan penumpang naik keretapi gerak cepat.
D. Untuk menunjukkan perlunya keretapi gerak cepat.

87. Dari manakah cerita pertama tadi dipetik?
A. majallah hiburan   B. cerita kanak-kanak
C. rencana sains   D. rencana masyarakat

88. Dari manakah cerita kedua tadi d'petik?
A. majallah hiburan   B. cerita kanak-kanak
C. rencana sains   D. rencana masyarakat

Petikan 8
Cerita pertama
Pada suatu masa dahulu penyu laut mudah didapati berenang-renang dilaut. Pada masa kini sangat banyak penyu laut yang telah dibunuh untuk mengambil dagingnya, telur-telurnya, kulitnya dan minyaknya sehinggakan hanya sedikit sahaja penyu laut yang masih tinggal. Walaupun terdapat undang-undang untuk melindungi penyu laut, di setengah-tengah tempat banyak yang masih diburu dan banyak pula yang tertangkap di jaringan kapal-kapal nelayan. Sekarang ini, ramai pembela penyu yang berusaha untuk menyelamatkan penyu, dan melindungi telur-telur, sarang-sarang telur dan juga pantai-pantai istirihat penyu. Tanpa bantuan mereka penyu laut akan hapus dari muka bumi ini untuk selama-lamanya.

Cerita Kedua
Pada masa dahulu tinggal seekor penyu besar yang selalu menghabiskan masanya berenang-renang di Lautan Pasifik. Perlahan-lahan ia berenang dan memakan ikan-ikan kecil yang hidup di sekitar air dan tumbuh-tumbuhan laut di situ, kadang-kadang ia memamah udang-udang yang bermain-main disebalik batu karang di sempadan antara laut dan pantai. Penyu itu tinggal di laut, tetapi kadangkala ia berenang dipermukaan air, menyedut udara segar dan nyaman dan merasakan panasnya sinaran matahari.. Dia mengadah ke langit dan melihat matahari pada waktu siang dan bulan pada waktu malam, juga burung-burung yang berterbangan melintasi lautan luas. Kadangkala ia penat dan bosan berenang, betapa ingin ia untuk berehat di suatu pulau di tengah lautan itu.

89. Apakah persamaan di antara kedua-dua cerita tadi?

A Kedua-duanya menerangkan tentang seksanya hidup penyu di laut.
B. Kedua-duanya menerangkan tentang kesukaan penyu di laut.
C. Kedua-duanya menerangkan perihal penyu.
D. Kedua-duanya menerangkan makanan penyu.

90. Apakah perbezaan di antara kedua-dua cerita tadi?

A. Yang satu menerangkan tentang kedudukan penyu yang hampir pupus, sementara yang satu lagi mengisahkan tentang cerita seekor penyu di Lautan Pasifik.
B. Yang pertama menerangkan tentang kegunaan penyu sementara yang kedua mengisahkan tentang kehidupan penyu di Lautan Pasifik.
C. Yang pertama nenerangkan tentang usaha menye amatkan penyu sementara yang kedua meng'sahkan tentang penderitaan seekor penyu.
D. Yang pertama menerangkan keadaan penyu pada masa ini sementara yang kedua menerangkan tentang seekor penyu pada zaman dahulu.

91.   Apakah maksud penulis cerita pertama?
A. untuk menceritakan kekejaman manusia terhadap penyu.
B. untuk menceritakan tentang keistimewaan penyu pada masa kini.
C. untuk menarik minat pembaca terhadap usaha menyelamatkan penyu.
D. untuk menggesa pembaca supaya tidak membunuh penyu.

92. Apakah maksud penulis cerita kedua?
   A. supaya pembaca merasa kasihan terhadap penyu.
   B. hanya menghibur pembaca dengan suatu kisah penyu.
   C. mengajar pembaca tentang kehidupan penyu di laut.
   D. tiada mempunyai maksud tertentu.

93. Dari manakah cerita pertama tadi dipetik?
   A. majallah hiburan   B. cerita kanak-kanak
   C. rencana sains   D. rencana masyarakat

94. Dari manakah cerita kedua tadi dipetik?
   A. majallah hiburan   B. certa kanak-kanak
   C. rencana sains   D. rencana masyarakat

95. Cerita yang manakah yang kamu mungkin rujuk untuk membuat laporan
   sains tentang penyu keadaan penyu kini.
   A. cerita pertama sahaja   B. cerita kedua sahaja
   C. cerita pertama dan kedua   D. tidak gunakan kedua-duanya

Arahan untuk soalan 96 hingga 100
   Berdasarkan kepada petikan yang diberi, kamu dikehendakki menilai
samada jawapan, sebab atau hujah-hujah yang d'beri bagi sesuatu perkara
itu kuat atau lemah.

Contoh 9

   *Beberapa orang pelatih jururawat sebuah rumah sakit sedang
membincangkan samada seseorang jururawat dibenarkan mempunyai
kuku panjang. Mary berkata, "pada zaman ini seorang wanita yang
berkuku pendek dipandang kolot atau tidak mengikuti zaman. Hamidah
menyampuk, "rumah sakit tidak mempunyai hak untuk menentukan
panjang pendeknya kuku para jururawatnya." Zola yang biasanya tidak
begitu suka bercakap tiba-tiba mengemukakan pendapatnya, "memang
elok jika jururawat tidak berkuku panjang , kerana ia membahayakan
pesakit, bila kita hendak memandikan atau membalut pesakit yang
cedera." Dengan cepat pula Kasmah menambah " ya, kuku pendek
senang dibersihkan."*

C9. Pendapat siapakah yang palng lemah?

A. pendapat Mary   B. pendapat Hamidah
C. pendapat Zola   D. pendapat kasmah

Jawapan yang betul ialah 'A' pendapat Mary.

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Sekarang jawablah soalan-soalan berikut.

Petikan 9

Dalam satu perbincangan darjah tentang kebebasan binatang, Cikgu Ali sengaja menyuruh murid-muridnya memikirkan tentang keadaan binatang-binatang di taman haiwan. "Bagaimana kalau zoo dibina sebegitu rupa sehingga binatang dapat bebas bergerak di taman, tetapi pelawat-pelawat zoo yang bergerak dalam kandang?" soalnya.

Hasyim menjawab, " itu baik cikgu, dalam keadaan alam semulajadi, manusialah yang tinggal dalam tempat bertutup, iaitu rumah, tetapi binatang bebas bergerak di mana-mana." Wong pula mengeluarkan pendapatnya, "ya, tiba masanya manusia supaya tidak menyiksa binatang, sekarang ini banyak binatang yang hampir pupus, kita perlu melindungi mereka.". "Tetapi kalau begitu, senanglah binatang-binatang besar dan buas membaham binatang kecil seperti sang kancil, tidak lama kemudian yang tinggal cuma binatang seperti harimau, singa dan gajah sahaja," kata Masni. Balu pula menjawab, "tapi jangan lupa, dengan itu taman haiwan tidak payah memberi makan binatang itu lagi, penjaga tidak payah membersihkan tempat itu dan belanja penjagaan berkurangan."

97. Jawapan siapakah yang paling lemah?

A. jawapan Hasyim   B. jawapan Wong
C. jawapan Masni   D jawapan Balu

Petikan 10

"Patutkah pelajar-pelajar bekerja semasa cuti sekolah?" tanya ketua murid Sekolah Seri Kallang. "Kita semua bukan pelajar yang datang dari keluarga yang berada, pendapatan yang kita peroleh, sedikit sebanyak boleh membantu biaya persekolahan," Kamil mengeluarkan pendapatnya. "Lagipun, duduk di rumah sahaja semasa cuti panjang sungguh membosankan, sekurang-kurangnya masa kita terisi dengan pekerjaan yang berfaedah, Hasnah menyokong. "Tetapi jangan lupa, mereka yang bekerja mungkin akan melupakan buku dan pelajaran mereka, kata Sheila pula. Johnny pula membantah, "kita bukan budak-budak lagi, kita boleh buat apa yang kita suka." Perdebatan kemudian menjadi semakin hangat.

97.   Pandangan siapakah yang paling lemah?
   A. pandangan Kamil   B. pandangan Hasnah
   C. pandangan Sheila   D. pandangan Johnny

Petikan 11

Harun telah gagal untuk menghantar jawapan rencana yang diminta oleh guru sejarahnya. Ia berfikir-fikir apakah sebab yang wajar untuk diberitahu kepada gurunya itu. Mula-mula ia berfikir, "aku boleh katakan yang aku terlupakan soalan rencana itu", kemudian ia berfikir pula, "boleh juga aku katakan yang aku telah membuatnya tetapi kertas itu hilang. Fikiran ketiga pula muncul, "aku katakan bahawa aku telah tolong

hantarkan kawanku ke rumah sakit. Akhirnya ia berfikir, "baiklah aku berterus terang mengatakan yang aku telah tengok wayang ."

98. Hujah atau fikiran yang manakah yang paling kuat?

A. hujah mula-mula   B. hujah kemudian atau kedua
C. hujah ketiga   D. hujah akhir.

Petikan 12

Manis dan abang-abangnya adalah anak seorang yang kaya. Mereka sedang berbahas tentang baik buruknya mereka melancong keluar negeri pada cuti sekolah, dalam keadaan dunia sedang bergolak kerana peperangan di Teluk. "Tak bagus kalau kita pergi melancong, kita boleh diculik kapalterbang boleh kena bom," kata Manis. "Ya, jangan," kata Jais, "lebih baik kita gunakan wang itu untuk membeli barang-barang yang lebih berguna," . "Kita bukan hendak ke negara yang hampir dengan negari-negeri di Teluk, kita hendak ke Hongkong, kalau kita ke sana kita boleh beli macam-macam oleh-oleh," kata Yasin. Kemudian Abang Long pula mengeluarkan pendapat,"jauh berjalan banyak pengalaman, banyak perkara yang dapat kita pelajari dari melancong."

99. Hujah siapakah yang paling kuat?
     A. hujah Manis   B. hujah Jais
     C. hujah Yasin   D. hujah Abang Long

Petikan 13

Dalam satu perbahasan, pihak pembangkang telah menentang usul supaya pemerintah mengenakan pembayaran denda kepada anak-anak yang tidak mahu menjaga ibu bapa mereka. Pembangkang pertama mengemukakan pandangan bahawa pembayaran denda akan menyebabkan anak-anak merasakan bahawa perkara penjagaan ibu bapa sebagai satu paksaan, bukan sesuatu yang datang dari keinginan diri sendiri. Penyokong pertama telah pun menyampaikan hujah bahawa denda akan berkesan dalam mengurangkan bilangan anak-anak yang tidak menjaga ibu bapa mereka. Penyokong kedua kemudian berkata bahawa ini akan mengurangkan bilangan orang tua yang ditempatkan di rumah orang-orang tua. Pembangkang kedua pula membidas dengan berkata bahawa penjagaan ibu bapa di rumah orang-orang tua adalah lebih baik dari di rumah sendiri.

100. Hujah siapakah yang paling lemah?
    A. pembangkang pertama   B. pembangkang kedua
    C. penyokong pertama   D. penyokong kedua

========================= terima kasih =========================

<u>APPENDIX 11</u>
<u>Translation of the Trial Malay Language Critical Reading Test</u>

<u>Direction</u>: Please read the passages and then answer the questions that follow. <u>Circle</u> the letters that you think is the right answer in the answer sheet provided. You are allowed to reread the passages as many times as you like. If you do not know the answer to any particular question, you can skip the question and come back to it later.

<u>Direction for questions 1 - 5</u>
Please choose the rational conclusions for the sentences below. You have to assume that the statements written are true.

Example 1
All cats like to drink milk. Comel is a cat.
A. Comel likes milk.
B. Comel does not like milk.
C. There are cats that do not like milk.
D. there are cats that like milk.
        The right answer is 'A.'

<u>Please choose the correct answer the following questions, assume that that the statements given is true.</u>

1. All the oranges in that box are sweet. This orange is taken from that box.
    A. The orange from that box must be sour.
    B. The orange from that box must be sweet.
    C. There will be some oranges from that box which will not be sweet.
    D. Some of the oranges from that box are sweet.

2. All girls like to play with dolls. Putih likes to play with dolls.
    A. Putih does'nt like to play with dolls.
    B. Putih is certainly a girl.
    C. Putih is certainly not a girl.
    D. Putih may be a girl or a boy.

3. All the children who live at house number 7 are members of Pak Abu's family. Bedah lives in that house.
    A. It is certain that Bedah is not a member of Pak Abu's family.
    B. It is certain that Bedah is a member of Pak Abu's family.
    C. Probably Bedah is a member of Pak Abu's family.
    D. Probably Bedah is not a member of Pak Abu's family.

4. If someone is not sick, he or she will not feel weak. That old person is feeling weak.
    A. That old person must be sick.
    B. That old person is certainly not sick.
    C. That old person may be or may not be sick.
    D. Probably that old person is not sick.

5. Many ten-year old children have already studied the Quran. Aminah is ten years old.
    A. Probably Aminah has not studied the Quran.
    B. It is certain that Aminah has not studied the Quran.
    C. Probably Aminah has studied the Quran.
    D. It is certain that Aminah has studied the Quran.

<u>Direction for question 6 to 18.</u>
Please evaluate whether the conclusion/ summary based on the sentences given is true, false or cannot be determined.

Example 2
If it is going to rain there will be black clouds. There is no black cloud.Therefore there will be no rain.
A. True B.   False C.   Cannot be determined

The right answer is 'C'

<u>Now please answer the following questions.</u>

Malik and Azman had ten arithmetic problems that they have to do.They started to do it at the same time, but Malik completed his sums fifteen minutes before Azman.

---

6. Malik is cleverer than Azman.
   A.   True   B. False   C. Cannot be determined

7. Malik used shorter time to finish his sums than Azman .
   A.   True   B. False   C. Cannot be determined

8. Azman gets more sums right than Malik.
   A.   True   B. False   C. Cannot be determined

The ships in open sea will not be in a dangerous situation except if there is a storm and thick fog.

---

9.   Ships in the harbour will be in a more dangerous situation that at sea.

     A.   True   B. False   C. Cannot be determined

10. Ship in the open sea sometimes meet danger.

     A.   True   B. False   C. Cannot be determined

One of the pupils in Class 5B of Seri Taming School have become the champion/ winner of the Word Puzzle Competition of East Zone.

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11. The teacher of class 5B is the best cross-word puzzle teacher in the East Zone.
    A.   True   B. False   C. Cannot be determined

12. The pupils of Seri Taming School are the cleverest pupils in the East Zone.
    A.   True   B. False   C. Cannot be determined

> Encik Wan and Encik Din went fishing together. Encik Wan obtained six fish while Encik Din got three only. Both of them used different type of bait or worms.

13. Encik Wan is a cleverer fisherman than Encik Din.
    A. True   B. False   C. Cannot be determined

14. The bait used by Encik Wan is better than the one used by Encik Din.
    A. True   B. False   C. Cannot be determined

> The class teacher of Primary 4A kept record of pupils who did not bring books in April. Five pupils did not bring their composition books and ten pupils did not bring their reading books.

15. Pupils do not bring composition books more often in April than in other months.
    A. True   B. False   C. Cannot be determined

16. Two third of the pupils who did not bring books comprise of those who did not bring their reading books.
    A. True   B. False   C. Cannot be determined

> If Mak Limah get an injection from the doctor, she will recover from her illness. She later recovered.

17. Mak Limah must have obtained an injection from the doctor.

    A. True B.   False   C. Cannot be determined

> Si Labi will be rich if he digs the mountain. He did not become rich.

18. Si Labi must have not dugged the mountain.

    A. True   B. False   C. Cannot be determined

Direction for question 19 to 54.

Please answer the questions following the short passages. You are required to judge the interpretaions given in a critical way.

> Passage 1
> Ahmad was looking for his lost bicycle in that village. He knows that his friend, Kasim, a poor boy who always play truant, lives in the village. Children who plays truant are stealer/robbers. His looked at the left and right of the streeet , then, lo, strewn by the side of a dilapidated hut, he saw his bicycle.

19. Ahmad is a careless boy.
    A. True   B. False   C. Cannot be determined

20. Ahmad and Kassim are close friends.
    A. True   B. False   C. Cannot be determined

21. Kassim lives in the dilapidated hut.
    A. True   B. False   C. Cannot be determined

22. That bicycle has been put in a hurried way.
    A. True   B. False   C. Cannot be determined

23. What is the phrase that is most biased towards Kassim.
    A. his friend   B. poor boy
    C. always plays truant   D. strewn.

24. The above passage is probably
    A. a true story   B   A fiction (short story)
    C. a newspaper report   D. A diary

Passage 2
Nora wants to score high marks in her spelling test on Friday. Spellingis very difficult. In the
past she gets rather low marks. Nora's mother said,"Why don't you learn bit by bit everyday,
rather than learning all the words once and all on Thurday night?" Every night in that week
Nora learnt her spelling. On Friday she scored high marks for the test.

25 Children could learn more in the house than in school.
    A. True   B. False   C. Cannot be determined

26 From that day onwards Nora will learn little by little every night, no longer will she
    lump her lessons until the last night before the test.
    A. True   B. False   C. Cannot be determined

27. Most spelling tests are very difficult.
    A. True   B. False   C. Cannot be determined

28. Children who learn bit by bit every day will become clever.
    A. True   B. False   C. Cannot be determined

29. Nora's mother is very concerned about Nora's education.
    A. True   B. False   C. Cannot be determined

30. The above passage is a
    A. a true story   B   A fiction
    C. a newspaper report   D. A diary

31. What did the author wish to show?
    A. How conscientious Nora is in her studies.
    B. Learning bit by bit will make one clever.
    C. Listening to your mother will give good return.
    D. Don't wait till the last moment before studying.

32. Which one is an opinion?
    A. Spelling is very difficult.
    B. Nora wants to get high marks.
    C. Nora learns her spelling bit by bit daily.
    D. On Friday she scored high marks.

Passage 3
Pak Mat and his son Adam had become the champion of the Top Competition which was held as the finale of the Cultural MonthFestival. Their tops had been judged as the most beautiful and sported the most elegant spining. They had built the winning top from the mangrove wood which was obtained from the back of their house. The head of the top was carved into the shape of a dragon, while its body was painted in red and white stripes. Both of them expressed their surprise at winning the competition.

33. The best tops are made of mangroove wood.
    A. True   B. False   C. Cannot be determined

34 If Pak Mat and Adam make tops next year, they will use the mangroove wood.
    A. True   B. False   C. Cannot be determined

35 The public love to watch the top competition.
    A. True   B. False   C. Cannot be determined

36. Pak Mat and Adam will not participate in the top competition next year.
    A. True   B. False   C. Cannot be determined

37. The top that belongs to Pak Mat and Adam is the most beautiful one.
    A. True   B. False   C. Cannot be determined

38. The motive of the author is
    A. to relate the method used by Pak Mat and Adam to make   tops.
    B. to relate about the top competition which is the grand finale.
    C. to relate how Pak Mat and Adam won the competition.
    D. to publicise Pak Mat and Adam as makers of tops.

39. The above passage is probably a
    A. a true story   B   A fiction (short story)
    C. a newspaper report   D. A diary

Passage 4
This morning I together with Misah and Janah, my friends from the religious school went from house to house to collect donations in the form of money and clothings for the flood victims at Selasih Village. After going to wo houses we could not bear the burden of carrying the clothes and other essentials that the people had donated. Misah in a thick-skinned manner, asked the lazy male students to give us a hand. With an open heart, they too followed our rounds. We manage to collect a lot of money, clothings and house utensils. Our pain had not been in vain.

40. The money and the clothings will be given to the victims of the flood.
    A. True   B. False   C. Cannot be determined

41. The girls had been shy to ask the help of the boys.
    A. True   B. False   C. Cannot be determined

42. Together the girls and the boys who worked in cooperation, had obtained more donations than if they they had ventured separately.
    A. True   B. False   C. Cannot be determined

43. The flood victims will appreciate the help of the boys and girls.
    A. True   B. False   C. Cannot be determined

44. If the girls had not asked, the boys could not have helped.
    A. True   B. False   C. Cannot be determined

45. All the students of religious schools are good-hearted.
    A.True   B. False   C. Cannot be determined

46. The above passage is probably a
    A. fiction   B. true story
    C. newspaper report   C. diary

47. The motive of the writer is
    A. to relate how he or she had collected the donation.
    B. to show that he or she likes to help people
    C. to relate his or her experience in collecting donations.
    D. to relate the laziness of the boys.

Passage 5
The cave-dwellers then knew how to start a fire in front of the caves during the night. They could see the light shining inside theeyes of the wild animals who prowled there during nightfall. They will know when danger is looming as long as the fire is still burning.

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48. Many of the people in the cave were saved by the fire which was outside of the cave.
    A. True B.   False   C. Cannot be determined

49. Many wild animals jumped over the fire and killed the people in the cave.
    A. True   B. False   C. Cannot be determined

50. When it rained the fires were lighted inside the cave.
    A. True   B. False   C. Cannot be determined

51. Before this the cave-dwellers got rid of the wild animals by throwing stones at them.
    A. True   B. False   C. Cannot be determined

52. The eyes of the wild animals became like mirrors, reflecting the light.
    A. True   B. False   C. Cannot be determined

53. The writer of the passage
    A. related the story of the ancient people.
    B. told the story about the wild animals who ate human beings.
    C. related about the use of fire to cave-dwellers of ancient   times.
    D. related about the stupidity of ancient people.

54. The above passage is probably a
    A. fiction   B. true story
    C. newspaper report   C. diary

Directions for Question 55 to 59.

Circle the words where the writer is not using exaggerated elements.

Example 4
    The car by the label name PURNAMA is the most magnificient
    in Asia. It is admired by those who value the best quality.
    A. admired   B. best   C. magnificient   D. value
The correct answer is D which is value.

Now please answer the following question by circling the words which is not an exaggeration.

55. Television is much 'admired' as a form of adored public entertainment, as an educational media or as pure entertainment.
    A. entertainment   B. adored
    C. admired   D. public

56. Many of the very generous sponsors had given thousands of dollars to sponsor captivating TV programmes. This glued the audience to their TV screens when their favourite programmes are on telecast.
    A. favourite   B. very
    C. glued   D. sponsor

57. The well-loved programme "The Antics of Super Mat" which really captivated the teen-age viewers had captured the first prize as the most popular TV programme.
    A. captivated   B. first place
    C. popular   D. captured

58. Old-fashioned parents hated the popular programme "The Antics of Super Mat" because their children like to copy the antics of Super Mat.
    A. old-fashioned   B. popular
    C. antics D.   captured

59. The enchanted actress, Nani had captured millions of fans as a result of her brilliance in potraying the character of a modern women.
    A. acted B.   enchanted
    C. millions   D. cleverness

Directions for Question 60 to 63.
    From a group of four sentences below, choose the sentence which is biased or one-sided or that tries to influence the readers

Example 5
A A poor student had managed to obtain a scholarship.
B. The student expressed his thanks to Kampung Pasir
   Association.
C. If Kampung Pasir Association had not come to his assisstance,
   Rahim would not have been able to continue his studies.
D. The Kampung Pasir Association had awarded a scholarship
   worth 3000 dollars a year.
The biassed sentence is   C.
    The correct answer is C

Now please answer the following questions

60. A. One of the behaviour that is encouraged is reading story
       books.
    B. It is time that we put aside those ancient out-dated stories.
    C. The classic stories always relate about life in the palaces.
    D. Science fiction and mystery novels are the favourites of
       pupils in the primary and secondary schools.

The sentence which is biased is ....

A. A wise person will not be wasting his time at the shopping centres.
B. The shopping centres have been the centre of free-mixing among young males and females.
C. The youths shop at big stores which offer the most modern up-to-date fashionable clothes.
D. The fast-food restaurants such as Mac Donald had become the centre of attraction to these youths..

61. The biased sentence is ....

A. Madam Asiah is a mother who is ever willing to sacrifice for the well-being (kepentingn of her people.
B. She (beliau) had done a good deed to the deprived fo society.
C. It is not suprising that she is the epitome of the most honourable lady.
D. The good deeds of the late lady will always be remembered by friends and relatives.

62. The biased sentence is ....

A. An armed robbery had been commited by three young males who sported long hair.
B. They had injured the owner of the shop and killed his wife who evidently had screamed.
C. Cash of about twenty-thousand dollars and all jewelery had been taken away.
D. Everyone is reminded to beware of young males who sported long hair.

63. The biased sentence is ....

Directions for Question 64 to 68.

For the sentences given in the box below, find the hidden assumptions or hidden ideas behind the sentence. Please regard all the ideas in the sentence is true.

Example 6
    The clerk in the post-office will not serve those who did not queue to buy stamps.
. *The hidden assumption behind the sentence is ....*

A People who wish to buy stamps at the post office must queue.
B. The post-office clerk is a proud person.
C. The post-office clerk is a person who does not favour anybody.
D. Those who queue up will be served well.

The correct answer is A.

Now, please answer the following questions, by choosing the best one that describes the hidden assumption.

The jeans under the label 'Rust' is better than the jeans labelled Brush because it is more expensive.

A. The jeans 'Rust' are made of better materials.
B. The more expensive a pair of jeans are the, the better the quality.

C. The jeans 'Rust' are made of inferior materials.

D. Jeans are better if their price is more expensive.

64. The hidden assumption is ....

Faridah is a clever girl as she does not challenge the words of herteachers.

The hidden assumption behind the sentence is ....

A. Faridah becomes clever when she follows the commands of her teachers.

B. All pupils who are clever do not challenge their teachers.

C. Only those who are stupid will challenge their teachers.

D. Most of the pupils who are clever will not challenge their teachers.

One good way to lessen the cases of car burglary is to install a 'car alarm'.

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66. The hidden assumption behind the above sentence is:

A. A heavy punishment for car burglars will lessen car burglary

B. Burglars will not dare to steal cars with the gadget.

C. The alarm will only make a sound when the burglar enters the car.

D. The car alarm is an effective way to prevent cars being stolen.

Let us improve the compunds of our house. An unkempt compound will look untidy and will be the living quarters of snakesor other animals.

---

67. The hidden assumption behind the above sentence is:
A. The compound of the house is unkempt.
B. An unkempt compound will attract snakes and other animals.
C. The speaker is a conscientous person.
D. The compound had not been looked after by the gardener.

Mr. Marzuki, a lawyer of high moral character.would not have commited the burglary.

---

68. The hidden assumption behind the sentence is:
A. Mr. Marzuki had never commited a crime such as burglary.
B. There is no evidence to show that Mr Marzuki had committed   the crime.
C. A lawyer is a good person and as such will not commit a   crime such as burglary.
D. Mr. Marzuki is not a man of high principle if he committed   the burglary.

Choose the best sentence that shows an *opinion* or a *factual* information from the group of four sentences below.

Example 7
C7. *The sentence that shows an opinion is:*
_ A. *The population of Singapore is nearly three million.*
  B. *Singaporeans are people who worked hard to enhance their economy.*
  C. *Women is also encouraged to work.*
  D. *The country's productivity increased year by year.*
The correct answer is B

Now, please answer the following questions

69. The sentence which shows an opinion is:

A. New York is the biggest and most beutiful city in America.
B. New York is known as the city of sky-scrapers.
C. During the night bright colourful lights lighten up the dark night.
D. New York is also known for its high crime rate.

70. The sentence which shows an opinion is:

A. Many of the relatives visited Aman's grandmother in the hospital.
B. Aman's grandmother suffered from cancer of the intestine.
C. The condition of Aman's grandmother seems very critical.
D. The specialist surgeon had already performed the operation.

71. The sentence that shows a factual information is:

A. A high-rise flat is the type of housing suitable for Singaporeans.
B. Most Singaporeans live in flats.
C. The condition of the flats is cosy and clean.
D. Many of the residents love the flat environment

72. The sentence that shows a factual information is:

A. The toothpaste Sparkling White really brightens your life.
B. It is made of fresh ingredients of very high quality.
C. It is recommended by well-known dental specialists.
D. The tooth-paste will be on the market next month.

Please state whether the sentence given below is an opinion, a true fact a false fact or a superstition.

Example 8
C8. *The things sold in Geylang Market is very cheap.*
  A. *an opinion*   B. *a true fact*
  C. *a false fact*   D. *a superstition*
The correct answer is A.

Now, please answer the following questions in the same way.

73 A maiden who likes to sing in the kitchen will marry an old man.
 A. an opinion   B. true
 C. false   D. a superstition

74. A person who could't afford should not own a car.
 A. an opinion   B. true
 C. false   D. a superstition

75. Kuala Lumpur is the capital of Malaysia, while Jakarta is the capital of Indonesia.
 A. an opinion   B. true
 C. false   D. a superstition

76. The countries of South-east Asia have four seasons.
 A. an opinion   B. true
 C. false   D. a superstition

77. The midday light shower signifies that a important man had passed away.
 A. an opinion   B. true
 C. false   D. a superstition

Directions for Question 78 to 95.
 Please read the first and second story below, and then answer the questions that follow.

Passage 6
First story
The calf stood upright when it heard the sounds of the passing lion in the forest. The colour of its fur is similar to the colours of plants surrounding it. The lion will not be able to see the calf.
Second story
During the war the soldiers painted their uniforms and their war materials like the colours of the earth and the surrounding forest. The colours are similar to the colours of the trees, the earth and the skies surrounding them. The enemies will not be able to see them in such forest.

---

78. What are the similarities between the two stories?
 A. Both stories tell us about how colours can be used for protection.
 B. Both stories tell us abourt the soldiers who painted their uniforms.
 C. Both stories tell us about the dow and the lion.
 D. Both stories tell us about the importance of colour.

79. What are the differences between the two stories?
 A. One tell us about clothes while the other tell us about leaves.
 B. One tell us about colours while the other tell us about plants.
 C. One tell us about animals while the other tell us about plants.
 D. One tell us about animals while the other tell us about humans.

80. What is the motive of the first author?
   A. He tried to influence the reader to undertand about animals.
   B. He tried to explain the situation and the same time to show his wisdom.
   C. He tried to offer facts in a clear way.
   D. He tried to get the readers' attention.

81. From what source had the first story being taken?

   A. a leisure magazine   B. a children's story
   C. a science textbook   D. a general article

82. From what source had the second story being taken?

   A. a leisure magazine   B. a children's story
   C. a science textbook   D. a general article

Passage 8
First Story
In the olden days people used the bullock cart to move from oneplace to another. Even though it is not fast moving, but the passengers were able to relax and do not have to walk.a long way. At the same time they could transport heavy goods such as coconuts,and fruits to far-away places. These olden days people love to travel by bullock-carts.
Second Story
Presently, the mass rapid trains is a neccesity in order for one to travel towards the compact city-centre Thousands of people get into the trains as fast as they could and then alight attheir destination in the same brisk manner. Without this mass-rapid transport, employees in the city will be late for work.

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83. What are the similarities between the two stories?
   A. Both tell about the importance of land transport.
   B. Both tell about the travel time of land transport.
   C. Both tell about the passengers of land transport.
   D. Both tell about how people travel from place to place.

84. What are the differences between the two stories?
   A. One tells about the things that are transported, and the other tells about people who doesn't carry any luggage.
   B. One tells about the bullock-cart and the other about the mass-rapid trains.
   C. One tells about people in the city and the other about people in the towns.
   D. One telss about the importance of time and the other about the little value placed on time.

85. What is the motive of the author of the first story?
 A. to show the importance of bullock-carts of the olden days.
 B. to show the difficulties faced by people in the olden days.
 C. to show how people in the olden days travel from one place to another.
 D. to show how people in the olden days transport padi and fruits.

86. What is the motive of the author of the second story?
 A. to show about the fast speed of the mass-rapid trains.
 B. to show about the attitude of the present-day passengers.
 C. to show the comport experienced by the passengers of mass-rapid trains
 D. to show the indispensibility of mass rapid trains.

87. From what source was the first story taken?
 A. light entertainment magazine   B. children's story book
 C. science textbook   D. general article

88. From what source was the second story taken?
 A. light entertainment magazine   B. children's story book
 C. science textbook   D. general article

Passage 8
First story
Once upon a time it was easy to find sea turtles swimming in the sea. , but now many of the sea turtles have been killed for their meat, their eggs, their skin and their oil, such that only very few sea turtles are left. Even though there are laws to protect the seaturtles, in some places many had been hunted and caught in the nets of fisherman. At present, many of the turtle-protectors put their effort to save the turtles, to protect their eggs, their breeding grounds and the beaches where they used to relax.Without their effort these sea turtles will be extinct forever
Second Story
In the old days there was a big turtle who liked to spend his time swimming in the Pacific Ocean. Slowly, he would munch the sea-plants and the small fish that lived in the surrounding water ,sometimes he would chew the prawns that used to play behind the rocks that acted as a boundary between the beaches and the deep sea. That turtle lived in the sea, but sometimes he swam to thesurface of the water to breathe in the fresh air and to feel theheat of the sun at his skin. He watched the sky during the day and the moon during the night, he also watched the birds flying across the ocean. Sometimes he felt bored and tired of swimming, how he wished he could relax at in island at the centre of the ocean.

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89. What are the similarities between the two stories?
 A   Both tell about the difficulties of the turtle in the sea.
 B. Both tell about what turtles like.
 C. Both tels about turtles.
 D. Both tellsabout the food turtles eat.

90. What are the differences between the two stories?
   A. One tells about the condition of turtles which are nearly extinct and the other tells the story of a turtle in the Pacific Ocean.
   B. One tells about the uses of the turtles while the other tells about the life of turtles in the ocean..
   C. The first one tells about the effort to save the turtles, and the other tells about the sufferings of a turtle.
   D. The first one tells about the condition of turtles ay present, and the second about a turtle who lives long ago.

91. What is the motive of the writer of the first story?
   A. to relate about human cruelty towards turtles.
   B. to tell about the special condition of the turtles at that time.
   C. to get the readers attention on the efforts to save the turtles.
   D. to beg the reader not to kill turtles.

92. What is the motive of the writer of the second story?
   A. to get the readers to sympathise with the turtles.
   B. to entertain the readers with a story about a turtle.
   C. to instruct the readers about the life of the turtle.
   D. did not have any aim in particular.

93. From what source was the first story taken?
   A. light entertainment magazine   B. children's story book
   C. science textbook   D. general article

94. From what source was the second story taken?
   A. light entertainment magazine   B. children's story book
   C. science textbook   D. general article

95. Which story would you refer to if you are writing a scientific type of composition about a turtle.
   A. the first story only   B. the second story only
   C. both stories   D. none of the stories.

Direction for Question 96 to 100.
   Based on the passages given, you are required to assess whether the answers, the arguments presented are weak or strong.

Example 9
Several trainee nurses in a hospital were discussing whether nurses should be allowed to have long finger-nails. Mary said, "during this era a woman who has short-finger-nails will be labelledas old-fashioned and do not follow changes of the times." Hamidahthen interrupted, "the hospital has no right to determine the lengths of nurses' fingernails." Zola who is usually quiet, suddenly offered her opinhort finger-nails are easy to ion, "it is appropiate that nurses should have short finger-nails as long finger-nails will endanger the patients when we bathe or bandage them." Immediately Kasmah added, "yes, sclean."

C9 Whose argument is the *weakest*
   A.   *Mary's argument*   B . *Hamidah's argument*
   C.   *Zola's argument*   D. *Kasmah's argument*
The correct answer is *A. Mary's opinion*

Now, please answer the following questions.

Passage 9

During a class discussion about the freedom of animals, Teacher Ali purposely asked his pupils to think about the conditions of animals in the zoo. "What if the zoo is built in such a way that the animals are free to roam around, but it is the visitors of the zoo who will have to walk around the cages.?" he said. Hashim answered, ""that is a good idea, sir, in natural situation, it is the human who lives in enclosed places, but the animals roam about freely." Wong then expressed his opinion, yes, it is time that man stopped being cruel to animals, today many species are nearly extinct, we have to protect them." "But if that is the case, it will be easy for the big animals to eat up the smaller animals like the mouse deer, soon, only the elephants, the tigersand the lions will be left, " Masni stated. Then Balu answered, "..but don't forget that if that is the case, the zoo keeper would not have to feed the animals, they also do not have to clean the zoo, therefore the cost of keeping the zoo will be less."

96. Whose argument is the weakest?
   A. Hashim's argument   B. Wong's argument
   C. Masni's argument   D. Balu's argument

Passage 10

"Should students work during the long vacation?" asked the head prefect of Seri Kallang School. "All of us do not come from a rich families, the income that we received, in a way could be used to support our school expenses," Kamil then expressed his opinion. "Furthermore we will be bored if we stay at home too longwe might as well fill in our time with beneficial work.." Hasnah voiced her agreement. "But don't forget that, there is a possibilitythat those who work might neglect their books and their lessons, said Sheila. Then Johnny disagreed, "we are not children, we are free to do what we like," The discussion then became more heated.

97. Whose argument is the weakest?
   A. Kamil's's argument   B. Hasnah's argument
   C. Sheila's argument   D. Johnny's argument

Passage 11

Harun had failed to submit the essay requested by his history teacher. He was thinking of a plausible reason to give to the teacher. At first he thought, "I can say that I had forgotten about the essayquestion." Later he had second thoughts, "I can also explain that I have done the essay but it had been lost." His third thought emerged, "it is better for me to tell the truth that I had been going to the movies." Finally he argued " I can say that I have helped to send my friend to the hospital" I can say that I have helped to send my friend to the hospital." Finally he said to himself, "it is better for me to tell the truth that I had been going to the movies."

98 Which argument is the strongest?

A.	the first argument	B.	Hasnah's argument
C.	the third argument	D.	Johnny's argument

Passage 12

Manis and her brothers come from a well-to-do family. They were debating about the pros and cons of going for a holiday overseas during the school vacation, when the world was still raging with the Gulf War . "It is not good to go for a tour, we could be captured and the plane could be bombed," said Manis. "Yes, don't go, added Jais, "it is better for us to use the money for other purpose, like buying useful things." "We won't be going near to the Gulf area, we could go to Hongkong; if we go there, we could buy a lot of souveniors," Yasin chipped in.. The eldest brother Long expressed his opinion, "when we travel we get lots of new experiences, we could learn so many things from our travels."

99. Which argument is the strongest?

A.	Manis's argument	B.	Jais's argument
C.	Yasin's argument	D.	Long's argument

Passage 13

In a debate, the opposition members were opposing the proposal that the government should impose fines on children who failed to support their own parents. The first opposition put forward the idea that the payment of fines would induce the children to feel that the provision for parents is something forced on them, not something which they should realize on their own accord. The first proposer had already expressed his argument that fines will be effective in reducing the number of children who had neglected their own parents. The second proposer then argued that this would also reduce the number of old people who would be placed in homes for aged. The second opposition then argued that the well-being of the aged are better served in the homes for the aged rather than in their own houses.

100. Whose argument is the weakest?

A.	the first opposition	B.	the second opposition
C.	the first proposer	D.	the second proposer.

===================Thank you===================

APPENDIX 12
Answer Sheet to Trial MLCRT

Nama:
Sekolah:
Darjah:

KERTAS JAWAPAN BAGI UJIANTARA MEMBACA SECARA KRITIKAL

1. A B C D	26. A B C D	51. A B C D	76. A B C D
2. A B C D	27. A B C D	52. A B C D	77. A B C D
3. A B C D	28. A B C D	53. A B C D	78. A B C D
4. A B C D	29. A B C D	54. A B C D	79. A B C D
5. A B C D	30. A B C D	55. A B C D	80. A B C D
6. A B C D	31. A B C D	56. A B C D	81. A B C D
7. A B C D	32. A B C D	57. A B C D	82. A B C D
8. A B C D	33. A B C D	58. A B C D	83. A B C D
9. A B C D	34. A B C D	59. A B C D	84. A B C D
10. A B C D	35. A B C D	60. A B C D	85. A B C D
11. A B C D	36. A B C D	61. A B C D	86. A B C D
12. A B C D	37. A B C D	62. A B C D	87. A B C D
13. A B C D	38. A B C D	63. A B C D	88. A B C D
14. A B C D	39. A B C D	64. A B C D	89. A B C D
15. A B C D	40. A B C D	65. A B C D	90. A B C D
16. A B C D	41. A B C D	66. A B C D	91. A B C D
17. A B C D	42. A B C D	67. A B C D	92. A B C D
18. A B C D	43. A B C D	68. A B C D	93. A B C D
19. A B C D	44. A B C D	69. A B C D	94. A B C D
20. A B C D	45. A B C D	70. A B C D	95. A B C D
21. A B C D	46. A B C D	71. A B C D	96. A B C D
22. A B C D	47. A B C D	72. A B C D	97. A B C D
23. A B C D	48. A B C D	73. A B C D	98. A B C D
24. A B C D	49. A B C D	74. A B C D	99. A B C D
25. A B C D	50. A B C D	75. A B C D	100. A B C D

------------------------TERIMA   KASIH------------------------

APPENDIX 13
Keyed Answers for Trial MLCRT

1. A **B** C D	26. **A** B C D	51. A **B** C D	76. A B **C** D
2. A B C **D**	27. A B **C** D	52. **A** B C D	77. A B C **D**
3. A **B** C D	28. **A** B C D	53. A B **C** D	78. **A** B C D
4. **A** B C D	29. A B **C**	54. **A** B C D	79. A B C **D**
5. A B **C** D	30. **A** B C D	55. **A** B C D	80. A B **C** D
6. A B **C**	31. A B C **D**	56. A B C **D**	81. A B C **D**
7. **A** B C	32. **A** B C D	57. A **B** C D	82. A B C **D**
8. A B **C**	33. A B **C**	58. A B **C** D	83. A B C **D**
9. A **B** C	34. A B **C** D	59. **A** B C D	84. A **B** C D
10. **A** B C	35. A B **C** D	60. A **B** C D	85. A B **C** D
11. A B **C**	36. A B **C**	61. **A** B C D	86. A B C **D**
12. A B **C**	37. **A** B C	62. A B **C** D	87. A B C **D**
13. A B **C**	38. A B **C**	63. A B C **D**	88. A B C **D**
14. A B **C**	39. A B **C**	64. A **B** C D	89. A B **C** D
15. A B **C**	40. **A** B C	65. A B C **D**	90. **A** B C D
16. **A** B C	41. **A** B C D	66. A B C **D**	91. A B **C** D
17. **A** B C	42. **A** B C D	67. **A** B C D	92. A **B** C D
18. **A** B C	43. **A** B C D	68. A B **C** D	93. A B **C** D
19. A B **C**	44. A B **C** D	69. **A** B C D	94. A **B** C D
20. A B **C** D	45. A B **C** D	70. A B **C** D	95. **A** B C D
21. A B **C** D	46. A B C **D**	71. A **B** C D	96. A **B** C D
22. **A** B C D	47. A B **C**	72. A B C **D**	97. A B C **D**
23. A B **C**	48. **A** B C	73. A B C **D**	98. A B C **D**
24. A **B** C	49. A B **C** D	74. **A** B C D	99. A B C **D**
25. A B **C**	50. **A** B C D	75. A **B** C D	100. A **B** C D

<u>Appendix 14</u>
<u>INVENTORI BERFIKIR DAN MEMBACA SECARA KRITIKAL</u>

Sila bulatkan huruf-huruf yang kamu fikir paling sesuai bagi menyatakan keadaan kamu seberapa tepat yang boleh. Tidak ada jawapan yang betul atau salah. Jawablah dengan ikhlas.

<u>Apabila membaca atau mendengar sesuatu:</u>

1. Saya fikirkan tentang isi utama yang hendak dikemukakan oleh seseorang penulis atau pencakap.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

2. Saya percaya apa yang dikatakan oleh seseorang penulis atau pencakap itu betul.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

3. Saya setuju dengan pendapat penulis atau orang yang bercakap.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

4. Saya hubungkan apa yang saya baca atau dengar dengan pengalaman sendiri.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

5. Saya mempersoalkan mengapa seseorang penulis atau orang yang bercakap itu berkata begitu.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

6. Saya memikirkan samada apa yang dikatakan oleh seseorang penulis atau orang yang bercakap itu benar.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

7. Saya mempersoalkan maksud seseorang penulis atau seseorang yang bercakap.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

8. Saya memikirkan sebab-sebab seseorang penulis atau orang-orang mengatakan sesuatu.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

9. Saya membandingkan pandangan penulis atau orang yang bercakap dengan pandangan orang lain.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

10. Saya bandangkan kenyataan yang saya dengar atau baca dengan maklumat yang lain.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

11. Saya bandingkan perkara yang saya dengar atau baca dengan pengalaman saya sendiri.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

12. Saya tahu apakah fakta sebenar dan apakah pendapat penulis atau orang yang bercakap.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

13. Saya menimbangkan kebenaran/ketepatan sesuatu kenyataan yang saya dengar atau baca.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

14. Saya fikirkan samada sesuatu kenyataan itu datang dari sumber yang boleh dipercayai.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

15. Saya cuba mengetahui samada sesuatu kenyataan itu bercanggahan antara satu sama lain.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

16. Saya cuba mengetahui samada apa yang dikatakan oleh penulis atau orang yang bercakap itu boleh dipercayai.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

17. Saya semak samada maklumat yang diberi oleh penulis atau orang yang bercakap itu mencukupi.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

18. Saya dapat mengenali kenyataan-kenyataan yang tidak jelas atau yang samar-samar.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

19. Saya dapat mengenali kesimpulan yang salah atau yang mendadak dalam sesuatu kenyataan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

20. Saya dapat mengenali sesuatu jalan fikiran yang tidak logik yang terkandung dalam kenyataan-kenyataan yang saya dengar atau baca.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

21. Saya tahu anggapan atau fikiran yang tersembunyi disebalik sesuatu kenyataan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

22. Saya dapat mengecam kenyataan yang menyeleweng.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

23. Saya cuba membezakan kenyataan yang objectif dan yang subjektif.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

24. Saya beri tumpuan pada makna atau maksud yang hendak disampaikan oleh pengarang atau orang yang bercakap.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

25. Saya tahu bila sesuatu pengiklanan dilakukan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

26. Saya cuba mengetahui kepada siapa sesuatu iklan itu ditujukan.
    a. setiap masa   b. se alu   c. kadang-kadang   d. tidak pernah

27. Saya cuba menilain apa yang dinyatakan oleh sesuatu iklan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

28. Apabila membaca atau mendengar cerita saya boleh bezakan samada cerita itu benar atau dreka-reka.
    a. setiap masa   b. se alu   c. kadang-kadang   d. tidak pernah

29. Saya memikirkan mengapa sesuatu watak itu berkelakuan seperti yang dinyatakan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

30. Saya bezakan penutup sesuatu cerita dengan penutup/atau kesimpulan yang saya buat sendiri.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

31. Saya fikirkan samada sesuatu cerita itu menarik atau tidak.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

32. Saya fikirkan tentang jalan cerita atau turutan peristiwa-peristiwa dalam sesuatu cerita yang saya baca atau dengar.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

33. Saya dapat mengecam apabila sesorang penulis atau seseorang cuba untuk mempengaruhi orang lain.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

34. Saya dapat mengecam bila seseorang penulis atau pencakap sedang menambah-menambah sesuatu.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

35. Saya dapat mengecam bila seseorang penulis atau pencakap sedang menganggap serong tentang seseorang atau sesuatu.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

36. Saya tahu apakah fakta yang boleh dipakai (relevan) dan yang tak boleh dipakai (tidak relevan).
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

37. Saya dapat membazakan antara isi utama dan butir-butir terperinci dari apa yang ditulis atay yang dinyatakan.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah.

38. Saya tahu apakah hujah-hujah atau kenyataan-kenyataan yang kuat dan yang lemah.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

39. Saya dapat menentukan yang mana sebab dan yang manakah akibat dalam sesuatu penulisan atau perbualan.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

40. Saya tahu tentang jenis-jenis penulisan.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

terima kasih

Appendix 15

CRITICAL THINKING DISPOSITION INVENTORY

Please circle the appropiate letters in answer to the statements, according to what you actually do. There is no right or wrong answers.

When and while reading and or listening:

1. I think of the main points that the author or speaker wish to convey.
   a. all the time   b. often   c. seldom   d. never

2. I believe what the author or speaker says is true.
   a. all the time   b. often   c. seldom   d. never

3. I agree with the opinions of the author or speaker.
   a. all the time   b. often   c. seldom   d. never

4. I relate what I read or hear with my own past experiences.
   a. all the time   b. often   c. seldom   d. never

5. I question why the author or speaker said certain things.
   a. all the time   b. often   c. seldom   d. never

6. I question whether what the author or speaker said is true.
   a. all the time   b. often   c. seldom   d. never

7. I question the author's or speaker's motive or intention for writing.
   a. all the time   b. often   c. seldom   d. never

8. I think of the reason why the author or speaker said certain things.
   a. all the time   b. often   c. seldom   d. never

9. I compare the author's or speaker's view with other people's point of view.
   a. all the time   b. often   c. seldom   d. never

10. I compare statements which I hear or read with other information.
    a. all the time   b. often   c. seldom   d. never

11. I compare the things I hear or read with my own experiences.
    a. all the time   b. often   c. seldom   d. never

12. I know what is a true fact and what is an opinion expressed by the author or speaker.
    a. all the time   b. often   c. seldom   d. never

13. I assess the accuracy of the statements I hear or read.
    a. all the time   b. often   c. seldom   d. never

14. I find out whether the statement comes from believable authority.
    a. all the time   b. often   c. seldom   d. never

15. I try to see whether the statements contradict one another.
    a. all the time   b. often   c. seldom   d. never

16. I try to find out whether what the author or speaker says is reliable.
    a. all the time   b. often   c. seldom   d. never

17 I check whether the information given by the author or speaker is adequate.
    a. all the time   b. often   c. seldom   d. never

18. I can detect ambiguous or unclear statements.
    a. all the time   b. often   c. seldom   d. never

19. I can see or detect wrong or hasty conclusions in statements.
    a. all the time   b. often   c. seldom   d. never

20. I can detect an illogical reasoning whenever I hear or read.
    a. all the time   b. often   c. seldom   d. never

21. I know the assumptions or hidden idea behind statements made.
    a. all the time   b. often   c. seldom   d. never

22. I can detect misleading statements or composition.
    a. all the time   b. often   c. seldom   d. never

23. I try to distinguish objective and subjective statements.
    a. all the time   b. often   c. seldom   d. never

24. I focus on the meaning the author or speaker wish to say.
    a. all the time   b. often   c. seldom   d. never

25. I know when a piece of writing is an advertisement
    a. all the time   b. often   c. seldom   d. never

26. I try to find out for whom the advertisement is written for.
    a. all the time   b. often   c. seldom   d. never

27 I try to assess what the advertisement says.
    a. all the time   b. often   c. seldom   d. never

28. When reading or listening to stories, I can differentiate whether it is true or make-believe.
    a. all the time   b. often   c. seldom   d. never

29. I question why the characters in the stories behave in a certain way.
    a. all the time   b. often   c. seldom   d. never

30. I compare the conclusions of the story to my own conclusion.
    a. all the time   b. often   c. seldom   d. never

31. I think whether a story is interesting or not.
    a. all the time   b. often   c. seldom   d. never

32. I think of the main story-line or the main sequence of a story.
    a. all the time   b. often   c. seldom   d. never

33. I can detect when the author or speaker is using words to influence people.
    a. all the time   b. often   c. seldom   d. never

34. I can detect when the author or speaker is exaggerating something or somebody.
    a. all the time   b. often   c. seldom   d. never

35. I can detect when the author or speaker is biased against something or somebody.
    a. all the time   b. often   c. seldom   d. never

36. I know what are the relevant facts and what are irrelevant.
    a. all the time   b. often   c. seldom   d. never

37. I can distinguish the main points and the details of what is written or said.
    a. all the time   b. often   c. seldom   d. never

38. I know what are strong and what are weak arguments.
    a. all the time   b. often   c. seldom   d. never

39. I can determine which is the cause and which is the effect in anything spoken or writen.
    a. all the time   b. often   c. seldom   d. never

40. I know the different types of written materials.
    a.
    a. all the time   b. often   c. seldom   d. never

Thank you

APPENDIX 16

QUESTIONNAIRE

Please fill in the blanks, or circle the appropiate letters.

1. Name of pupil ....

2. Address .... 3. Telephone number ....

4. Name of school .... 5. Class ....

7. Age : ....years ....months _ 8. Sex :girl /boy................................

9. I live in a
   - A 1 or 2-room HDB flatb.
   - B. 4-room HDB flatd.
   - E. Executive flat
   - G semi-detached or detached house
   - J. others

   - B. 3-room HDB flat
   - D. 5-room HDB flat
   - F. HUDC flat/terrace house
   - H wooden house

10. Number of people living in the house (including yourself) ....

11 My **father's** highest level of education is
   - A. no schooling
   - C. Primary 6
   - E. Secondary 3
   - G A Level, College or Polytechnic

   - B. Primary 1 to Primary 5
   - D. Secondary 1 or Secondary 2
   - F. Secondary 4
   - H. University

12. My **mother's** highest level of education is
   - A. no schooling
   - C. Primary 6
   - E. Secondary 3
   - G A Level, College or Polytechnic

   - B. Primary 1 to Primary 5
   - D. Secondary 1 or Secondary 2
   - F. Secondary 4
   - H. University

13. I know
   A. English   B. Chinese   C. Tamil   D. another language ....

15. At home I use English
   - A. all the time   B. very often   C. often
   - D. a litt e   E. never/none at all

15. I use English with my
   - A. father   B. mother   C. s'sters and brothers
   - D. grandparents   E. others ....

16. With my friends, I use
   - A. only English   B. only Malay
   - C. Malay and English   D. other languages (.......................)

PSLE Result

English
Malay   ....
Mathematics   .   /
Science   ....
Overall points ...

APPENDIX I7
UJIAN TARA MEMBACA SECARA KRITIKAL

Arahan: Jangan membuka buku ini sehingga kamu diberitahu.

Ujian ini mengandungi beberapa petikan . Kamu dikehendakki membaca petikan-petikan tersebut dan kemudian menjawab soalan yang mengikutinya. Tolong bulatkan huruf yang kamu fikir ialah bagi jawapan yang betul di kertas jawapan yang disediakan. Kamu boleh membaca semula sesuatu perenggan seberapa banyak kali yang kamu suka. Jika kamu tidak berapa pasti jawapan bagi sesuatu soalan, kamu boleh menjawab soalan lain dahulu kemudian baru mencuba soalan yang ditinggalkan tadi.

Arahan untuk soalan 1 - 5

Berikan kesimpulan yang wajar atau yang sepatutnya bagi ayat-ayat berikut. Anggaplah kenyataan yang tertulis itu benar.

Contoh 1
Semua kucing suka minum susu. Comel ialah seekor kucing.
A.   Comel suka minum susu.
B.   Comel tidak suka minum susu.
C.   Ada kucing yang tidak suka susu.
D.   Tidak ada kucing yang tidak suka susu

Jawapan yang betul ialah 'A'.

Sekarang jawablah soalan-soalan berikut, anggaplah kenyataan-kenyataan yang tertulis itu benar.

1. Semua limau di dalam kotak itu manis. Limau ini diambil dari kotak itu.
   A. Limau dari kotak itu tentu masam.
   B. Limau dari kotak itu tentu manis.
   C. Ada limau dari kotak itu yang tidak manis.
   D. Sebahagian dari limau di kotak itu manis.

2. Semua budak perempuan suka main anak patung.Putih suka main anakpatung.
   A. Putih tak suka bermain anak patung.
   B. Putih tentulah seorang budak perempuan.
   C. Putih tentulah bukan budak perempuan.
   D. Putih mungkin seorang budak perempuan, mungkin juga seorang budak lelaki.

3. Semua kanak-kanak yang tinggal di rumah Nombor 7 ialah keluarga Pak Abu. Bedah tinggal di rumah itu.
   A. Pasti Bedah bukan keluarga Pak Abu.
   B. Pasti Bedah ialah keluarga Pak Abu.
   C. Mungkin Bedah ialah keluarga Pak Abu.
   D. Mungkin Bedah bukan keluarga Pak Abu.

4. Jika seseorang tidak sakit, ia tidak merasa lesu. Orang tua itu merasa lesu.
   A. Orang tua itu pasti sakit.
   B. Orang tua itu pasti tidak sakit.
   C. Mungkin orang tua itu sakit, mungkin tidak.
   D. Mungkin orang tua itu tidak sakit.

5. Ramai budak berumur sepuluh tahun yang sudah mengaji Quran. Aminah berumur sepuluh tahun.
   A. Mungkin Aminah belum mengaji Quran.
   B. Pasti Aminah belum mengaji Quran.
   C. Aminah mungkin sudah mengaji Quran.
   D. Pasti Aminah sudah mengaji Quran.

Arahan bagi soalan 6 hingga 13
Jawablah soalan yang mengikuti ayat-ayat yang diberi. Kamu dikehendakki menilai samada kesimpulanan yang diberi berdasarkan ayat-ayat yang diberi itu benar, tidak benar atau tidak dapat diketahui.

> Contoh 2
>
> *Jika hari hendak hujan adalah awan hitam. Tidak ada awan hitam hari ini.*
>
> *Oleh itu hari ini tidak akan ada hujan.*
> *A. Betul   B. Tidak   C. Tidak pasti*
>
> *Jawapan yang betul ialah 'C' iaitu tidak pasti.*

Sekarang jawablah soalan-soalan berikut.

> Malik dan Azman masing-masing mempunyai sepuluh masalah kira-kira yang harus dibuat. Mereka mula membuatnya pada masa yang sama, tetapi Malik selesaikan kira-kiranya lima belas minit sebelum Azman.

6. Malik lebih pandai dari Azman.
   A. Betul   B. Tidak   C. Tidak pasti

7. Azman mendapat lebih banyak jawapan kira-kira yang betul dari Malik.
   A. Betul   B. Tidak   C. Tidak pasti

> Salah seorang murid dari Darjah 5B Sekolah Seri Taming telah menjadi juara Pertandingan Teka Kata Kawasan Timur.

8. Guru Darjah 5B ialah guru teka-kata yang paling baik di Kawasan Timur.
   A. Betul   B. Tidak   C. Tidak pasti

9 . Murid-murid di Sekolah Seri Taming ialah murid-murid yang terpandai di Kawasan Timur.
   A. Betul   B. Tidak   C. Tidak pasti

Encik Wan dan Encik Din pergi mengail bersama-sama. Encik Wan mendapat enam ekor ikan sementara Encik Din mendapat tiga ekor sahaja. Encil Wan dan Encik Din menggunakan umpan yang berlainan

10. Umpan yang digunakan oleh Encik Wan lebih baik dari umpan Encik Din.
    A. Betul   B. Tidak   C. pasti

Guru Darjah 4A menyimpan rekod tentang murid-murid yang tidak membawa buku ke sekolah pada bulan April. Lima orang murid tidak membawa buku karangan dan sepuluh orang murid tidak membawa buku bacaan

11. Murid-murid tidak membawa buku bacaan lebih kerap pada bulan April daripada lain-lain bulan.
    A. Betul   ·   B. Tidak   C. Tidak pasti

Jika Mak Limah mendapat suntikan dari doktor, ia akan sembuh dari penyakitnya. Ia kemudian sembuh

12. Mak Limah tentu telah mendapat suntikan dari doktor.
    A. Betul   B. Tidak   C. Tidak pasti

Si Labi akan menjadi kaya jika ia menggali gunung itu. Dia tidak menjadi kaya.

13. Si Labi pasti tidak menggali lubang itu.   ·
    A. Betul   B. Tidak   C. Tidak pasti

Arahan bagi soalan 14 hingga 39

Jawablah soalan yang mengikuti petikan yang diberi. Kamu dikehendakki menilai tafsiran yang diberi secara kritikal.

Petikan 1

Ahmad mencari-cari basikalnya yang hilang di kampung itu. Dia tahu kawannya Kasim, seorang budak miskin kaki ponteng, tinggal di kampung itu. Budak yang selalu ponteng memang pencuri. Matanya memerhati di kiri kanan jalan, kemudian, nun di tepi rumah buruk dia ternampak basikalnya tercampak di situ.

Contoh 3

    C3. *Kasim telah mencuri basikal Ahmad.*
        A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti
Jawapan yang betul ialah 'C' iaitu tidak pasti.

    C4.. *Ahmad tinggal di kampung itu.*
        A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti
Jawapan yang betul ialah 'B' iaitu mungkin tidak.

Sekarang jawab soalan-soalan yang berikut berdasarkan petikan yang sama.

14.   Ahmad seorang budak yang lalai.
    A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

15. Ahmad dan Kasim berkawan baik.
    A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

16.   Kasim tinggal di rumah buruk itu.
    A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

17.   Perkataan apakah yang paling serong, atau paling memburukkan Kasim.

    A. kawannya   B. budak miskin   C. kaki ponteng   D. tercampak

24.   Petikan di atas mungkin suatu
    A. cerita benar   B. cerita pendek
    C. laporan akhbar   D. catatan harian

Petikan 2

Nora ingin mendapat markah yang tinggi untuk ujian ejaannya padahari Jumaat itu. Pelajaran ejaan sangat susah. Pada masa yang lalu ia mendapat markah yang agak rendah. Ibu Nora berkata, "Mengapa tidak belajar sedikit-sedikit setiap hari, daripada belajar semua perkataan sekali gus pada malam Jumaat?" Setiap malam dalam minggu itu Nora belajar ejaan. Pada hari Jumaat ia mendapat markah yang tinggi untuk ujian itu

---

18.   Kanak-kanak dapat belajar lebih banyak lagi di rumah dari di sekolah.
    A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

19. Kebanyakan ujian ejaan terlalu payah.
    A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

20. Kanak-kanak yang belajar sedikit demi sedikit setiap hari tidak akan menjadi pandai.
    A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

21. Apakah yang hendak ditunjukkan oleh penulis?
    A. Bagaimana rajinnya Nora belajar.
    B. Belajar sedikit-sedikit lama-lama pandai.
    C. Mendengar kata ibu itu baik akhirnya.
    D. Jangan tunggu masa terakhir baru belajar.

22. Yang mana satukah yang merupakan pendapat?
    A. Pelajaran ejaan sangat susah.
    B. Nora ingin mendapat markah yang tinggi.
    C. Nora belajar ejaan sedikir-sedikit setiap malam.
    D. Pada hari Jumaat ia mendapat markah yang tinggi.

Petikan 3

Pak Mat dan anaknya Adam telah menjadi juara peraduan gasing yang diadakan sebagai acara kemuncak Pesta Bulan Budaya. Gasing mereka diadili sebagai yang tercantik dan paling menarik pusingannya. Mereka membuat gasing kemenangan itu dari kayu bakau yang diambil dari belakang rumah mereka. Kepala gasing itu telah diukir berbentuk kepala naga, sementara badannya dicat berbelang-belang dengan warna merah dan putih. Kedua-duanya mengatakan mereka tidak sangka mereka akan menang.

---

23. Gasing yang terbaik dibuat dari kayu bakau.
    A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

24. Jika Pak Mat dan Adam membuat gasing tahun hadapan, mereka akan menggunakan kayu bakau.
    A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

25. Orang ramai amat gemar menyaksikan peraduan gasing.
    A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

26 Gasing Pak Mat dan Adamlah yang paling cantik.
    A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

27. Tujuan penulis cerita ini ialah untuk
    A. Menceritakan cara Pak Mat dan Adam membuat gasing.
    B. Menceritakan tentang peraduan gasing acara kemuncak.
    C. Menceritakan hal Pak Mat dan Adam memenangi peraduan gasing.
    D. Menaikkan nama Pak Mat dan Adam sebagai pembuat gasing.

28. Petikan di atas mungkin suatu
    A. cerita rekaan   B. cerita benar
    C. laporan akhbar   D. catatan harian

Petikan 4

Pada pagi ini aku, Misah dan Janah, kawanku dari madrasah pergi dari rumah ke rumah memungut derma wang dan pakaian untuk mangsa banjir di kampung Selasih. Selepas dua buah rumah kami tidak terlarat lagi mengangkut pakaian dan barang-barang keperluan yang diberi orang. Misah menebalkan muka meminta murid- murid lelaki yang malas membantu kami. Dengan suka hati mereka pun turut serta. Kami dapat memungut banyak wang, pakaian dan peralatan rumah. Tidak sesia penat lelah kami.

29. Wang dan pakaian derma itu akan disampaikan kepada mangsa banjir.
A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

30. Murid-murid perempuan itu merasa malu untuk meminta bantuan murid lelaki.
A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

31. Murid lelaki dan perempuan yang bekerjasama itu telah dapat memungut lebih banyak pakaian dari apa yang mereka akan dapati jika mereka pergi bersendirian.
A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

32. Jika bukan murid perempuan yang minta bantuan tentu murid lelaki tidak membantu.
A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

33. Semua murid-murid sekolah madrasah berhati mulia.
A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

34. Petikan di atas mungkin suatu
A. cerita benar   B. cerita pendek
C. laporan akhbar   D. catatan harian

35. Tujuan pengarang petikan ini ialah untuk
A. menceritakan bagaimana mereka dapat memungut derma.
B. menunjukkan mereka suka menolong orang susah.
C. menceritakan pengalaman mereka memungut derma.
D. menerangkan kemalasan murid lelaki.

Petikan 5

Manusia yang tinggal di gua-gua batu itu kemudian tahu bagaimana memasang api di hadapan gua mereka pada waktu malam. Mereka boleh nampak cahaya api berkilauan di dalam mata-mata binatang buas yang berkeliaran di situ bila keadaan gelap. Mereka akan dapat tahu bila waktu bahaya akan tiba selagi api-api di luar gua itu masih menyala.

36. Banyak manusia di gua-gua batu itu terselamat oleh api yang dinyalakan di luar gua itu.
A. Mungkin benar   B. Mungkin tidak benar   C. Tidak pasti

37. Banyak binatang buas yang melompat dari api lalu membunuh manusia dalam gua.
    A. Mungkin benar   B. Mungkin tidak benar   C. Tidak pasti

38. Penulis perenggan ini
    A. menerangkan kesusahan orang zaman dahulu.
    B. menceritakan keadaan binatang buas memakan orang.
    C. menerangkan kegunaan api pada orang-orang digua batu.
    D. menerangkan kebodohan orang-orang zaman gua batu.

39. Petikan di atas mungkin suatu
    A. cerita benar   B. cerita rekaan
    C. laporan akhbar   D. catatan harian

Arahan bagi soalan 40 hingga 44
    Bulatkan perkataan di mana penulis tidak menggunakan kata-kata atau unsur-unsur yang berlebihan .

```
Contoh 4
  Kereta jenis PURNAMA ialah kereta yang terhandal di seluruh Asia. Ia
  dikagumi oleh mereka yang tahu menilai mutu terbaik.

A. dikagumi    B. terbaik      C. terhandal    D. menilai

Jawapan yang betul ialah 'D' iaitu tahu.
```

Sekarang jawablah soalan-soalan yang berikut.

40. Televisyen dikagumi sebagai suatu alat hiburan yang dipuja ramai, baik sebagai saluran pendidikan atau hiburan.
    A. hiburan   B. dipuja   C. dikagumi   D. ramai

41. Ramai penaja yang sangat pemurah telah mengeluarkan beribu-ribu dolar untuk menaja rancangan TV yang menarik hati. Ini membuat ramai penonton terpaku dikaca TV apabila rancangan idaman mereka dipancarkan.
    A. idaman   B. sangat   C. terpaku   D. menaja

42. Rancangan suka-ramai Gara-gara Super Mat yang sungguh mengasyikkan para remaja belasan tahun telah menggondol tempat pertama sebagai rancangan TV yang paling disukai ramai.
    A. mengasyikkan   B. tempat pertama
    C. suka-ramai   D. menggondol

43. Para ibu bapa yang kolot sangat benci terhadap rancangan suka-ramai Gara-gara Super Mat kerana anak-anak mereka suka meniru gerak-laku Super Mat yang keterlaluan.
    A. kolot   B. suka-ramai   C. gerak-laku   D. keterlaluan

44. Seniwati Nani yang sungguh jelita telah berjaya menawan jutaan peminat akibat dari pandainya ia melakunkan watak wanita moden.
    A. melakunkan   B. jelita   C. jutaan   D. pandainya

Arahan bagi soalan 45 hingga 48
    Pilih   ayat-ayat yang 'serong' atau 'berat sebelah' atau 'yang cuba mempengaruhi pembaca' dari kumpulan empat ayat yang berikut.

Contoh 5
A. *Seorang pelajar miskin telah mendapat bantuan biasiswa.*
B. *Pelajar tersebut mengucapkan terima kasih kepada Persatuan Kampung Pasir.*
C. *Jikalau tidak kerana bantuan Persatuan Kampung Pasir Rahim tidak akan dapat meneruskan pelajarannya.*
D. *Persatuan Kampung Pasir telah menganugerahkan biasiswa sebanyak 3000 dolar setahun.*

. *Ayat yang serong itu ialah: --------*
        Jawapan yang betul ialah 'C'.

Sekarang buatlah soalan-soalan yang berikut.

A. Satu perbuatan yang sangat digalakkan ialah bacaan buku-buku cereka.
B. Sudah tiba masanya kita mengenepikan buku-buku hikayat yang usang dan ketinggalan zaman.
C. Cerita -cerita lama kerap mengisahkan tentang kehidupan di istana.
D. Cereka berunsur sains dan misteri digemari oleh murid-murid sekolah rendah dan menengah.

45. Ayat yang serong itu ialah: -----

A. Seorang yang bijak tidak akan membuang masa di pusat-pusat membeli belah.
B. Pusat-pusat membeli belah telah menjadi tempat pergaulan bebas muda-mudi.
C. Muda-mudi membeli-belah di toko-toko besar yang menjual pakaian model terbaru.
D. Kedai makanan segera seperti Mac Donald menjadi tumpuan anak-anak muda.

46. Ayat yang serong itu ialah: ------
-

A. Puan Asiah ialah seorang ibu yang sedia berkorban untuk kepentingan kaumnya.
B. Beliau telah banyak berjasa kepada masyarakat yang tidak beruntung.
C. Tidak hairan jika ia menjadi contoh wanita yang paling mulia.
D. Jasa-jasa Allah Yarhamah akan tetap dikenang oleh keluarga dan rakan-rakan.

47. Ayat yang serong itu ialah: ------

/

A. Satu rompakan bersenjata telah dilakukan oleh tiga orang pemuda berambut panjang.

B. Mereka telah mencederakan tuan punya kedai dan membunuh isterinya yang cuba menjerit.

C. Wang lebih dari dua puluh ribu dolar dan semua barang-barang kemas telah dibawa lari.

D. Semua orang diingatkan supaya berhati-hati terhadap pemuda yang berambut panjang.

48 Ayat yang serong itu ialah: --------

Arahan untuk soalan 49 hingga 53

Bagi sesuatu ayat yang diberi, carilah ide atau anggapan yang tersembunyi atau tersirat di sebalik kata-kata tersebut. Anggaplah semua ide dalam ayat-ayat itu benar.

> *Contoh 6*
> *Kerani pejabat pos itu tidak melayan orang-orang yang tidak beratur untuk membeli setem.*
> *C5 Anggapan yang tersembunyi di sebalik kata-kata tadi ialah*
> *A. Orang yang hendak membeli setem di pejabat pos mestilah beratur.*
> *B. Kerani pejabat pos itu seorang yang sombong.*
> *C. Kerani pejabat pos seorang yang tidak pilih kasih.*
> *D. Mereka yang beratur akan dilayan dengan baik.*
>
> *Jawapan yang betul ialah 'A'.*

Sekarang jawablah soalan-soalan yang berikut ,

> Seluar jean jenama Rust lebih baik dari seluar jean jenama Brush kerana harganya lebih mahal.

49. Anggapan yang tersembunyi di sebalik kata-kata tadi ialah ----
    A. Seluar jean Rust dibuat dari bahan yang lebih baik.
    B. Lebih mahal sesuatu seluar jean itu, lebih baik mutunya.
    C. Seluar jean Rust dibuat dari bahan yang kurang baik.
    D. Seluar jean lebih baik kerana harganya lebih mahal.

> Faridah seorang murid yang pandai kerana dia tidak mencabar kata-kata gurunya.

50. Anggapan yang tersembunyi disebalik kata-kata tadi ialah
    A. Faridah menjadi pandai kerana ia mengikut perintah guru.
    B. Semua murid-murid yang pandai tidak akan mencabar kata-kata guru mereka.
    C. Hanya murid-murid yang bodoh mencabar kata-kata guru mereka.
    D. Kebanyakan murid yang pandai tidak mencabar kata-kata guru.

> Satu cara yang baik untuk mengurangkan kejadian kecurian kereta ialah dengan memasang kunci berbunyi.

51. Anggapan yang tersembunyi disebalik kata-kata tadi ialah
    A. Hukuman yang berat untuk pencuri kereta akan mengurangkan kecurian.
    B. Pencuri tidak akan berani mencuri kereta yang dipasang kunci yang berbunyi.
    C. Kunci tersebut akan berbunyi hanya apabila pencuri cuba masuk.
    D. Kunci tersebut adalah alat menghalang kecurian kereta yang berkesan.

> Marilah kita memperbaiki kawasan tempat kediaman kita bersama.Kawasan yang semak-samun kelihatan kotor dan akan menjadi tempat kediaman ular atau binatang-binatang lain .

52. Anggapan yang tersembunyi di sebalik kata-kata tadi ialah
    A. Kawasan tempat kediaman itu semak-samun.
    B. Kawasan yang semak-samun akan menarik ular dan lain-lain binatang.
    C. Orang yang bercakap itu seorang yang rajin.
    D. Kawasan itu tidak dibersihkan oleh tukang kebunnya.

> Encil Marzuki, seorang peguam yang berhemah tinggi tidak mungkin melakukan rompakan tersebut

53. Anggapan yang tersembunyi di sebalik kata-kata tadi ialah
    A. Encik Marzuki tidak pernah melakukan kesalahan jenayah seperti merompak.
    B. Tidak ada bukti yang menunjukkan yang Encik Marzuki yang melakukan rompakan itu.
    C. Peguam ialah orang yang baik dan mungkin melakukan rompakan.
    D. Encik Marzuki bukan seorang berhemah tinggi kalau ia melakukan rompakan.

Arahan untuk soalan 54 hingga 57
Pilihlah ayat yang yang mengemukakan suatu pendapat , fakta atau maklumat dari kumpulan empat ayat yang berikut.

> Contoh 7
>   C7.   Ayat yang menunjukkan pendapat ialah: ------
>   A. Penduduk Singapura berjumlah hampir tiga juta orang.
>   B. Penduduk Singapura rajin bekerja untuk mempertingkat ekonomi.
>   C. Kaum wanita juga digalakkan untuk bekerja.
>   D. Pendapatan negara bertambah dari tahun ke tahun.
>
> Jawapan yang betul ialah 'B'.

54. Ayat yang menunjukkan pendapat ialah: -------
   A. New York ialah bandar terbesar dan tercantk di Amerika Syarikat.
   B. New York terkenal sebagai bandaraya bangunan pencakar langit.
   C. Di waktu malam cahaya lampu yang gilang gemilang menyinari kegelapan malam.
   D. New York juga terkenal kerana jumlah jenayah yang tinggi.

55. Ayat yang menunjukkan pendapat ialah: ------
   A. Ramai sanak-saudara melawat nenek Aman di rumah sakit.
   B. Nenek Aman mengidap penyakit barah usus.
   C. Penyakit nenek Aman kelihatan telah amat tenat.
   D. Para doktor pakar telah pun melakukan pembedahan.

56. Ayat yang menunjukkan fakta atau maklumat ialah: -----
   A. Rumah pangsa ialah rumah yang paling sesuai bagi rakyat Singapura.
   B. Kebanyakan rakyat Singapura tinggal di rumah pangsa.
   C. Keadaan rumah pangsa amat selesa dan bersih.
   D. Ramai di antara penghuni rumah pangsa yang gemarkan keadaan sekitarannya.

57. Ayat yang menunjukkan fakta atau maklumat ialah: -----
   A. Ubat gigi Putih Berseri benar-benar menyerikan hidup anda.
   B. Ia dibuat dari ramuan yang paling segar dan terbaik
   C. Ia di perakukan oleh pakar-pakar pergigian yang ternama.
   D. Ubat gigi itu akan dijual di pasaran mulai bulan hadapan.

Arahan bagi soalan 58 hingga 62
Nyatakan samaada ayat-ayat di bawah ini adalah pendapat, fakta (atau maklumat sebenar), fakta palsu atau kepercayaan lama.

Contoh 8
C7. Barang-barang yang dijual di pasar Geylang amat murah harganya.
   A) pendapat   B) fakta atau maklumat sebenar
   C) fakta palsu atau D) kepercayaan lama
Jawapan yang betul ialah 'A'

Sekarang jawablah soalan-soalan yang berikut.

58. Gadis yang suka menyanyi didapur akan mendapat suami yang tua.
   A) pendapat   B) fakta atau maklumat sebenar
   C) fakta palsu atau D) kepercayaan lama

59. Orang yang tidak mampu tidak patut membeli kereta.
   A) pendapat   B) fakta atau maklumat sebenar
   C) fakta palsu atau D) kepercayaan lama

60. Kuala lumpur ialah ibukota Malaysia, sementara Jakarta ialah ibukota Indonesia.
   pendapat   B) fakta atau maklumat sebenar
   C) fakta palsu atau D) kepercayaan lama

61. Negeri-negeri di Asia Tenggara mempunyai empat musim.
    A) pendapat   B) fakta atau maklumat sebenar
    C) fakta palsu atau   D) kepercayaan lama

62. Jika hujan panas, renyai-renyai alamat ada orang besar yang meninggal.
    A) pendapat   B) fakta atau maklumat sebenar
    C) fakta palsu atau   D) kepercayaan lama

Arahan bagi soalan 63 hingga 81
Bacalah cerita pertama dan kedua, kemudian jawab soalan yang mengikutinya.

Petikan 6
Cerita pertama:
  Anak rusa itu berdiri tegak apabila mendengar bunyi sang singa melalui hutan tersebut. Warna bulu rusa itu sama dengan warna tumbuh-tumbuhan di sekelilingnya. Sang singa tidaklah dapat melihat adanya anak rusa itu.
Cerita kedua
  Dalam masa perang askar-askar mengecat pakaian dan alat-alat perang seakan-akan warna tanah dan kawasan peperangan itu. Warna-warna itu sama dengan warna pokok, tanah dan langit atau awan di sekeliling mereka. Musuh tidak dapat melihat mereka di hutan itu.

---

63. Apakah persamaan yang didapati di antara kedua-dua cerita tadi?
    A. Kedua-dua menerangkan bagaimana warna boleh melindungi kita.
    B. Kedua-dua menceritakan tentang askar-askar yang mewarnakan pakaian mereka.
    C. Kedua-dua menceritakan tentang rusa dan sang singa.
    D. Kedua-dua menceritakan tentang kepentingan warna.

64. Apakah perbezaan di antara kedua-dua cerita tadi?
    A. Yang satu menerangkan tentang pakaian dan yang satu lagi tentang daun-daun.
    B. Yang satu menerangkan tentang warna dan yang satu lagi tentang tumbuh-tumbuhan.
    C. Yang satu menerangkan tentang binatang dan yang satu lagi tentang pokok-pokok
    D. Yang satu tentang binatang dan yang satu lagi tentang manusia.

65. Apakah maksud pengarang cerita pertama?
    A. cuba mempengaruhi pembaca supaya mengenali binatang.
    B. cuba menerangkan keadaan sambil menunjukkan kepandaiannya.
    C. cuba menyampaikan maklumat secara terus terang.
    D. cuba menarik perhatian pembaca.

/

Petikan 7

Cerita pertama

Pada zaman dahulu orang menggunakan kereta lembu untuk bergerak ke mana-mana. Walaupun kereta lembu tidak begitu laju, tetapi penumpangnya dapatlah berehat, tidak payah berjalan kaki. Sambil itu barang-barang yang berat seperti padi, ke apa dan buah-buahan dapat diangkut ke tempat-tempat yang jauh. Orang-orang dahulu sangat suka menaiki kereta lembu.

Cerita kedua

Masa kini keretapi gerak cepat sangat diperlukan untuk bergerak ke pusat-pusat bandar yang sesak. Ribuan manusia naik dengan cepat dan turun bergegas-gegas. Mereka hanya membawa diri, tujuan mereka hanya untuk sampai ke tempat yang dituju seberapa segera yang boleh. Kalau tidak ada keretapi gerak cepat pekerja-pekerja dibandar mungkin terlambat sampai di tempat kerja.

66. Apakah persamaan dalam kedua-dua cerita tadi?

A. Kedua-duanya menceritakan tentang perlunya pengangkutan darat.
B Kedua-duanya menceritakan tentang masa perjalanan menggunakan pengangkutan darat.
C. Kedua-duanya menceritakan tentang penumpang atau orang yang menggunakakan kenderaan.
D. Kedua-duanya menceritakan tentang cara manusia bergerak dari satu tempat ke satu tempat yang lain.

67. Apakah kelainan di antara kedua-dua cerita tadi?

A. Yang satu menerangkan tentang barang-barang yang diangkut dan yang satu menerangkan tentang orang yang tidak membawa beg.
B. Yang satu menerangkan tentang kereta lembu dan yang satu menceritakan tentang keretapi gerak cepat.
C. Yang satu menerangkan tentang orang-orang di kota dan yang satu menerangkan tentang orang-orang bandaraya.
D. Yang satu menerangkan tentang pentingnya masa dan yang satu menerangkan tentang kurang berharganya masa.

68. Apakah tujuan pengarang cerita pertama?
A. Untuk menunjukkan kepentingan kereta lembu pada zaman dahulu.
B. Untuk menunjukkan bagaimana payahnya hidup di zaman dahulu.
C. Untuk menunjukkan cara orang dahulu bergerak dari satu tempat ke satu tempat.
D. Untuk menunjukkan cara orang dahu u mengangkut padi, kelapa dan buah-buahan.

69. Apakah tujuan pengarang cerita kedua?
A. Untuk menunjukkan bagaimana lajunya keretapi gerak cepat.
B. Untuk menunjukkan sikap penumpang zaman sekarang.
C.Untuk menunjukkan keselesaan penumpang naik keretapi gerak cepat.
D. Untuk menunjukkan perlunya keretapi gerak cepat.

70. Dari manakah cerita pertama tadi d'petik?
    A. majallah hiburan
    B. cerita kanak-kanak
    C. rencana sains
    D. rencana masyarakat

71. Dari manakah cerita kedua tadi dipetik?
    A. majallah hiburan
    B. cerita kanak-kanak
    C. rencana sains
    D. rencana masyarakat

Pet'kan 8
Cerita pertama

Pada suatu masa dahulu penyu laut mudah didapati berenang-renang dilaut. Pada masa kini sangat banyak penyu laut yang telah dibunuh untuk mengambil dagingnya, telur-telurnya, kulitnya dan minyaknya sehinggakan hanya sedikit sahaja penyu laut yang masih tinggal. Walaupun terdapat undang-undang untuk melindungi penyu laut, di setengah-tengah tempat banyak yang masih diburu dan banyak pula yang tertangkap di jaringan kapal-kapal nelayan. Sekarang ini, ramai pembela penyu yang berusaha untuk menyelamatkan penyu, dan melindungi telur-telur, sarang-sarang telur dan juga pantai-pantai istirihat penyu. Tanpa bantuan mereka penyu laut akan hapus dari muka bumi ini untuk selama-lamanya.

Cerita Kedua

Pada masa dahulu tinggal seekor penyu besar yang selalu menghabiskan masanya berenang-renang di Lautan Pasifik. Perlahan-lahan ia berenang dan memakan ikan-ikan kecil yang hidup di sekitar air dan tumbuh-tumbuhan laut di situ, kadang-kadang ia memamah udang-udang yang bermain-main disebalik batu karang di sempadan antara laut dan pantai. Penyu itu tinggal di laut, tetapi kadangkala ia berenang dipermukaan air, menyedut udara segar dan nyaman dan merasakan panasnya sinaran matahari.. Dia mengadah ke langit dan melihat matahari pada waktu siang dan bulan pada waktu malam, juga burung-burung yang berterbangan melintasi lautan luas. Kadangkala ia penat dan bosan berenang, betapa ingin ia untuk berehat di suatu pulau di tengah lautan itu.

---

72. Apakah persamaan di antara kedua-dua cerita tadi?

    A Kedua-duanya menerangkan tentang seksanya hidup penyu di laut.
    B. Kedua-duanya menerangkan tentang kesukaan penyu di laut.
    C. Kedua-duanya menerangkan perihal penyu.
    D. Kedua-duanya menerangkan makanan penyu.

73. Apakah perbezaan di antara kedua-dua cerita tadi?

A. Yang satu menerangkan tentang kedudukan penyu yang hampir pupus,
sementara yang satu lagi mengisahkan tentang cerita seekor penyu
di Lautan Pasifik.

B. Yang pertama menerangkan tentang kegunaan penyu sementara yang
kedua mengisahkan tentang kehidupan penyu di Lautan Pasifik.

C. Yang pertama nenerangkan tentang usaha menyelamatkan penyu
sementara yang kedua mengisahkam tentang penderitaan seekor penyu.

D. Yang pertama menerangkan keadaam penyu pada masa ini sementara
yang kedua menerangkan tentang seekor penyu pada zaman dahulu.

74. Apakah maksud penulis cerita pertama?
A. untuk menceritakan kekejaman manusia terhadap penyu.
B. untuk menceritakan tentang keistimewaan penyu pada masa kini.
C. untuk menarik minat pembaca terhadap usaha menyelamatkan penyu.
D. untuk menggesa pembaca supaya tidak membunuh penyu.

75. Apakah maksud penulis cerita kedua?
A. supaya pembaca merasa kasihan terhadap penyu.
B. hanya menghibur pembaca dengan suatu kisah penyu.
C. mengajar pembaca tentang kehidupan penyu di laut.
D. tiada mempunyai maksud tertentu.

76. Dari manakah cerita pertama tadi dipetik?
A. majallah hiburan   B. cerita kanak-kanak
C. rencana sains   D. rencana masyarakat

77. Dari manakah cerita kedua tadi dipetik?
A. majallah hiburan   B. cerita kanak-kanak
C. rencana sains   D. rencana masyarakat

78. Cerita yang manakah yang kamu mungkin rujuk untuk membuat laporan
sains tentang penyu keadaan penyu kini.
A. cerita pertama sahaja   B. cerita kedua sahaja
C. cerita pertama dan kedua   D. tidak gunakan kedua-duanya

<u>Arahan untuk soalan 79 hingga 81</u>
Berdasarkan kepada petikan yang diberi, kamu dkehendakki <u>menilai</u> <u>samada jawapan, sebab atau hujah-hujah yang diberi bagi sesuatu perkara</u> <u>itu kuat atau lemah,</u>

<u>Contoh 9</u>

Beberapa orang pelatih jururawat sebuah rumah sakit sedang membincangkan samada seseorang jururawat dibenarkan mempunyai kuku panjang. <u>Mary</u> berkata, "pada zaman ini seorang wanita yang berkuku pendek dipandang kolot atau tidak mengikuti zaman. <u>Hamidah</u> menyampuk, "rumah sakit tidak mempunyai hak untuk menentukan panjang pendeknya kuku para jururawatnya." <u>Zola</u> yang biasanya tidak begitu suka bercakap tiba-tiba mengemukakan pendapatnya, "memang elok jika jururawat tidak berkuku panjang , kerana ia membahayakan pesakit, bila kita hendak memandikan atau membalut pesakit yang cedera." Dengan cepat pula <u>Kasmah</u> menambah " ya, kuku pendek senang dibersihkan."

C9. Pendapat siapakah yang <u>paling lemah</u>?

A. pendapat Mary   B. pendapat Hamidah
C. pendapat Zola   D. pendapat kasmah

Jawapan yang betul ialah '<u>A</u>' pendapat Mary.

<u>Sekarang jawablah soalan-soalan berikut,</u>

Petikan 9
"Patutkah pelajar-pelajar bekerja semasa cuti sekolah?" tanya ketua murid Sekolah Seri Kallang. "Kita semua bukan pelajar yang datang dari keluarga yang berada, pendapatan yang kita peroleh, sedikit sebanyak boleh membantu biaya persekolahan," <u>Kamil</u> mengeluarkan pendapatnya. "Lagipun, duduk di rumah sahaja semasa cuti
panjang sungguh membosankan, sekurang-kurangnya masa kita terisi dengan pekerjaan
yang berfaedah, <u>Hasnah</u> menyokong. "Tetapi jangan lupa, mereka yang bekerja mungkin akan melupakan buku dan pelajaran mereka, kata <u>Sheila</u> pula. <u>Johnny</u> pula membantah, "kita bukan budak-budak lagi, kita boleh buat apa yang kita suka." Perdebatan kemudian menjadi semakin hangat.

79.   Pandangan siapakah yang paling <u>lemah</u>?
    A. pandangan Kamil   B. pandangan Hasnah
    C. pandangan Sheila   D. pandangan Johnny

Petikan 10

Harun telah gagal untuk menghantar jawapan rencana yang diminta oleh guru sejarahnya. Ia berfikir-fikir apakah sebab yang wajar untuk diberitahu kepada gurunya itu. Mula-mula ia berfikir, "aku boleh katakan yang aku terlupakan soalan rencana itu", kemudian ia berfikir pula, "boleh juga aku katakan yang aku telah membuatnya tetapi kertas itu hilang. Fikiran ketiga pula muncul, "aku katakan bahawa aku telah tolong

hantarkan kawanku ke rumah sakit. Akhirnya ia berfikir, "baiklah aku berterus terang mengatakan yang aku telah tengok wayang ."

80. Hujah atau fikiran yang manakah yang paling kuat?

A. hujah mula-mula   B. hujah kemudian atau kedua
C. hujah ketiga   D. hujah akhir.

Petikan 11

Manis dan abang-abangnya adalah anak seorang yang kaya. Mereka sedang berbahas tentang baik buruknya mereka melancong keluar negeri pada cuti sekolah, dalam keadaan dunia sedang bergolak kerana peperangan di Teluk. "Tak bagus kalau kita pergi melancong, kita boleh diculik kapalterbang boleh kena bom," kata Manis. "Ya, jangan," kata Jais, "lebih baik kita gunakan wang itu untuk membeli barang-barang yang lebih berguna," . "Kita bukan hendak ke negara yang hampir dengan negari-negeri di Teluk, kita hendak ke Hongkong, kalau kita ke sana kita boleh beli macam-macam oleh-oleh," kata Yasin. Kemudian Abang Long pula mengeluarkan pendapat,"jauh berjalan banyak pengalaman, banyak perkara yang dapat kita pelajari dari melancong."

81.   Hujah siapakah yang paling kuat?
       A. hujah Manis   B. hujah Jais
       C. hujah Yasin   D. hujah Abang Long

Petikan 12

Dalam satu perbahasan, pihak pembangkang telah menentang usul supaya pemerintah mengenakan pembayaran denda kepada anak-anak yang tidak mahu menjaga ibu bapa mereka. <u>Pembangkang pertama</u> mengemukakan pandangan bahawa pembayaran denda akan menyebabkan anak-anak merasakan bahawa perkara penjagaan ibu bapa sebagai satu paksaan, bukan sesuatu yang datang dari keinginan diri sendiri. <u>Penyokong pertama</u> telah pun menyampaikan hujah bahawa denda akan berkesan dalam mengurangkan bilangan anak-anak yang tidak menjaga ibu bapa mereka. <u>Penyokong kedua</u> kemudian berkata bahawa ini akan mengurangkan bilangan orang tua yang d'tempatkan di rumah orang-orang tua. <u>Pembangkang kedua</u> pula membidas dengan berkata bahawa penjagaan ibu bapa di rumah orang-orang tua adalah lebih baik dari di rumah sendiri.

82. Hujah siapakah yang paling <u>lemah?</u>
    A. pembangkang pertama   B. pembangkang kedua
    C. penyokong pertama   D. penyokong kedua

========================= terima kasih =========================

APPENDIX 18
Malay Language Critical Reading Test

Direction: Do not open this book until you are told to do so.

Please read the passages and then answer the questions that follow. Circle the right answer in the answer sheet provided. You are allowed to reread the passages as many times as you like. If you do not know the answer to any particular question, you can skip the question and come back to it later.

Direction for questions 1 - 5
Please choose the rational conclusions for the sentences below. You have to assume that the statements written are true .

> Example 1
> All cats like to drink milk. Comel is a cat.
> A. Comel likes milk.
> B. Comel does not like milk.
> C. There are cats that do not like milk.
> D. There are cats that like milk.
>
> The right answer is 'A.'

Please choose the correct answer the following questions, assume that that the statements given are true.

1. All the oranges in that box are sweet. This orange is taken from that box.
   A. The orange from that box must be sour.
   B. The orange from that box must be sweet.
   C. There will be some oranges from that box which will not be sweet.
   D. Some of the oranges from that box are sweet.

2. All girls like to play with dolls. Long likes to play with dolls.
   A. Long probably does not like to play with dolls.
   B. Long is certainly a girl.
   C. Long is certainly not a girl.
   D. Long may be a girl or a boy.

3. All the children who live at house number 7 are members of Pa Abu's family. Bedah lives in that house.
   A. It is certain that Bedah is not a member of Pak Abu's family.
   B. It is certain that Bedah is a member of Pak Abu's family.
   C. Probably Bedah is a member of Pak Abu's family.
   D. Probably Bedah is not a member of Pak Abu's family.

4. If someone is not sick, he or she will not feel weak. That old person is feeling weak.
   A. That old person must be sick.
   B. That old person is certainly not sick.
   C. That old person may be or may not be sick.
   D. Probably that old person is not sick.

5. Many ten-year old children have already studied the Quran. Aminah is ten years old.
   A. Probably Aminah has not studied the Quran.
   B. It is certain that Aminah has not studied the Quran.
   C. Probably Aminah has studied the Quran.
   D. It is certain that Aminah has studied the Quran.

Direction for question 6 to 13.

Please evaluate whether the conclusion or summary given is true, false or cannot be determined.

Example 2
If it is going to rain there will be black clouds. There is no black cloud. Therefore there will not be any rain.
A.   True   B.   False   C.   Cannot be determined

The right answer is 'C'

Now please answer the following questions.

Malik and Azman had ten arithmetic problems to do.They started doing the sums at the same time, but Malik completed his sums fifteen minutes before Azman.

---

6.   Malik is cleverer than Azman.
     A.   True   B.   False   C.   Cannot be determined

7.   Malik used shorter time to finish his sums than Azman .
     A.   True   B.   False   C.   Cannot be determined

8.   Azman got more sums right than Malik.
     A.   True   B.   False   C.   Cannot be determined

One of the pupils in Class 5B of Seri Taming School has become the champion or winner of the Word Puzzle Competition of the East Zone.

---

9. The teacher of class 5B is the best cross-word puzzle teacher in the East Zone.
     A.   True   B.   False   C.   Cannot be determined

10.   The pupils of Seri Taming School are the cleverest pupils in the East Zone.
     A.   True   B.   False   C.   Cannot be determined

Encik Wan and Encik Din went fishing together. Encik Wan obtained six fish while Encik Din got three only. Both of them used different type of bait or worms.

---

13.   Encik Wan is a cleverer fisherman than Encik Din.

     A.   True   B.   False   C.   Cannot be determined

14.   The bait used by Encik Wan is better than the one used by Encik Din.
     A.   True   B.   False   C.   Cannot be determined

The class teacher of Primary 4A kept record of pupils who did not bring books in April. Five pupils did not bring their composition books and ten pupils did not bring their reading books.

11. Pupils do not bring composition books more often in April than in other months.

    A. True   B. False   C. Cannot be determined

If Mak Limah get an injection from the doctor, she will recover from her illness. She later recovered.

---

12. Mak Limah must have obtained an injection from the doctor.

A. True   B. False   C. Cannot be determined

Si Labi will be rich if he digs the mountain. He did not become rich.

---

13. Si Labi must have not dug the mountain.

A. True   B. False   C. Cannot be determined

Direction for question 14 to 39.

Please answer the questions following the short passages. You are required to judge the interpretations given in a critical way.

Passage 1

Ahmad was looking for his lost bicycle in that village. He knew that his friend, Kasim, a poor boy who always plays truant, lives in the village. Children who plays truant are thieves. His looked at the left and right of the street, then, alas, strewn by the side of a dilapidated hut, he saw his bicycle.

---

14. Ahmad and Kassim are close friends.
    A. True   B. False   C. Cannot be determined

15. Kassim lives in the dilapidated hut.
    A. True   B. False   C. Cannot be determined

16. That bicycle has been put in a hurried way.
    A. True   B. False   C. Cannot be determined

17. What is the phrase that is most biased towards Kassim.
    A. his friend   B. poor boy
    C. always plays truant   D. strewn.

Passage 2

Nora wants to score high marks in her spelling test on Friday. Spelling is very difficult. In the past she got rather low marks. Nora's mother said,"Why don't you learn bit by bit everyday, rather than learning all the words all at once on Thurday night?" Every night in that week Nora learnt her spelling. On Friday she scored high marks for the test.

---

18 Children could learn more in the house than in school.
    A. True   B. False   C. Cannot be determined

19 From that day onwards Nora will learn little by little every night, no longer will she lump her lessons until the last night before the test.
    A. True   B. False   C. Cannot be determined

20. Children who learn little by little every day will become clever.
    A. True   B. False   C. Cannot be determined

21. What did the author wish to show?
    A. How conscientious Nora is in her studies.
    B. Learning bit by bit will make one clever.
    C. Listening to your mother will benefit you.
    D. Don't wait till the last moment before studying.

22. Which one is an opinion?
    A. Spelling is very difficult.
    B. Nora wants to get high marks.
    C. Nora learns her spelling bit by bit daily.
    D. On Friday she scored high marks.

Passage 3

Pak Mat and his son Adam had become the champion of the Top Competition which was held as the finale of the Cultural Month Festival. Their tops had been judged as the most beautiful and had sported the most elegant spining. They had built the winning top from the mangrove wood which was obtained from the back of their house. The head of the top was carved into the shape of a dragon, while its body was painted in red and white stripes. Both of them expressed their surprise at winning the competition.

23. The best tops are made of mangroove wood.
A. True   B. False   C. Cannot be determined

24 If Pak Mat and Adam make tops next year, they will use the mangroove wood.
A. True   B. False   C. Cannot be determined

25 The public love to watch the top competition.
A. True   B. False   C. Cannot be determined

26. The top that belongs to Pak Mat and Adam is the most beautiful one.
A. True   B. False   C. Cannot be determined

27. The motive of the author is
A. to relate the method used by Pak Mat and Adam to make tops.
B. to relate about the top competition which is the grand finale.
C. to relate how Pak Mat and Adam won the competition.
D. to publicise Pak Mat and Adam as makers of tops.

28. The above passage is probably a
A. a true story   B   A short story
C. a newspaper report   D.   A diary

Passage 4

This morning I together with Misah and Janah, my friends from the religious school went from house to house to collect donations in the form of money and clothings for the flood victims at Selasih Village. After going to two houses we could not bear the burden of carrying the clothes and other essentials that the people had donated. Misah in a thick-skinned manner, asked the lazy male students to give us a hand. With an open heart, they too followed our rounds. We managed to collect a lot of money, clothings and house utensils. Our pain had not been in vain.

29. The money and the clothings will be given to the victims of the flood.
A. True   B. False   C. Cannot be determined

30. The girls had been shy to ask the help of the boys.
A. True   B. False   C. Cannot be determined

31. Together the girls and the boys who worked in cooperation, had obtained more donations than if they they had ventured separately.
A. True   B. False   C. Cannot be determined

32. If the girls had not asked, the boys would not have helped.
A. True   B. False   C. Cannot be determined

33. All the students of religious schools are kind-hearted.
A. True   B. False   C. Cannot be determined

34. The above passage is probably a
   A. fiction   B. true story
   C. newspaper report   C. diary

35. The motive of the writer is
   A. to relate how he or she had collected the donation.
   B. to show that he or she likes to help people.
   C. to relate his or her experience in collecting donations.
   D. to relate the laziness of the boys.

Passage 5

The cave-dwellers then knew how to start a fire in front of the caves during the night. They could see the light shining inside the eyes of the wild animals who prowled there during nightfall. They could tell when danger is coming as long as the fire is still burning.

---

36. Many of the people in the cave were saved by the fire which was outside of the cave.
   A. True   B. False   C. Cannot be determined

37. Many wild animals jumped over the fire and killed the people in the cave.
   A. True   B. False   C. Cannot be determined

38. The writer of the passage
   A. related the story of the ancient people.
   B. told the story about the wild animals who ate human beings.
   C. related about the use of fire to cave-dwellers of ancient times.
   D. related about the stupidity of ancient people.

39. The above passage is probably a
   A. fiction   B. true story
   C. newspaper report   C. diary

Directions for Question 40 to 44

Circle the words where the writer is not using exaggerated elements.

Example 4

The car by the label name PURNAMA is the most magnifi ient in Asia. It is admired by those who value the best quality.
A. admired   B. best   C. magnificient   D. value
The correct answer is D which is value.

Now please answer the following question by circling the wo ds which is not an exaggeration.

40. Television is much admired as a form of adored public entertainment, as an educational media or for pure entertainment.
   A. entertainment   B. adored
   C. admired   D. public

41. Many of the very generous sponsors had given thousands of dollars to sponsor captivating TV programmes. This glue the audiences to their TV screens when their favourite programmes are on telecast.
   A. favourite   B. very
   C. glued   D. sponsor

42. The well-loved programme "The Antics of Super Mat" which really captivated the teen-age viewers had captured the first prize as the most popular TV programme.
A. captivated
B. first place
C. popular
D. captured1

43. Old-fashioned parents hated the popular programme "The Antics of Super Mat" because their children like to copy the actions of Super Mat.
A. old-fashioned
B. popular
C. actions
D. captured

44. The enchanted actress, Nani had captured millions of fans as a result of her brilliance in potraying the character of a modern women
A. acted
B. enchanted
C. millions
D. cleverness

Directions for Question 45 to 48

From a group of four sentences below, choose the sentence which is biased or one-sided or that tries to influence the readers

Example 5

A   A poor student had managed to obtain a scholarship.
B.   The student expressed his thanks to Kampung Pasir Association.
C.   If Kampung Pasir Association had not come to his assisstance, Rahim would not have been able to continue his studies.
D.   The Kampung Pasir Association had awarded a scholarship worth 3000 dollars a year.

The biassed sentence is   C.
The correct answer is   C

Now please answer the following questions.

A.   One of the behaviour that is encouraged is reading story books.
B.   It is time that we put aside those ancient out-dated stories.
C.   The classic stories always relate about life in the palaces.
D.   Science fiction and mystery novels are the favourites of pupils in the primary and secondary schools.

45   The sentence which is biased is ....

A.   A wise person will not be wasting his time at the shopping centres.
B.   The shopping centres have been the centre of free-mixing among young males and females.
C.   The youths shop at big stores which offer the most modern up-to-date fashionable clothes.
D.   The fast-food restaurants such as Mac Donald had bec me the centre of attraction to these youths..

46. The biased sentence is ....

A. Madam Asiah is a mother who is ever willing to sacrifice for the well-being of her people.
B. She had done a good deed to the deprived of society.
C. It is not suprising that she is the epitome of the most honourable lady.
D. The good deeds of the late lady will always be remembered by friends and relatives.

47. The biased sentence is ....

A. An armed robbery had been commited by three young males who sported long hair.
B. They had injured the owner of the shop and killed his wife who evidently had screamed.
C. Cash of about twenty-thousand dollars and all jewelery had been taken away.
D. Everyone is reminded to beware of young males who sported long hair.

48. The biased sentence is ....

Directions for Question 49 to 53.

For the sentences given in the box below, find the hidden assumptions or hidden ideas behind the sentence. Please regard all the ideas in the sentence as true.

Example 6
The clerk in the post-office will not serve those who did not queue to buy stamps.
. The hidden assumption behing the sentence is

A *People who wish to buy stamps at the post office must queue.*
B. *The post-office clerk is a proud person.*
C. *The post-office clerk is a person who does not favour anybody.*
D. *Those who queue up will be served well.*

The correct answer is A.

Now, please answer the following questions, by choosing the best one that describes the hidden assumption.

The jeans under the label 'Rust' is better than the jeans labelled 'Brush'because it is more expensive.

---

49. The hidden assumption is ....

A. The jeans 'Rust' are made of better materials.
B. The more expensive a pair of jeans are the, the better the quality.
C. The jeans 'Rust' are made of inferior materials.
D. Jeans are better if their price is more expensive.

Faridah is a clever girl as she does not challenge the words of her teachers.

---

50 The **hidden assumption** behind the sentence is ....

    A. Faridah becomes clever when she follows the commands of her teachers.
    B. All pupils who are clever do not challenge their teachers.
    C. Only those who are stupid will challenge their teachers.
    D. Most of the pupils who are clever will not challenge their teachers.

One good way to lessen the cases of car burglary is to install a 'car' alarm.

---

51. The **hidden assumption** behind the above sentence is:

    A. A heavy punishment for car burglars will lessen car burglary
    B. Burglars will not dare to steal cars with the 'ringing key' gadget.
    C. The key will only make a sound when the burglar enters the car.
    D. The 'car alarm' is an effective way to prevent cars being stolen.

"Let us improve the compunds of our house. An unkempt compound will look untidy and will be the living quarters of snakes or other animals." someone said.

---

52. The **hidden assumption** behind the above sentence is:
    A. The compound of the house is unkempt.
    B. An unkempt compound will attract snakes and other animals.
    C. The speaker is a conscientous person.
    D. The compound had not been looked after by the gardener.

Mr. Marzuki, a lawyer of high moral character, would not have commited the burglary.

---

53. The **hidden assumption** behind the sentence is:
    A. Mr. Marzuki had never commited a crime such as burglary.
    B. There is no evidence to show that Mr Marzuki had committed the crime.
    C. A lawyer is a good person and as such will not commit a crime such as burglary.
    D. Mr. Marzuki is not a man of high principle if he committed the burglary.

Directions for Question 54 to 57
    Choose the best sentence that shows an opinion or a factual information from the group of four sentences below.

Example 7
C7. The sentence that shows an opinion is:
    A. The population of Singapore is nearly three million.
    B. Singaporeans are people who worked hard to enhance their economy.
    C. Women is also encouraged to work.
    D. The country's productivity increased year by year.
The correct answer is B

Now, please answer the following questions

---

54. The sentence which shows an opinion is:

A. New York is the biggest and most beutiful city in America.
B. New York is known as the city of sky-scrapers.
C. During the night bright colourful lights lighten up the dark night.
D. New York is also known for its high crime rate.

---

55. The sentence which shows an opinion is:

A. Many of the relatives visited Aman's grandmother in the hospital.
B. Aman's grandmother suffered from cancer of the intestine.
C. The condition of Aman's grandmother seems very critical.
D. The specialist surgeon had already performed the operation.

---

56. The sentence that shows a factual information is:

A. A high-rise flat is the type of housing suitable for Singaporeans.
B. Most Singaporeans live in flats.
C. The condition of the flats is cosy and clean.
D. Many of the residents love the flat environment

---

57. The sentence that shows a factual information is:

A. The toothpaste Sparkling White really brightens your life.
B. It is made of fresh ingredients of very high quality.
C. It is recommended by well-known dental specialists.
D. The tooth-paste will be on the market next month.

Directions for Question 58 to 62

Please state whether the sentence given below is an opinion, a true fact a false fact or a superstition.

Example 8
C8. The things sold in Geylang Market is very cheap.
    A. an opinion   B. a true fact
    C. a false fact   D. a superstition
The correct answer is A.

Now, please answer the following questions in the same way.

58   A maiden who likes to sing in the kitchen will marry an old man.
    A. an opinion   B. a true fact
    C. a false fact   D. a superstition

59. A person who could'nt afford should not own a car.
    A. an opinion
    B. a true fact
    C. a false fact
    D. a superstition

60. Kuala Lumpur is the capital of Malaysia, while Jakarta is the capital of Indonesia.
    A. an opinion
    B. a true fact
    C. a false fact
    D. a superstition

61. The countries of South-east Asia have four seasons.
    A. an opinion
    B. a true fact
    C. a false fact
    D. a superstition

62. The midday light shower signifies that a important man had passed away.
    A. an opinion
    B. a true fact
    C. a false fact
    D. a superstition

Directions for Question 63 to 78.
    Please read the first and second story below, and then answer the questions that follow.

First story
The calf stood upright when it heard the sounds of the passing lion in the forest. The colour of its fur is similar to the colours of plants surrounding it. The lion will not be able to see the doe.

Second story
During the war the soldiers painted their uniforms and their war materials like the colours of the earth and the surrounding forest. The colours are similar to the colours of the trees, the earth and the skies surrounding them. The enemies will not be able to see them in such forest.

---

63. What are the similarities between the two stories?
    A. Both stories tell us about how colours can be used for protection.
    B. Both stories tell us about the soldiers who painted their uniforms.
    C. Both stories tell us about the doe and the lion.
    D. Both stories tell us about the importance of colour.

64. What are the differences between the two stories?
    A. One tells us about clothes while the other tells us about leaves.
    B. One tells us about colours while the other tells us about plants.
    C. One tells us about animals while the other tells us about plants.
    D. One tells us about animals while the other tells us about humans.

65. What is the motive of the first author?
    A. He tried to influence the reader to undertand about animals.
    B. He tried to explain the situation and the same time to show his wisdom.
    C. He tried to offer facts in a clear way.
    D. He tried to get the readers' attention.

First Story
In the olden days people used the bullock-cart to move from one place to another. Even though it is not fast moving, but the passengers were able to relax and do not have to walk a long way. At the same time they could transport heavy goods such as coconuts, and fruits to far-away places. These olden days people love to travel by bullock-carts.

Second Story
Presently, the mass rapid trains is a neccesity in order for one to travel towards the compact city-centre. Thousands of people get into the trains as fast as they could and then alight at their destinations in the same brisk manner. Without this mass-rapid transport, employees in the city will be late for work.

66. What are the similarities between the two stories?
A. Both tell about the importance of land transport.
B. Both tell about the travel time of land transport
C. Both tell about the passengers of land transport.
D. Both tell about how people travel from place to place.

67. What are the differences between the two stories?
A. One tells about the things that are transported, and the other tells about people who doesn't carry any luggage.
B. One tells about the bullock-cart and the other about the mass-rapid trains.
C. One tells about people in the city and the other about people in the towns.
D. One tells about the importance of time and the other about the little value placed on⁻ time.

68. What is the motive of the author of the first story?
A. to show the importance of bullock-carts of the olden days.
B. to show the difficulties faced by people in the olden days.
C. to show how people in the olden days travel from one place to another.
D. to show how people in the olden days transport padi and fruits.

69. What is the motive of the author of the second story?
A. to show about the fast speed of the mass-rapid trains.
B. to show about the attitude of the present-day passengers.
C. to show the comport experienced by the passengers of mass-rapid trains
D. to show the indispensibility of the mass rapid trains.

70. From what source was the first story taken?

A. light entertainment magazine   B.   children's story book
C. science textbook   D.   general article

71. From what source was the second story taken?

A. light entertainment magazine   B.   children's story book
C. science textbook   D.   general article

First story
Once upon a time it was easy to find sea turtles swimming in the sea., but now many of the sea turtles have been killed for their meat, their eggs, their skin and their oil, such that only very few sea turtles are left. Even though there are laws to protect the sea turtles, in some places many had been hunted and caught in the nets of fisherman. At present, many of the turtle-protectors put their effort to save the turtles, to protect their eggs, their breeding grounds and the beaches where they used to relax. Without their effort these sea turtles will be extinct forever.

Second Story
In the old days there was a big turtle who liked to spend his time swimming in the Pacific Ocean. Slowly, he would munch the sea-plants and the small fish that lived in the surrounding water ,sometimes he would chew the prawns that used to play behind the rocks that acted as a boundary between the beaches and the deep sea. That turtle lived in the sea, but sometimes he swam to the surface of the water to breathe in the fresh air and to feel the heat of the sun on his skin. He watched the sky during the day and the moon during the night, he also watched the birds flying across the ocean. Sometimes he felt bored and tired of swimming, how he wished he could relax in island at the centre of the ocean.

72. What are the similarities between the two stories?
   A   Both tell about the difficulties of the turtle in the sea.
   B. Both tell about what turtles like.
   C   Both tell about turtles.
   D. Both tell about the food turtles eat.

73. What are the differences between the two stories?
   A. One tells about the condition of turtles which are nearly extinct.
       and the other tells the story of a turtle in the Pacific Ocean.
   B. One tells about the uses of the turtles while the other tells about the life
       of turtles in the ocean..
   C   The first one tells about the effort to save the turtles, and the other
       tells about the sufferings of a turtle.
   D. The first one tells about the condition of turtles ay present, and the
       second about a turtle who lives long ago.

74. What is the motive of the writer of the first story?
   A. to relate about human cruelty towards turtles.
   B. to tell about the special condition of the turtles at that time.
   C   to get the readers attention on the efforts to save the turtles.
   D. to beg the reader not to kill turtles.

75. What is the motive of the writer of the second story?
   A. to get the readers to sympathise with the turtles.
   B. to entertain the readers with a story about a turtle.
   C   to instruct the readers about the life of the turtle.
   D. did not have any aim in particular.

76. From what source was the first story taken?
   A. light entertainment magazine   B.   children's story book
   C science textbook   D.   general article

77. From what source was the second story taken?
   A. light entertainment magazine   B.   children's story book
   C science textbook   D.   general article

78. Which story would you refer to if you are writing a scientific type of composition about a turtle.
A. the first story only
B. the second story only
C. both stories
D.none of the stories.

Direction for Question 79 to 82.
Based on the passages given, you are required to assess whether the answers, the arguments presented are weak or strong.

Example 9
Several trainee nurses in a hospital were discussing whether nurses should be allowed to have long finger-nails. Mary said,"during this era a woman who has short-finger-nails will be labelled as old fashioned and does not follow changes of the times." Hamidah then interrupted, "the hospital has no right to determine the lengths of nurses' fingernails." Zola who is usually quiet, suddenly offered her opinion, "it is appropiate that nurses should have short finger-nails as long finger-nails will not endanger the patients when we bathe or bandage them." Immediately Kasmah added, "yes, short finger-nails are easy to clean."

C9   Whose argument is the weakest
A.   Mary's argument   B. Hamidah's argument
C.   Zola's argument   ·   D. Kasmah's argument
The correct answer is A, Mary's opinion

Now, please answer the following questions.

"Should students work during the long vacation?" asked the head prefect of Seri Kallang School. "All of us do not come from a rich families, the income that we received, in a way could be used to support our school expenses," Kamil then expressed his opinion. "Furthermore we will be bored if we stay at home too long, we might as well fill in our time with beneficial work.." Hasnah voiced her agreement. "But don't forget that, there is a possibility that those who work might neglect their books and their lessons, said Sheila. Then Johnny disagreed, "we are not children, we are free to do what we like," The discussion then became more heated.

79.   Whose argument is the weakest?
A.   Kamil's's argument   B. Hasnah's argument
C.   Sheila's argument   D.Johnny's argument

Harun had failed to submit the essay requested by his history teacher. He was thinking of a plausible reason to give to the teacher. At first he thought, "I can say that I had forgotten about the essayquestion." Later he had second thoughts, " I can say that I have helped to send my friend to the hospital". Finally he said to himself, "it is better for me to tell the truth that I had been going to the movies.'

80.   Which argument is the strongest?
A. the first argument   B. Hasnah's argument
C. the third argument   D.Johnny's argument

Manis and her brothers come from a well-to-do family. They were debating about the pros and cons of going for a holiday overseas during the school vacation, when the world was still raging with the Gulf War . "It is not good to go for a tour, we could be captured and the plane could be bombed," said Manis. "Yes, don't go, added Jais, "it is better for us to use the money for other purposes, like buying useful things." "We won't be going near to the Gulf area, we could go to Hongkong; once we are there, we could buy a lot of souveniors," Yasin chipped in.. The eldest brother, Long expressed his opinion, "when we travel we get lots of new experiences, we could learn so many things from our travels."

81. Which argument is the strongest?

    A. Manis's argument   B. Jais's argument

    C. Yasin's argument   D. Long's argument

In a debate, the opposition members were opposing the proposal that the government should impose fines on children who failed to support their own parents. The first opposition put forward the idea that the payment of fines would induce the children to feel that the provision for parents is something forced on them, not something which they should realize on their own accord. The first proposer had already expressed his argument that fines will be effective in reducing the number of children who had neglected their own parents. The second proposer then argued that this would also reduce the number of old people who would be placed in homes for the aged. The second opposition then argued that the well-being of the aged are better served in the homes for the aged rather than in their own houses.

82. Whose argument is the weakest?

    A. the first opposition   B. the second opposition

    C. the first proposer   D.   the second proposer.

Thank you

APPENDIX 19

List of Subscales and Items of the MLCRT

Critical Reading Skills Assessed	Item number
1. The ability to evaluate the validity of deductive inferences.	Items 1, 2, 3, 4, 5, 12, 13.
2. The ability to evaluate the soundness of inductive inferences.	Items 6, 7, 10, 11, 14, 15, 16, 24, 26, 29, 30, 31.
3. The ability to evaluate the soundness of generalization	Items 8, 9, 18, 19, 20, 23, 25, 32, 33, 36, 37.
4. The ability to recognize hidden assumptions.	Items 49, 50, 51, 52, 53.
5. The ability to recognize bias.	Items 17, 40, 41, 42, 43, 44, 45, 46, 47, 48.
6. The ability to differentiate between fact and opinion.	Items 22, 54, 55, 56, 57, 58, 59, 60, 61, 62.
7. The ability to recognize author's motive	Items 21, 27, 35, 38, 65, 68, 69, 74, 75.
8. The ability to identify sources and use of material	Items 28, 34, 39, 70, 71, 76, 77, 78.
9. The ability recognize similarities and differences.	Items 63, 64, 66, 67, 72, 73.
10. The ability to evaluate the strength of arguments.	Items 79, 80, 81, 82.

APPENDIX 20
Sample Answer Sheet for MLCRT
KERTAS JAWAPAN BAGI UJIANTARA MEMBACA SECARA KRITIKAL

1. A B C D	22. A B C D	43. A B C D	64. A B C D
2. A B C D	23. A B C D	44 A B C D	65. A B C D
3. A B C D	24. A B C	45. A B C D	66. A B C D
4. A B C D	25. A B C	46. A B C D	67. A B C D
5. A B C D	26. A B C	47. A B C D	68. A B C D
6. A B C	27. A B C D	48. A B C D	69. A B C D
7. A B C	28. A B C D	49. A B C D	70. A B C D
8. A B C	29. A B C D	50. A B C D	71. A B C D
9. A B C	30. A B C D	51. A B C D	72 A B C D
10. A B C	31. A B C D	52. A B C D	73. A B C D
11. A B C	32. A B C	53. A B C D	74. A B C D
12. A B C	33. A B C	54. A B C D	75. A B C D
13. A B C	34. A B C D	55. A B C D	76. A B C D
14. A B C	35. A B C D	56. A B C D	77. A B C D
15. A B C	36. A B C D	57. A B C D	78. A B C D
16. A B C	37. A B C D	58. A B C D	79. A B C D
17. A B C D	38. A B C D	59. A B C D	80. A B C D
18. A B C D	39. A B C D	60. A B C D	81. A B C D
19. A B C D	40. A B C D	61. A B C D	82. A B C D
20. A B C D	41. A B C D	62. A B C D	
21. A B C D	42. A B C D	63. A B C D	

APPENDIX 21
Correct Answer for MLCRT

1. A **B** C D	22. **A** B C D	43. A B **C** D	64. A B C **D**
2. A B C **D**	23. A B **C** D	44 **A** B C D	65. A B **C** D
3. A B **C** D	24. A B **C**	45. A **B** C D	66. A B C **D**
4. **A** B C D	25. A B **C**	46. **A** B C D	67. A **B** C D
5. A B **C** D	26. **A** B C	47. A B **C** D	68. A B **C** D
6. A B **C**	27. A B **C** D	48. A B C **D**	69. A B C **D**
7. A B **C**	28. A B **C** D	49. A **B** C D	70. A B C **D**
8. A B **C**	29. **A** B C D	50. A B C **D**	71 A B C **D**
9. A B **C**	30. **A** B C D	51. A B C **D**	72 A B **C** D
10. A B **C**	31. **A** B C D	52. **A** B C D	73. **A** B C D
11. A B **C**	32. A B **C**	53. A B **C** D	74. A B **C** D
12. **A** B C	33. A B **C**	54. **A** B C D	75. A **B** C D
13. **A** B C	34. A B C **D**	55. A B **C** D	76. A B **C** D
14. A B **C**	35. A B **C** D	56. A **B** C D	77. A **B** C D
15. A B **C**	36. **A** B C D	57. A B C **D**	78. **A** B C D
16. A B **C**	37. A B **C**	58. A B C **D**	79. A B C **D**
17. A B **C** D	38. A B **C** D	59. **A** B C D	80. A B C **D**
18. A B **C** D	39. **A** B C D	60. A **B** C D	81. A B C **D**
19. **A** B C D	40. **A** B C D	61. A B **C** D	82. A **B** C D
20. A **B** C D	41. A B C **D**	62. A B C **D**	
21. A B C **D**	42. A **B** C D	63. **A** B C D	

APPENDIX 23
INVENTORI BERFIKIR DAN MEMBACA SECARA KRITIKAL

Sila bulatkan huruf-huruf yang kamu fikir paling sesuai bagi menyatakan keadaan kamu seberapa tepat yang boleh. Tidak ada jawapan yang betul atau salah. Jawablah dengan ikhlas.

Apabila membaca atau mendengar sesuatu:

1. Saya fikirkan tentang isi utama yang hendak dikemukakan oleh seseorang penulis atau pencakap.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

2. Saya hubungkan apa yang saya baca atau dengar dengan pengalaman sendiri.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

3. Saya mempersoalkan mengapa seseorang penulis atau orang yang bercakap itu berkata begitu.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

4. Saya memikirkan samada apa yang dikatakan oleh seseorang penulis atau orang yang bercakap itu benar.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

5. Saya mempersoalkan maksud seseorang penulis atau seseorang yang bercakap.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

6. Saya memikirkan sebab-sebab seseorang penulis atau orang-orang mengatakan sesuatu.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

7. Saya membandingkan pandangan penulis atau orang yang bercakap dengan pandangan orang lain.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

8 Saya bandangkan kenyataan yang saya dengar atau baca dengan maklumat yang lain.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

9 Saya bandingkan perkara yang saya dengar atau baca dengan pengalaman saya sendiri.
   a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

10. Saya tahu apakah fakta sebenar dan apakah pendapat penulis atau orang yang bercakap.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

11. Saya menimbangkan kebenaran/ketepatan sesuatu kenyataan yang saya dengar atau baca.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

12. Saya fikirkan samada sesuatu kenyataan itu datang dari sumber yan bolen dipercayai.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

13. Saya cuba mengetahui samada sesuatu kenyataan itu bercanggahan antara satu sama lain.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

14. Saya cuba mengetahui samada apa yang dikatakan oleh penulis atau orang yang bercakap itu boleh dipercayai.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

15. Saya semak samada maklumat yang diberi oleh penulis atau orang yang bercakap itu mencukupi.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

16. Saya dapat mengenali kenyataan-kenyataan yang tidak jelas atau yang samar-samar.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

17. Saya dapat mengenali kesimpulan yang salah atau yang mendadak dalam sesuatu kenyataan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

18. Saya dapat mengenali sesuatu jalan fikiran yang tidak logik yang terkandung dalam kenyataan-kenyataan yang saya dengar atau baca.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

19. Saya tahu anggapan atau fikiran yang tersembunyi disebalik sesuatu kenyataan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

20. Saya dapat mengecam kenyataan yang menyeleweng.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

21. Saya cuba membezakan kenyataan yang objectif dan yang subjektif.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

22. Saya beri tumpuan pada makna atau maksud yang hendak disampaika
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

23. Saya tahu bila sesuatu pengiklanan dilakukan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

24. Saya cuba mengetahui kepada siapa sesuatu iklan itu ditujukan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

25. Saya cuba menilain apa yang dinyatakan oleh sesuatu iklan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

26. Apabila membaca atau mendengar cerita saya boleh bezakan samada cerita itu benar atau direka-reka.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

27. Saya memikirkan mengapa sesuatu watak itu berkelakuan seperti yang dinyatakan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

28. Saya bezakan penutup sesuatu cerita dengan penutup atau kesimpula
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

29. Saya fikirkan samada sesuatu cerita itu menarik atau tidak.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

30. Saya fikirkan tentang jalan cerita atau turutan peristiwa-peristiwa
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

31. Saya dapat mengecam apabila sesorang penulis atau seseorang cuba untuk mempengaruhi orang lain.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

32. Saya dapat mengecam bila seseorang penulis atau pencakap sedang menambah-menambah sesuatu.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

33. Saya dapat mengecam bila seseorang penulis atau pencakap sedang menganggap serong tentang seseorang atau sesuatu.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

34. Saya tahu apakah fakta yang boleh dipakai (relevan) dan yang tak boleh dipakai (tidak relevan).
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

35. Saya dapat membazakan antara isi utama dan butir-butir terperinci dari apa yang ditulis atay yang dinyatakan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

36. Saya tahu apakah hujah-hujah atau kenyataan-kenyataan yang kuat dan yang lemah.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

37. Saya dapat menentukan yang mana sebab dan yang manakah akibat dalam sesuatu penulisan atau perbualan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

38. Saya tahu tentang jenis-jenis penulisan.
    a. setiap masa   b. selalu   c. kadang-kadang   d. tidak pernah

terima kasih

APPENDIX 24
CRITICAL THINKING DISPOSITION INVENTORY

Please encircle the appropiate letters in answer to the statements, according to what you actually do. There is no rght or wrong answers.

When and while reading and or listening:

1. I think of the main points that the author or speaker wish to convey.
   a. all the time   b. often   c. seldom   d. never

2. I relate or compare what I read or hear with my own past experiences.
   a. all the time   b. often   c. seldom   d. never

3. I question why the author or speaker said certain things.
   a. all the time   b. often   c. seldom   d. never

4. I question whether what the author or speaker said is true.
   a. all the time   b. often   c. seldom   d. never

5. I question the author's or speaker's motive or intention for writing.
   a. all the time   b. often   c. seldom   d. never

6. I think of the reason why the author or speaker said certain things.
   a. all the time   b. often   c. seldom   d. never

7. I compare the author's or speaker's view with other people's point of view.
   a. all the time   b. often   c. seldom   d. never

8. I compare statements which I hear or read with other information.
   a. all the time   b. often   c. seldom   d. never

9. I compare the th ngs I hear or read with my own experiences.
   a. all the time   b. often   c. seldom   d. never

10. I know what is a true fact and what is an op nion expressed by the author or speaker.
    a. all the time   b. often   c. seldom   d. never

11. I assess the accuracy of the statements I hear or read.
    a. all the time   b. often   c. seldom   d. never

12. I look whether the statement comes from believable authority.
    a. all the time   b. often   c. seldom   d. never

13. I try to see whether the statements contradict one another.
   a. all the time   b. often   c. seldom   d. never

14. I try to find out if what the author or speaker says is reliable.
   a. all the time   b. often   c. seldom   d. never

15. I check whether the information given by the author or speaker is adequate.
   a. all the time   b. often   c. seldom   d. never

16. I can detect ambiguous or unclear statements.
   a. all the time   b. often   c. seldom   d. never

17. I can see or detect wrong or hasty conclusions in statements.
   a. all the time   b. often   c. seldom   d. never

18. I can detect an illogical reasoning whenever I hear or read.
   a. all the time   b. often   c. seldom   d. never

19. I know the assumptions or hidden idea behind statements made.
   a. all the time   b. often   c. seldom   d. never

20. I can detect misleading statements or composition.
   a. all the time   b. often   c. seldom   d. never

21. I try to distinguish objective and subjective statements.
   a. all the time   b. often   c. seldom   d. never

22. I focus on the meaning the author or speaker wish to say.
   a. all the time   b. often   c. seldom   d. never

23. I know when a piece of writing is an advertisement
   a. all the time   b. often   c. seldom   d. never

24. I try to find out for whom the advertisement is written for.
   a. all the time   b. often   c. seldom   d. never

25. I try to assess what the advertisement says.
   a. all the time   b. often   c. seldom   d. never

26. When reading or listening to stories, I can differentiate whether it is true or make-believe.
   a. all the time   b. often   c. seldom   d. never

27. I question why the characters in the stories behave in a certain way.
    a. all the time   b. often   c. seldom   d. never

28. I compare the conclusions of the story to my own conclusion.
    a. all the time   b. often   c. seldom   d. never

29. I think whether a story is interesting or not.
    a. all the time   b. often   c. seldom   d. never

30. I think of the main story-line or the main sequence of a story.
    a. all the time   b. often   c. seldom   d. never

31. I can detect when the author or speaker is using words to influence people.
    a. all the time   b. often   c. seldom   d. never

32. I can detect when the author or speaker is exaggerating something or somebody.
    a. all the time   b. often   c. seldom   d. never

33. I can detect when the author or speaker is biased against something or somebody.
    a. all the time   b. often   c. seldom   d. never

34. I know what are the relevant facts and what are irrelevant.
    a. all the time   b. often   c. seldom   d. never

35. I can distinguish the main points and the details of what is written or said.
    a. all the time   b. often   c. seldom   d. never

36. I know what are strong and what are weak arguments.
    a. all the time   b. often   c. seldom   d. never

37. I can determine which is the cause and wh ch is the effect in anything spoken or writen.
    a. all the time   b. often   c. seldom   d. never

38. I know the different types of written materials.
    a. all the time   b. often   c. seldom   d. never

Thank y u

Appendix 25

List of Participating Schools

1. Ang-Mo Kio Secondary School

2. Bedok South Secondary School

3. Bukit Merah Secondary School

4. Clementi Secondary School

5. Dunearn Secondary School

6. Fuchun Secondary School

7. Meichin Secondary School

8. Ping Yi Secondary School

9. Raffles Girls Secondary School

10. Telok Kurau Secondary School

11. Thomson Secondary School

12. Woodsville Secondary School

PAGE MISSING IN ORIGINAL

Items	% Response 'A'	% Response 'B'	% Response 'C'	% Response 'D'
Item 1	2.1	95.2	1.5	1.0
Item 2	0.2	75.6	3.5	20.7
Item 3	0.8	86.0	11.2	2.1
Item 4	81.5	3.7	12.8	2.0
Item 5	9.7	1.2	57.0	32.1
Item 6	33.0	6.0	60.4	
Item 7	8.1	11.3	80.0	
Item 8	9.2	38.2	52.2	
Item 9	10.2	31.1	58.2	
Item 10	41.1	12.6	46.1	
Item 11	67.4	4.4	28.0	
Item 12	19.06	13.7	66.0	
Item 13	29.9	24.8	44.9	
Item 14	13.4	49.1	37.1	
Item 15	34.4	26.4	39.0	
Item 16	43.2	14.0	42.6	
Item 17	1.9	21.9	73.6	2.6
Item 18	30.9	27.3	39.3	2.6
Item 19	37.8	31.2	30.6	
Item 20	10.5	64.4	24.8	
Item 21	2.5	25.5	9.6	62.4
Item 22	25.4	29.3	36.5	8.8
Item 23	43.0	21.9	34.7	
Item 24	44.6	14.6	40.4	
Item 25	33.6	15.6	49.9	
Item 26	7.6	25.2	66.4	
Item 27	18.5	15.4	59.9	6.2
Item 28	20.9	22.9	46.9	5.9
Item 29	88.8	5.9	5.2	
Item 30	53.3	28.1	18.3	
Item 31	61.8	17.5	20.5	
Item 32	49.8	22.5	27.4	
Item 33	28.7	20.8	49.4	
Item 34	24.6	43.0	11.5	20.9
Item 35	18.8	45.6	32.4	3.1

	% Response 'A'	% Response 'B'	% Response 'C'	% Response 'D'
Item 36	57.9	16.6	25.2	-
Item 37	10.8	47.5	41.4	-
Item 38	10.3	5.0	81.2	3.2
Item 39	66.4	17.1	8.7	7.8
Item 40	40.3	22.8	23.3	13.6
Item 41	18.2	17.3	26.1	38.3
Item 42	23.9	17.2	27.9	31.0
Item 43	30.7	14.0	31.0	24.2
Item 44	37.3	24.5	16.9	21.3
Item 45	10.9	66.8	11.7	10.7
Item 46	34.4	28.5	24.2	13.0
Item 47	20.2	39.2	25.7	15.0
Item 48	9.6	14.2	11.3	64.8
Item 49	37.2	47.0	6.6	9.1
Item 50	48.5	17.3	13.0	21.2
Item 51	6.1	34.4	21.4	39.1
Item 52	18.2	61.8	12.1	7.9
Item 53	13.0	26.6	39.3	21.0
Item 54	31.8	38.4	15.4	14.4
Item 55	20.0	28.1	42.5	9.2
Item 56	19.7	53.0	16.3	11.1
Item 57	13.4	31.2	24.9	30.4
Item 58	5.1	10.0	8.1	76.8
Item 59	51.7	30.9	12.7	4.7
Item 60	8.4	81.1	7.3	3.2
Item 61	11.7	25.3	59.7	3.3
Item 62	8.4	7.3	13.5	70.9
Item 63	68.9	7.0	8.3	15.8
Item 64	8.4	7.7	10.6	73.3
Item 65	12.0	37.5	35.1	15.0
Item 66	37.3	15.9	11/3	35.5
Item 67	8.9	66.5	13.3	11.2
Item 68	34.9	14.0	44.1	7.0
Item 69	13.6	21.6	20.9	43.8
Item 70	7.7	14.8	14.4	63.0
Item 71	10.8	8.7	19.4	61.1
Item 72	13.5	9.8	69.7	7.0
Item 73	59.7	13.8	16.4	10.1
Item 74	38.8	13.5	32.9	14.8
Item 75	14.1	41.4	30.5	14.1

Items	% Response 'A'	% Response 'B'	% Response 'C'	% Response 'D'
Item 76	9.2	10.7	47.3	32.8
Item 77	12.3	50.9	22.4	14.3
Item 78	49.2	12.3	28.1	10.4
Item 79	16.2	15.8	17.3	50.8
Item 80	9.7	19.2	17.7	53.4
Item 81	13.4	20.4	12.8	53.5
Item 82	20.8	35.5	18.9	24.9

APPENDIX 27
Percentile Rank Equivalent of MLCRT Scores

MLCRT Raw Score	Percentile Rank	MLCRT Raw Score	Percentile Rank
63 & above	99.0	40	47.2
61	98.3	39	43.6
60	98.0	38	39.8
59	97.3	37	35.9
58	96.6	36	32.2
57	95.5	35	29.8
56	94.6	34	27.0
55	93.0	33	24.2
54	91.0	32	21.4
53	89.1	31	19.2
52	86.7	30	16.8
51	84.6	29	14.6
50	82.2	28	11.9
49	79.1	27	10.2
48	76.0	26	9.0
47	72.8	25	7.5
46	68.7	24	5.7
45	65.2	23	4.3
44	61.9	22	3.4
43	58.7	21	3.0
42	55.3	20	2.4
41	51.2	19	1.7
40	47.2	18	1.3
		17 & below	1.0

APPENDIX 28
Distribution of MLCRT Z-scores and T-scores

Raw Score (MLCRT)	Zscore	Tscore	Raw Score (MLCRT)	ZScore	TScore
82	4.01	90	40	-.08	49
81	3.92	89	39	-.18	48
80	3.82	88	38	-.28	47
79	3.72	87	37	-.38	46
78	3.62	86	36	-.47	45
77	3.53	85	35	-.57	44
76	3.43	84	34	-.67	43
75	3.33	83	33	-.77	42
74	2.23	82	32	-.86	41
73	3.14	81	31	-.96	40
72	3.04	80	30	-1.06	39
71	2.94	79	29	-1.25	37
70	2.84	79	28	-1.25	37
69	2.75	78	27	-1.35	36
68	2.65	77	26	-1.45	35
67	2.55	76	25	-1.55	34
66	2.45	75	24	-1.64	34
65	2.36	74	23	-1.74	33
64	2.27	73	22	-1.84	32
63	2.27	72	21	-1.94	31
62	2.16	71	20	-2.13	29
61	1.96	70	19	-2.13	29
60	1.87	69	18	-2.23	28
59	1.80	68	17	-2.33	27
58	1.67	67	16	-2.43	26
57	1.57	66	15	-2.52	25
56	1.48	65	14	-2.62	24
55	1.38	64	13	-2.72	23
54	1.28	63	12	-2.82	22
53	1.18	62	11	-2.91	21
52	1.09	61	10	-3.01	20
51	0.99	60	9	-3.11	19
50	0.89	59	8	-3.21	18
49	0.79	58	7	-3.30	17
48	0.70	57	6	-3.40	16
47	0.60	56	5	-3.50	15
46	0.50	55	4	-3.60	14
45	0.40	54	3	-3.69	13
44	0.31	53	2	-3.79	12
43	0.21	52	1	-3.89	11
42	0.11	51			
41	0.01	50			

APPENDIX 29

Facility Indices of MLCRT Items

Items	Facility Indices	Item	Facility Indices
1	.95	42	.17
2	.20	43	.30
3	.86	44	.37
4	.81	45	.64
5	.57	46	.34
6	.59	47	.25
7	.46	48	.63
8	.51	49	46
9	.58	50	.21
10	.46	51	.37
11	.65	52	.18
12	.66	53	.38
13	.47	54	.31
14	.37	55	.41
15	.39	56	.52
16	.43	57	.29
17	.73	58	.75
18	.39	59	.50
19	.31	60	.80
20	.64	61	.58
21	.61	62	.69
22	.25	63	.67
23	.34	64	.71
24	.40	65	.34
25	.49	66	.33
26	.80	67	.64
27	.59	68	.42
28	.46	69	.42
29	.89	70	.60
30	.50	71	.59
31	.50	72	.65
32	.27	73	.57
33	.49	74	.31
34	.21	75	.40
35	.32	76	.45
36	.57	77	.49
37	.41	78	.47
38	.81	79	.49
39	.64	80	.51
40	.40	81	.51
41	.37	82	.33

APPENDIX 30

MLCRT Item Characteristic Curves

ICC of Item 1, 2, 3 and 4

Percentage Correct

Groups of MLCRT Scorers

ICC of Item 5, 6, 7 and 8

Percentage Correct

Groups of MLCRT Scorers

ICC of Item 9, 10, 11 and 12

Percentage Correct

Groups of MLCRT Scorers

445
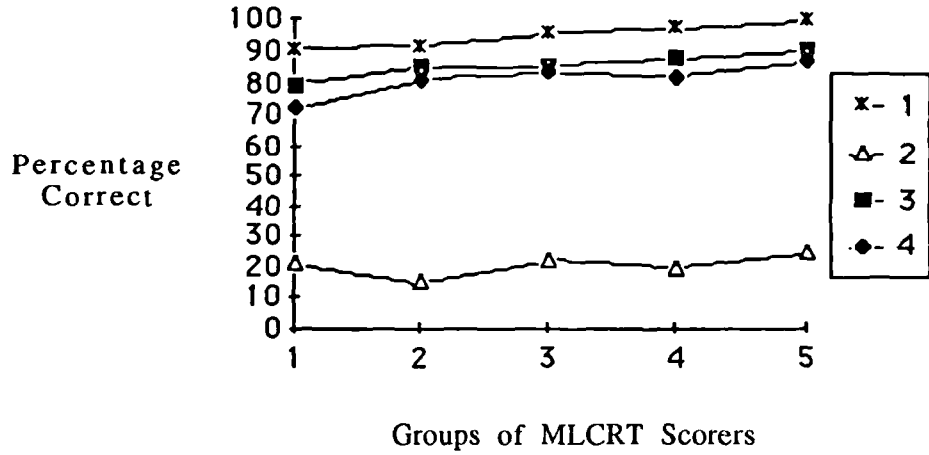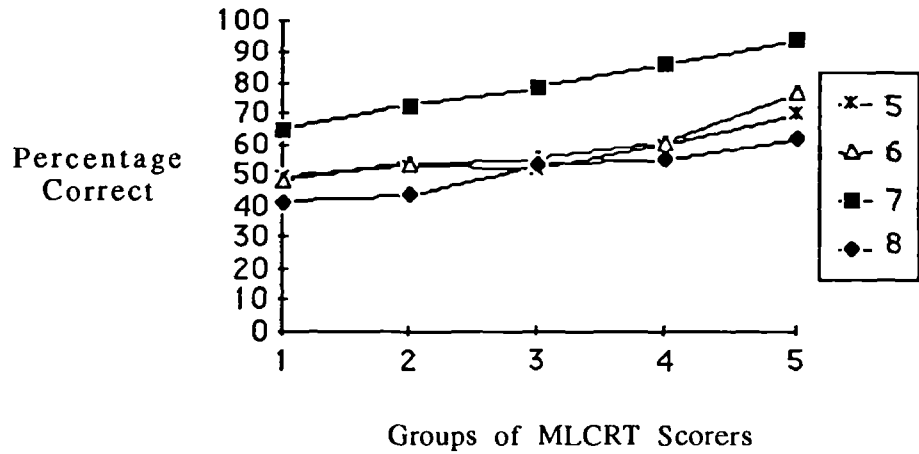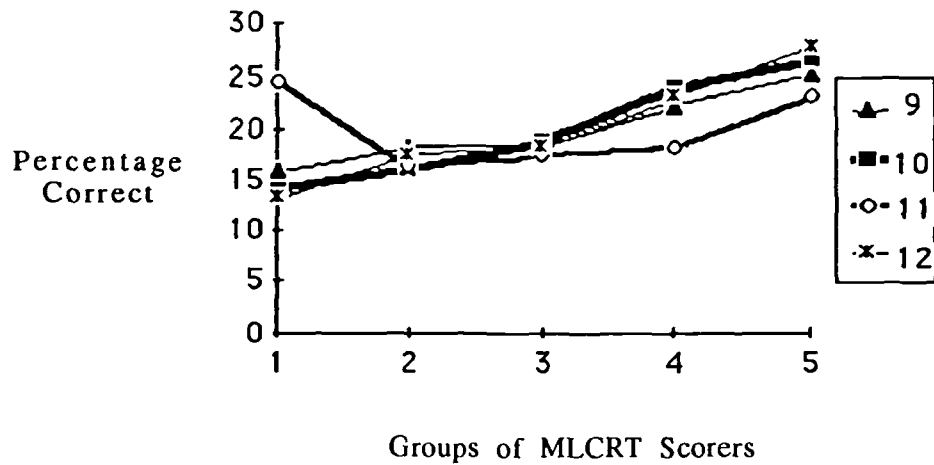
ICC of Item 13, 14, 15, 16
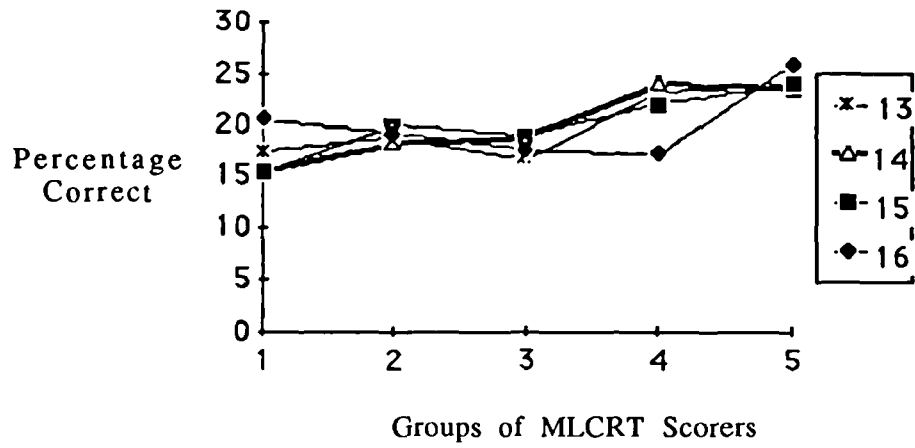
ICC of Item 17, 18, 19 and 20
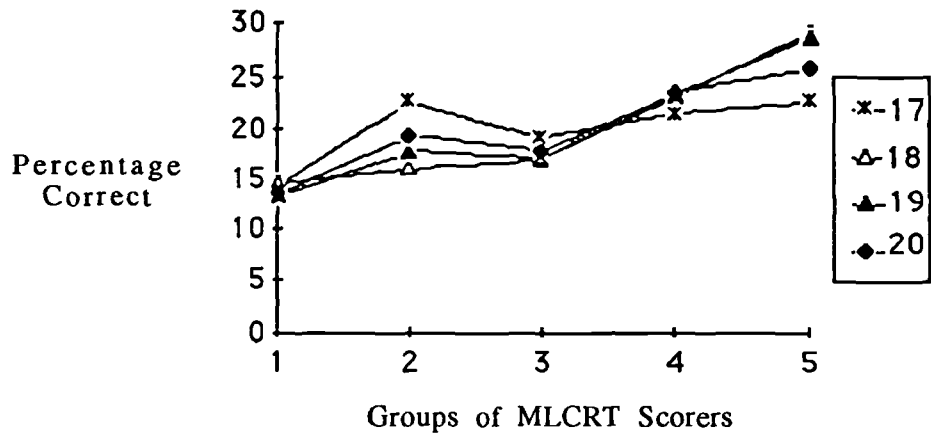
ICC of Item 21, 22, 23 and 24

ICC of Item 25, 26, 27 and 28

Percentage Correct

Groups of MLCRT Scorers
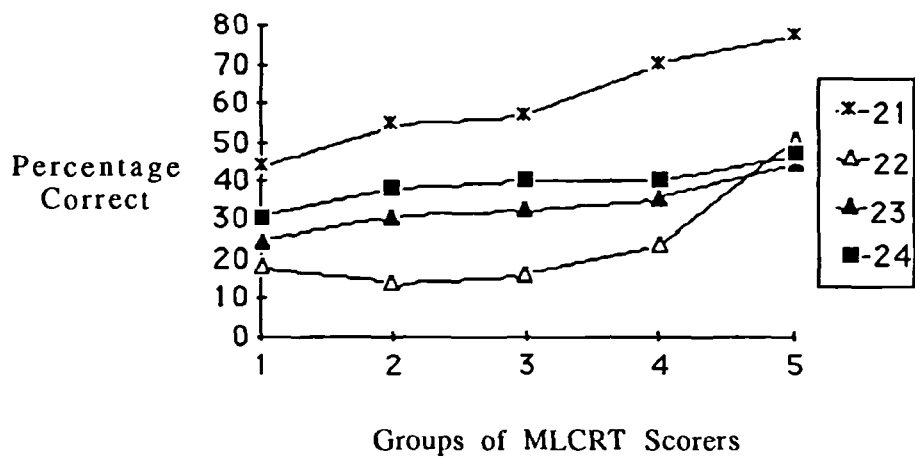
- x-25
- △-26
- ▲-27
- ■-28

ICC of Item 29, 30, 31 and 32

Percentage Correct
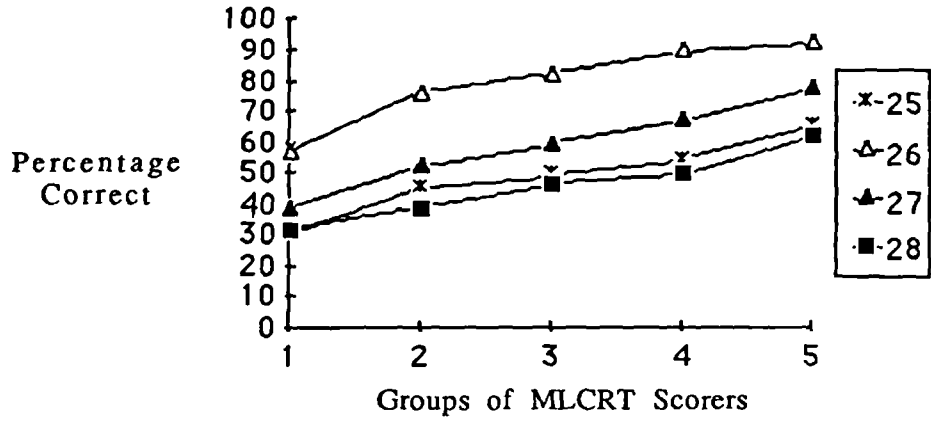
Groups of MLCRT Scorers

- x-29
- △-30
- ▲-31
- ■-32

ICC of Item 33, 34, 35 and 36

Percentage Correct
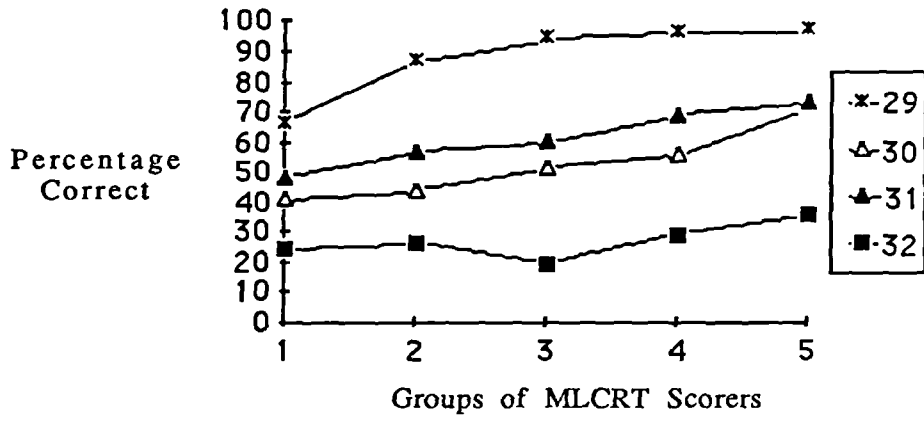
Groups of MLCRT Scorers

- x-33
- △-34
- ▲-35
- ■-36
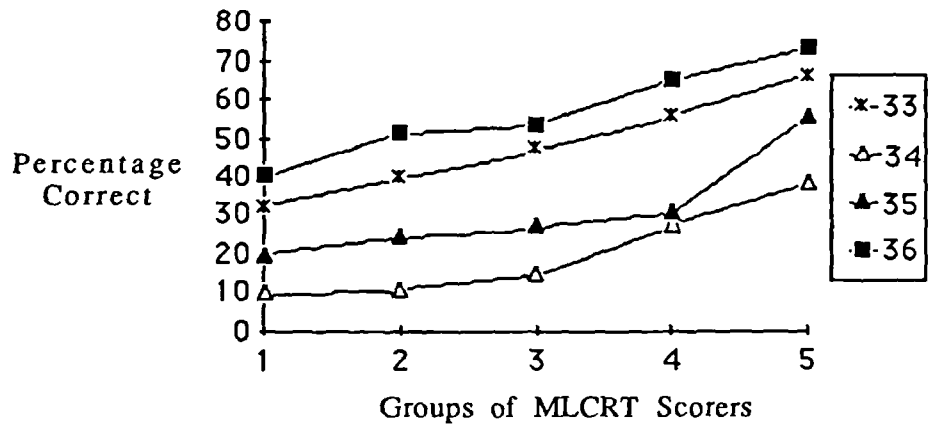
ICC of Item 37, 38, 39 and 40
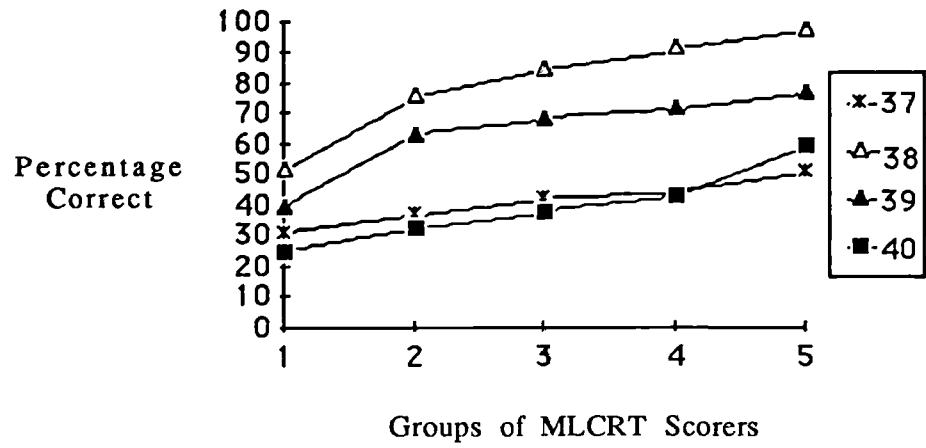
ICC of Item 41, 42, 43 and 44
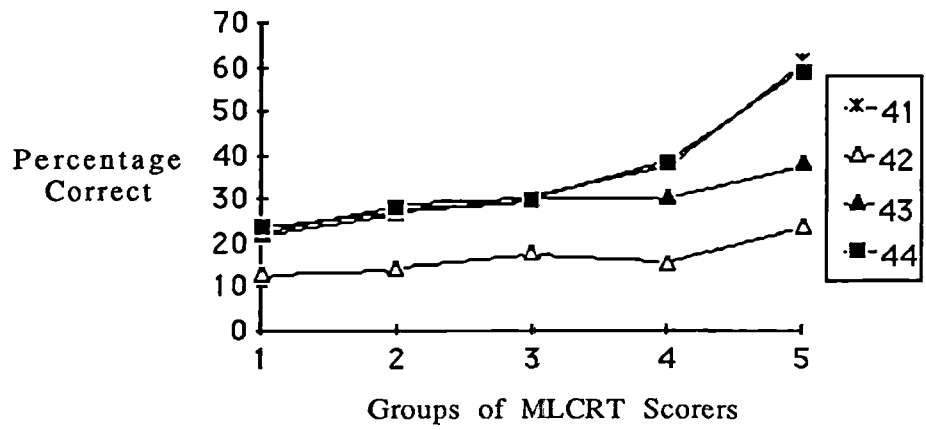
ICC of Item 45, 46, 47 and 48

ICC of Item 49, 50, 51 and 52

Percentage
Correct

Groups of MLCRT Scorers

ICC of Item 53, 54, 55 and 56

Percentage
Correct

Groups of MLCRT Scorers

ICC of Item 57, 58, 59 and 60

Percentage
Correct
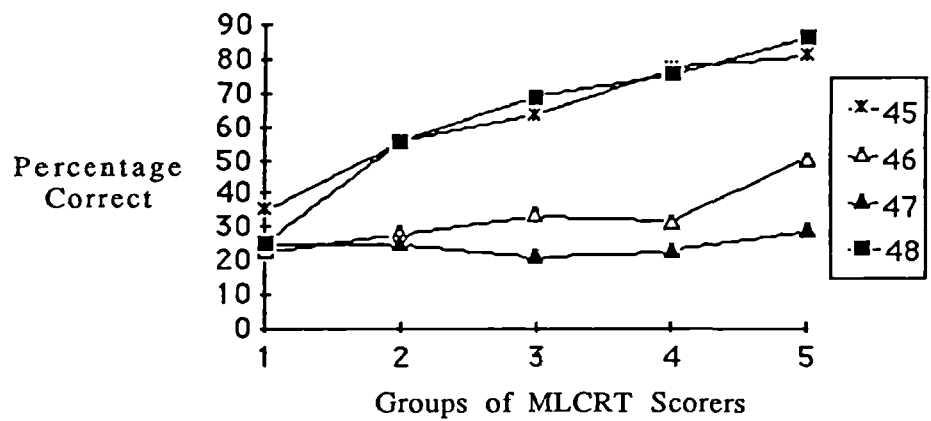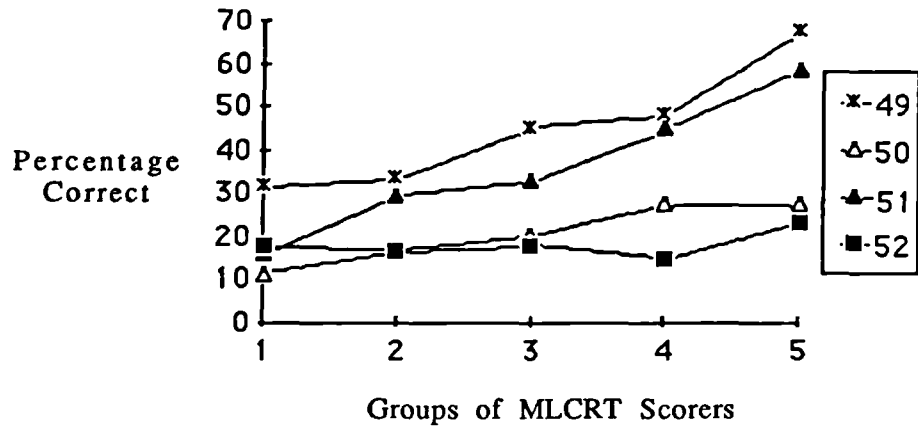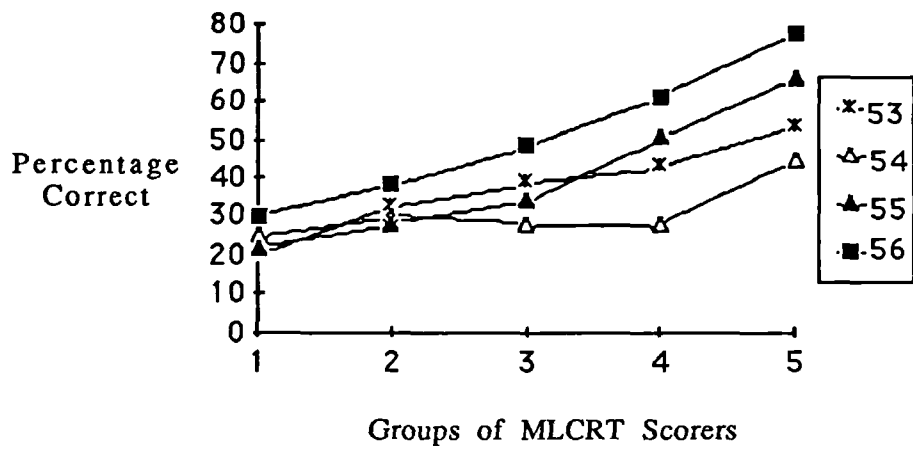
Groups of MLCRT Scorers
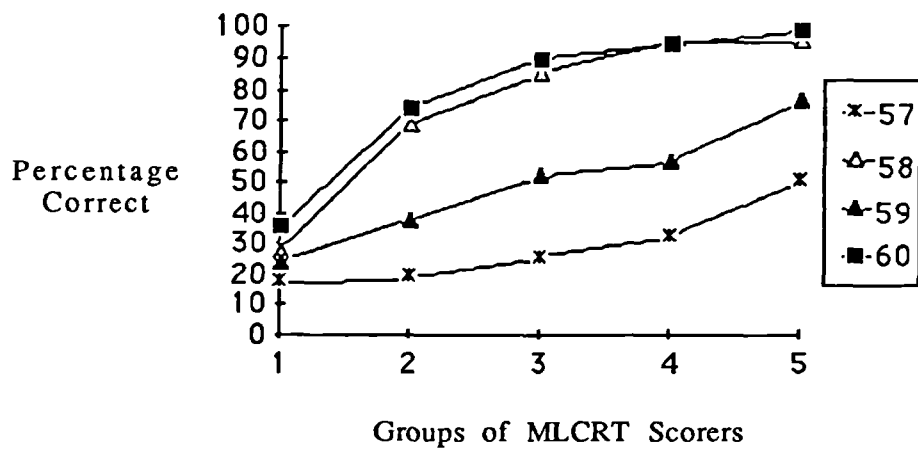
ICC of Item 61, 62, 63 and 64

Percentage
Correct
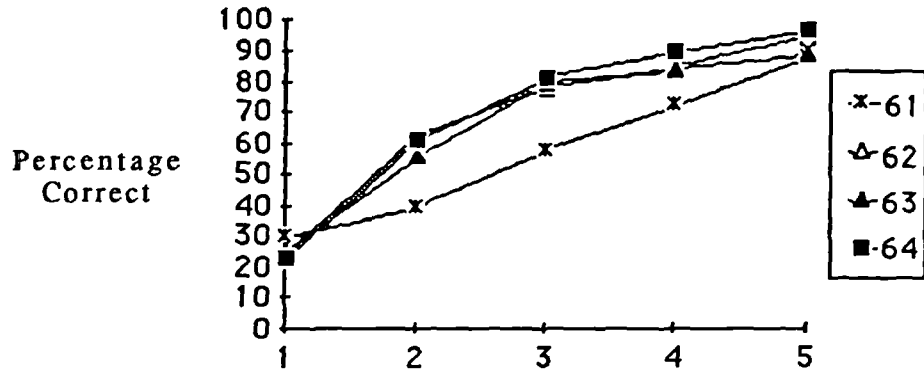
Groups of MLCRT Scorers

ICC of Item 65, 66, 67 and 68

Percentage
Correct

Groups of MLCRT Scorers

ICC of Item 69, 70, 71 and 72

Percentage
Correct

Groups of MLCRT Scorers

ICC of Item 73, 74, 75 and 76

Percentage Correct vs Groups of MLCRT Scorers
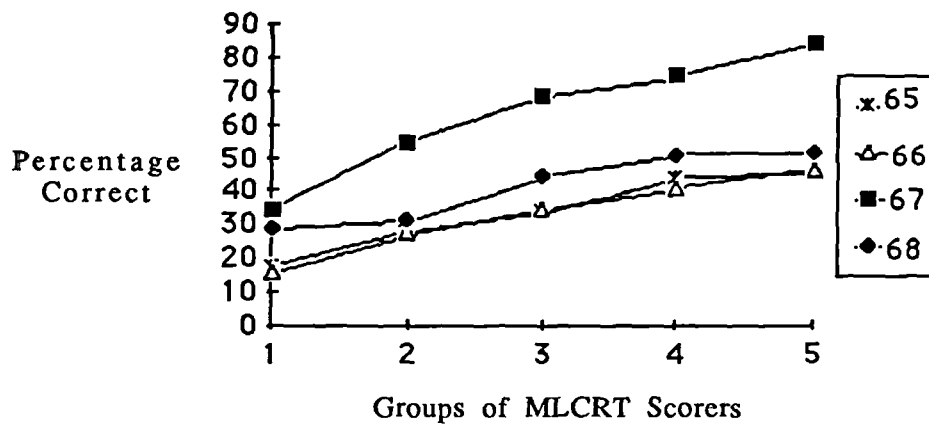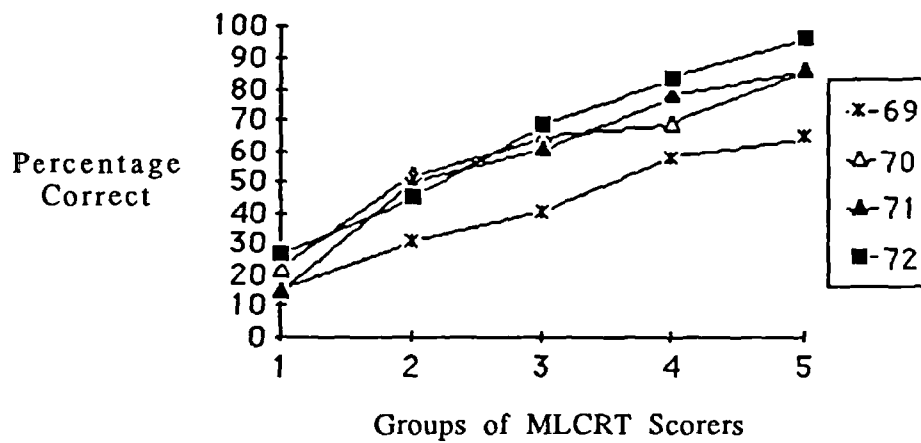
Legend: x-73, △-74, ▲-75, ■-76

ICC of Item 77, 78, 79 and 80

Percentage Correct vs Groups of MLCRT Scorers

Legend: x-77, △-78, ▲-79, ■-80

ICC of Item 81 and 82

Percentage Correct vs Groups of MLCRT Scorers
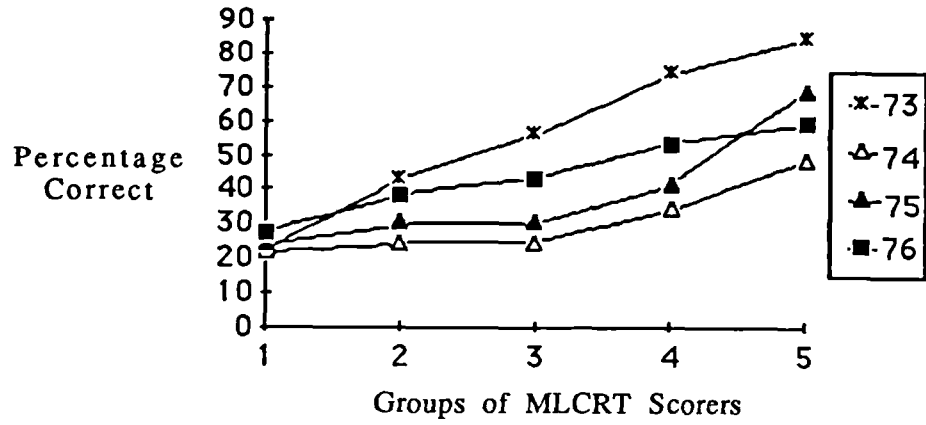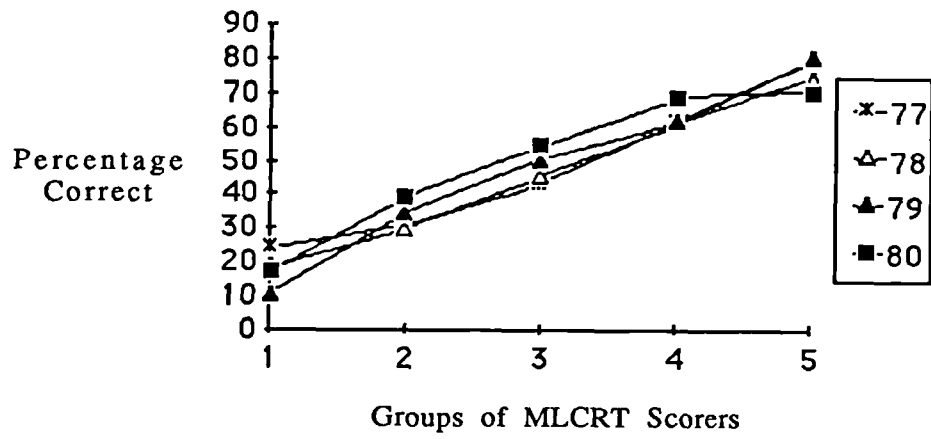
Legend: ■81, ▲-82
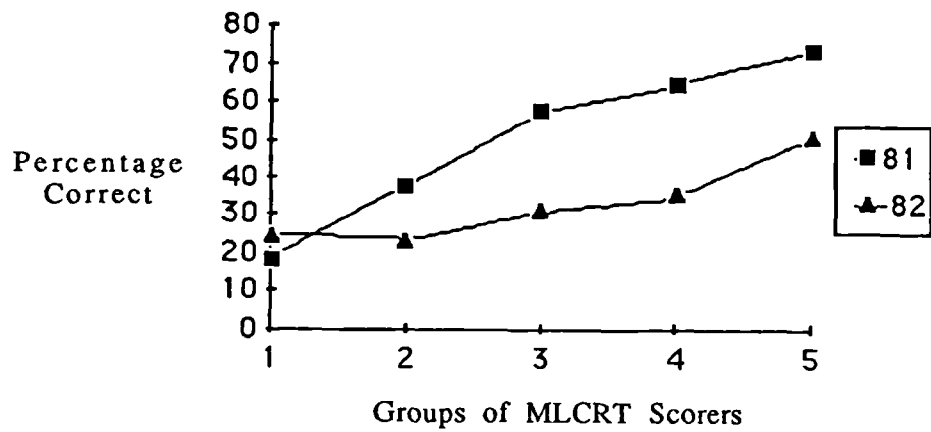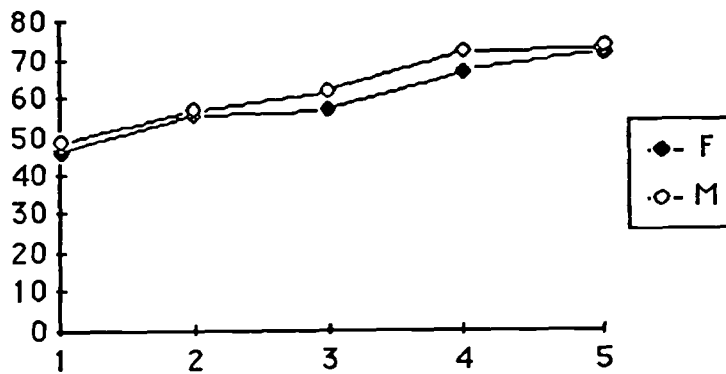
APPENDIX 31

ICC of MLCRT Items by Gender

ICC of Item 1 by Gender
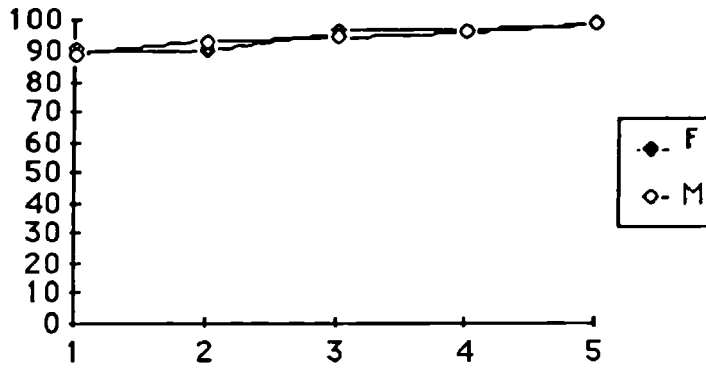
ICC of Item 2 by Gender
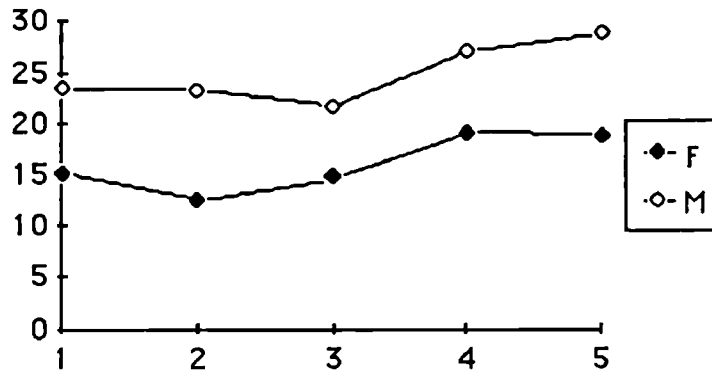
ICC of Item 3 by Gender
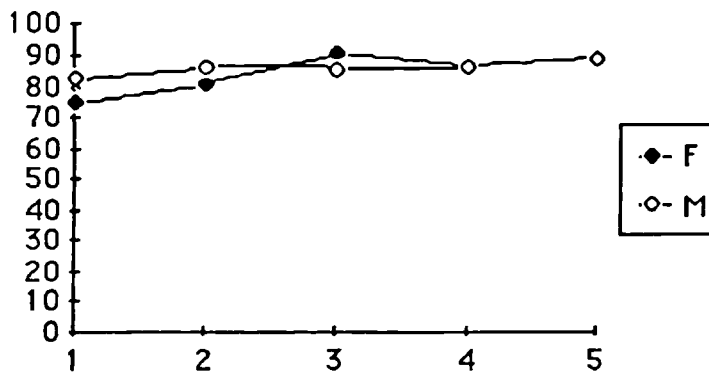
ICC of Item 4 by Gender
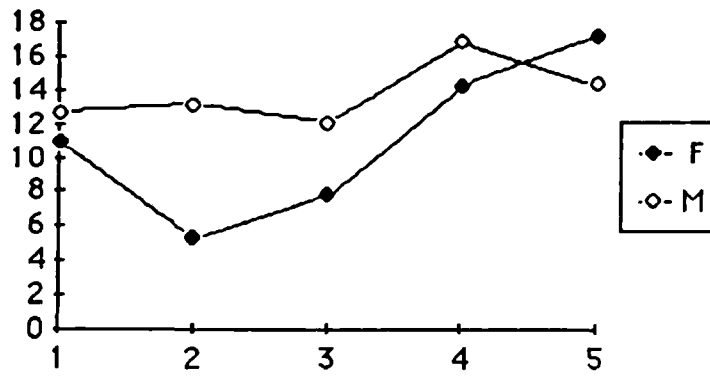
ICC of Item 5 by Gender
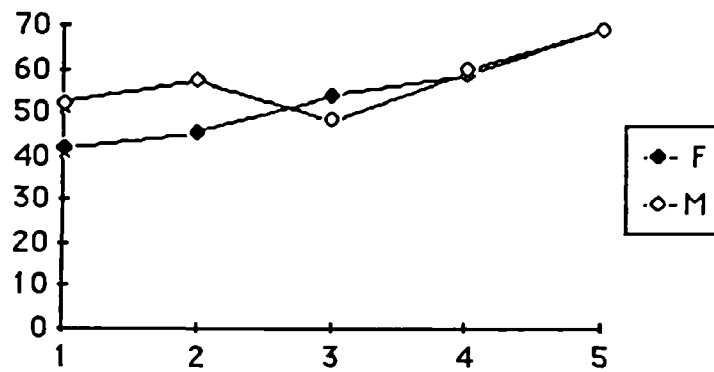
ICC of Item 6 by Gender
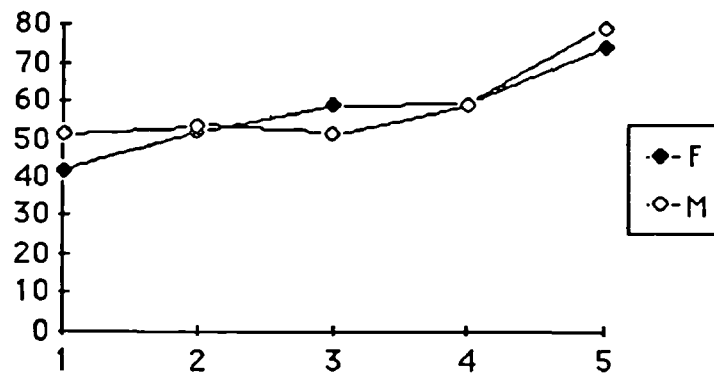
ICC of Item 7 by Gender
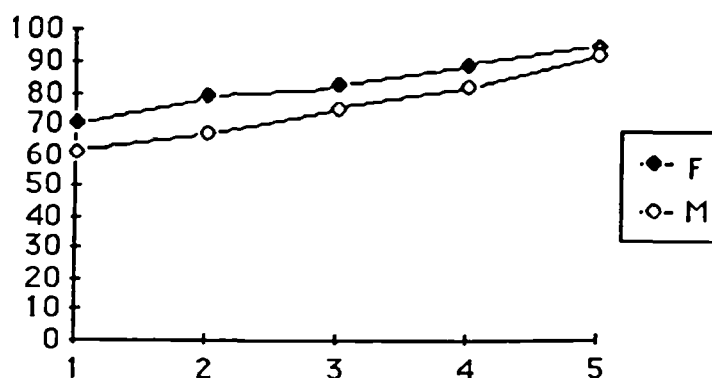
ICC of Item 8 by Gender
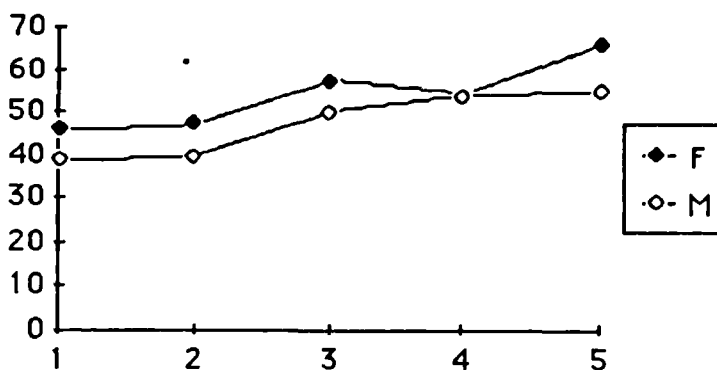
ICC of Item 9 by Gender
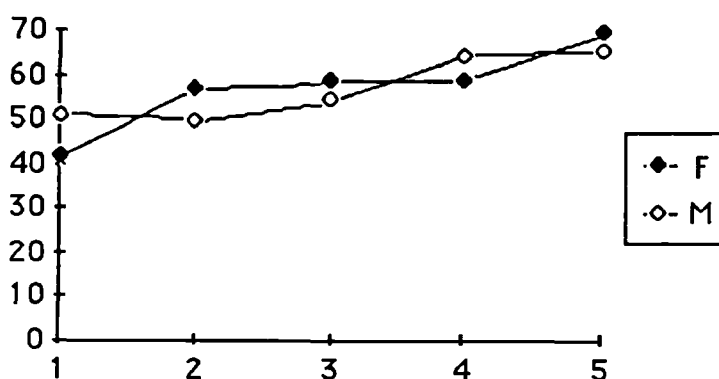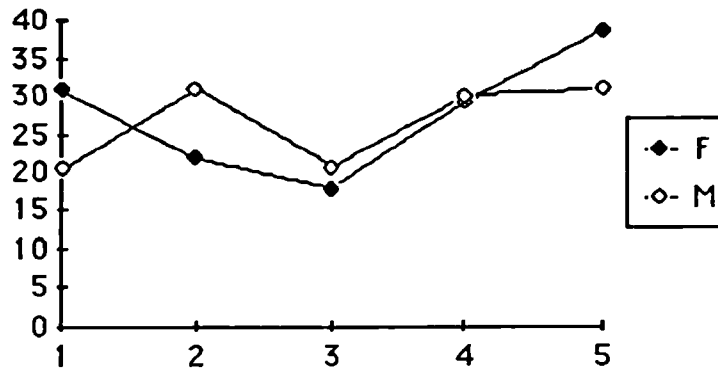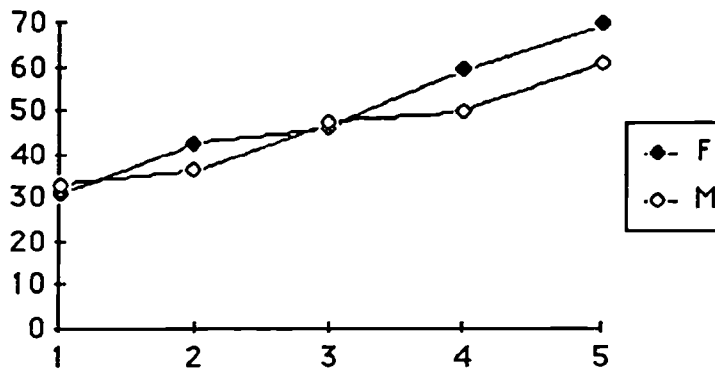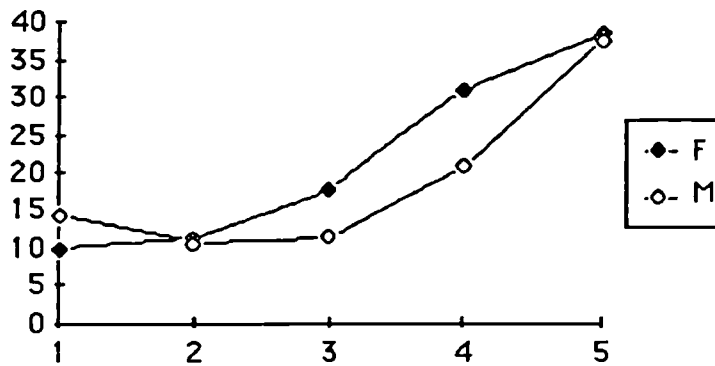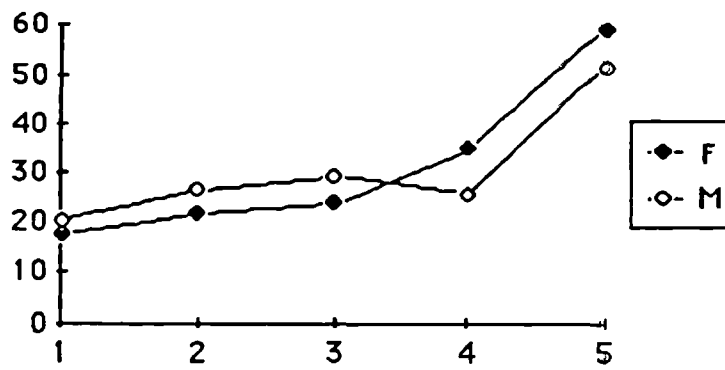

ICC of Item 10 by Gender
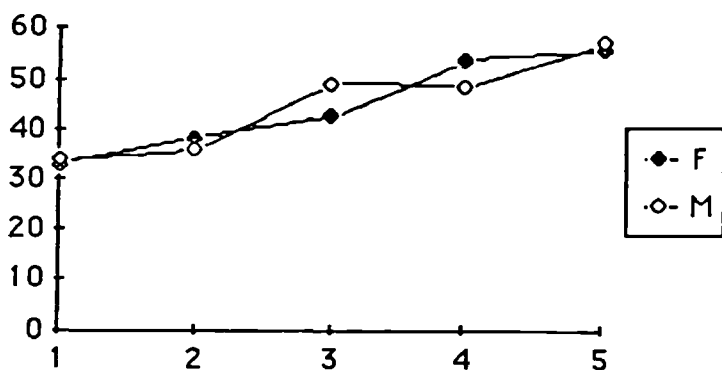
ICC of Item 11 by Gender
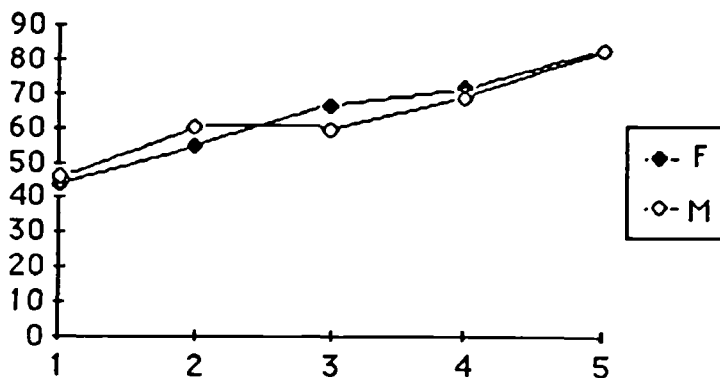
ICC of Item 12 by Gender
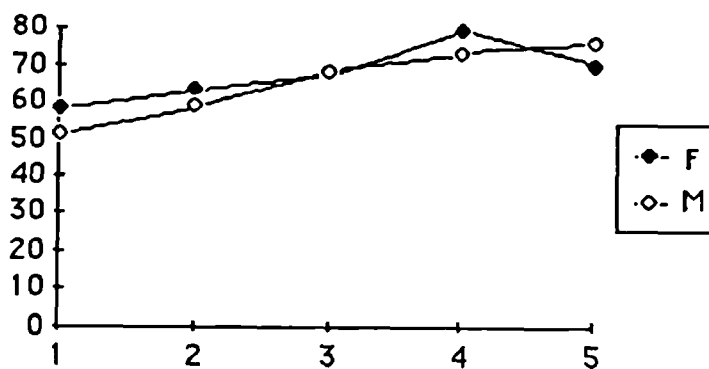
ICC of Item 13 by Gender
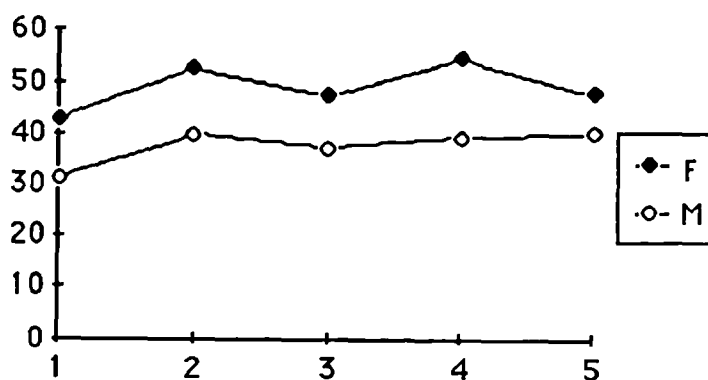
ICC of Item 14 by Gender
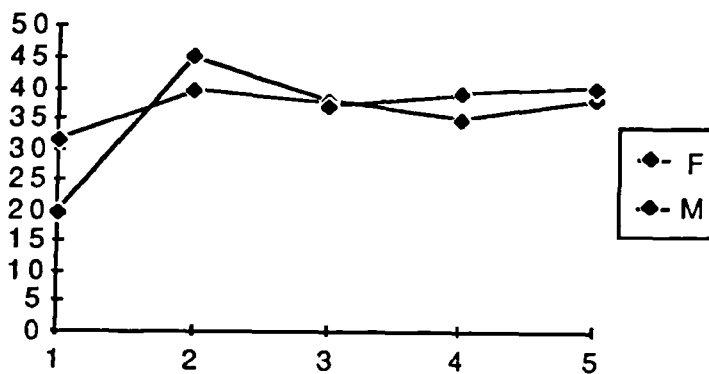
ICC of Item 15 by Gender
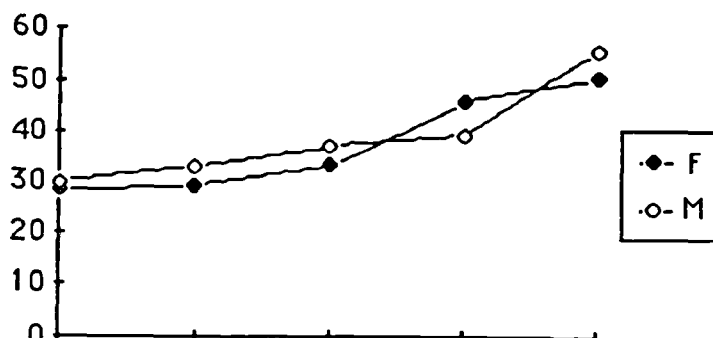
ICC of Item 16 by Gender
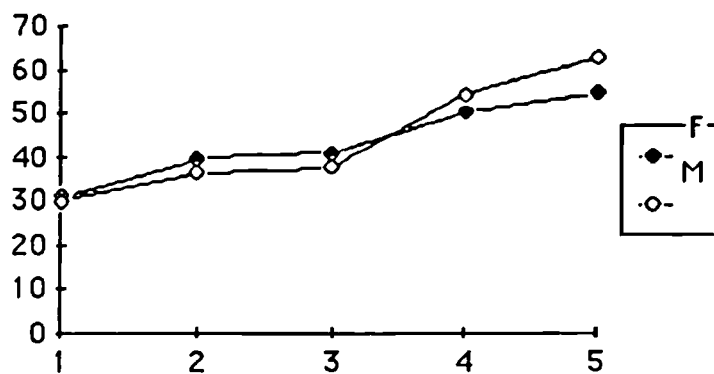
ICC of Item 17 by Gender
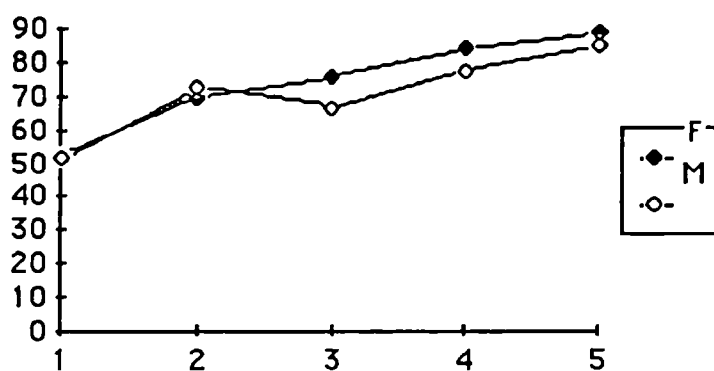
ICC of Item 18 by Gender
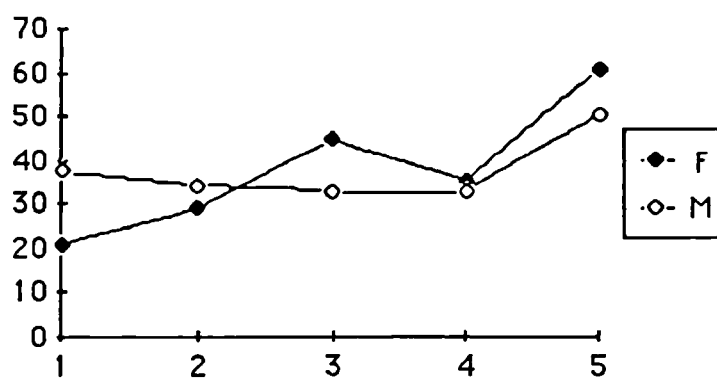
ICC of Item 19 by Gender
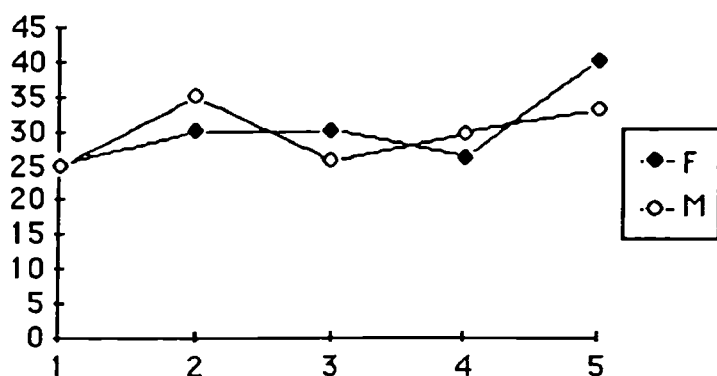
ICC of Item 20 by Gender
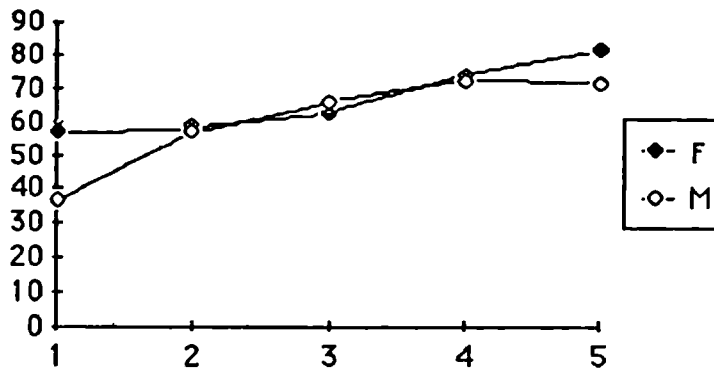
ICC of Item21 by Gender
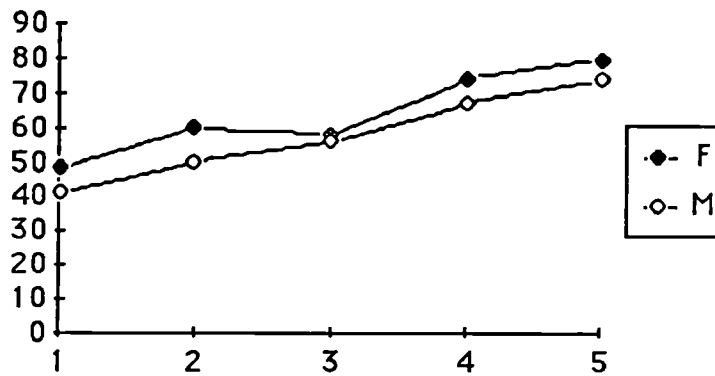
ICC of Item 23 by Gender
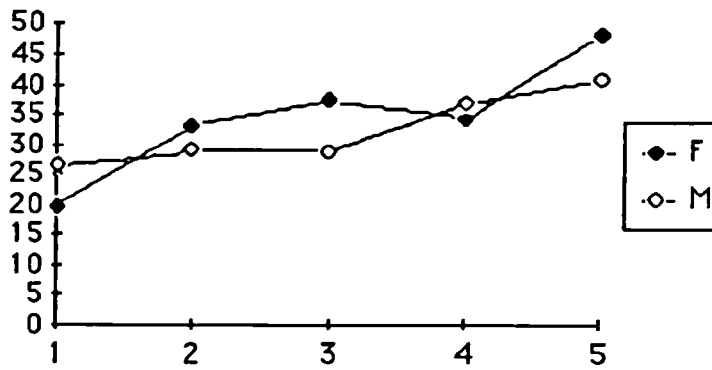
ICC of Item 24 by Gender
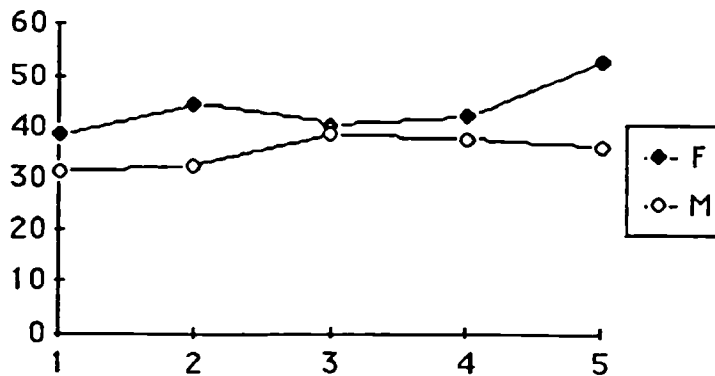
ICC of Item 25 by Gender
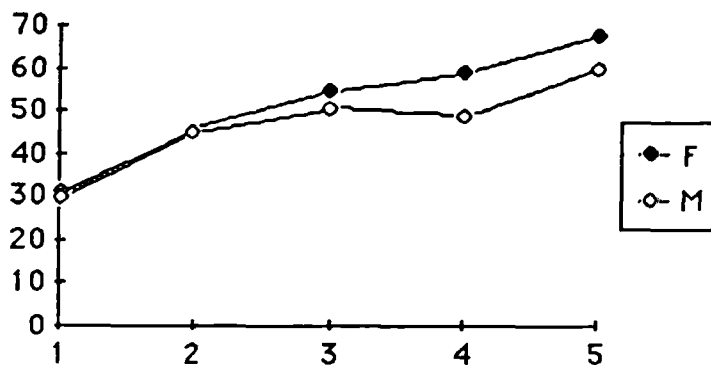
ICC of Item 26 by Gender
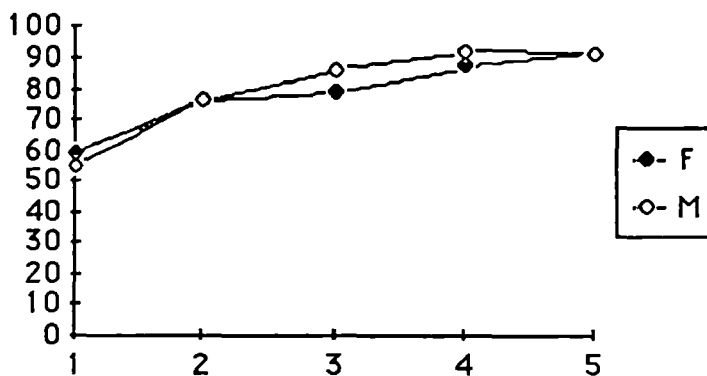
ICC of Item 27 by Gender
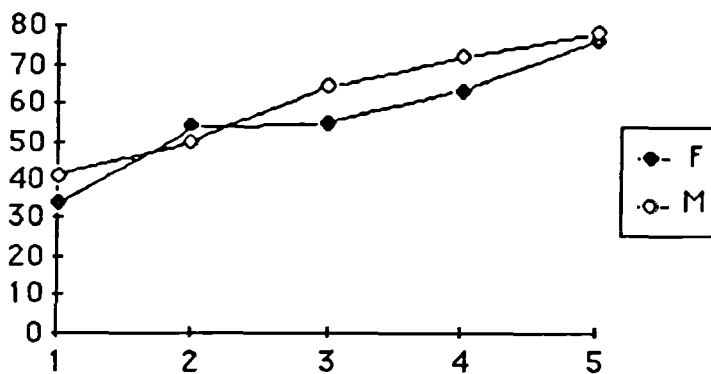
ICC of Item 28 by Gender
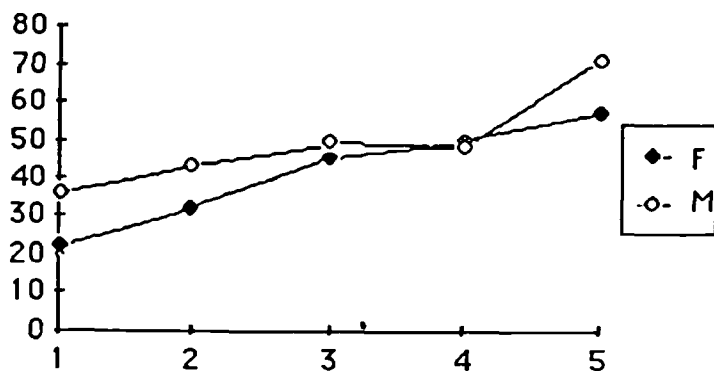
ICC of Item 29 by Gender
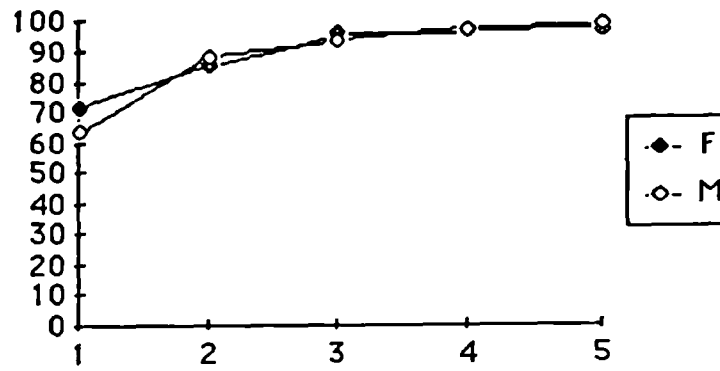
ICC of Item 30 by Gender
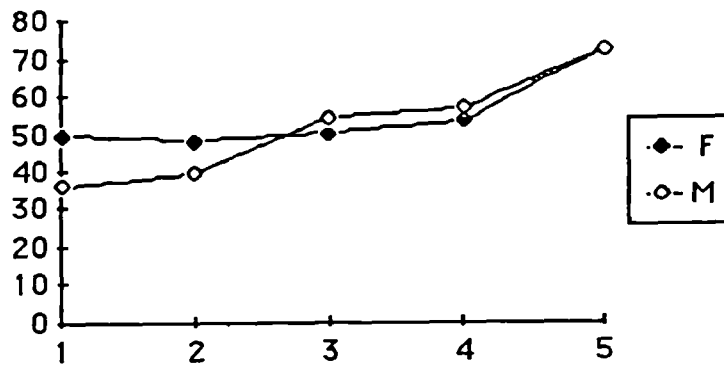
ICC of Item 31 by Gender
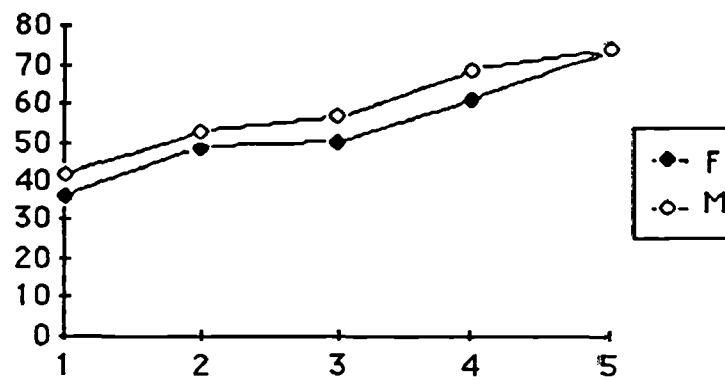
ICC of Item 32 by Gender
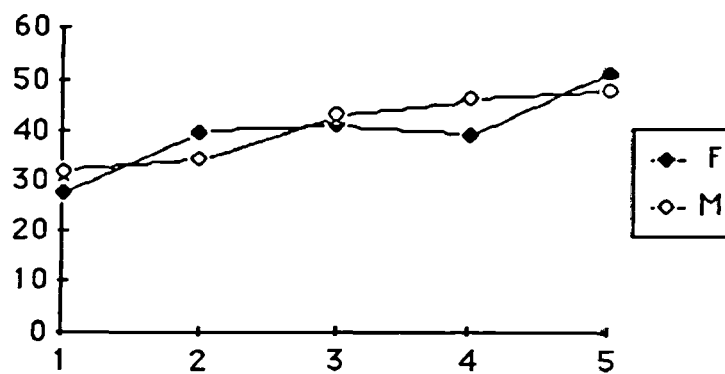

ICC of Item 33 by Gender
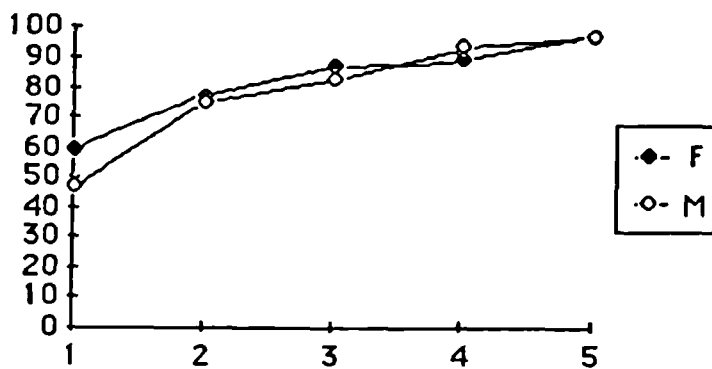

ICC of Item 34 by Gender
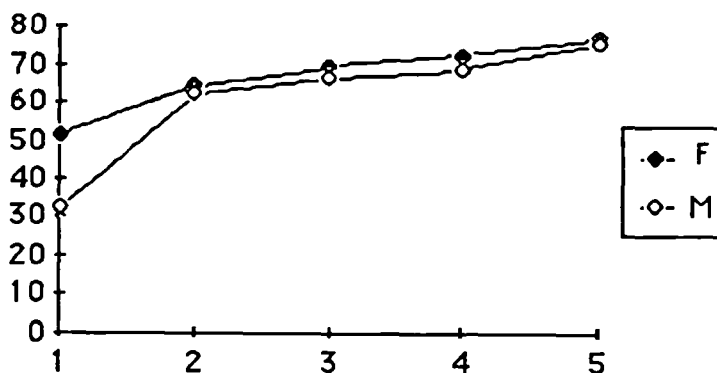
ICC of Item 35 by Gender
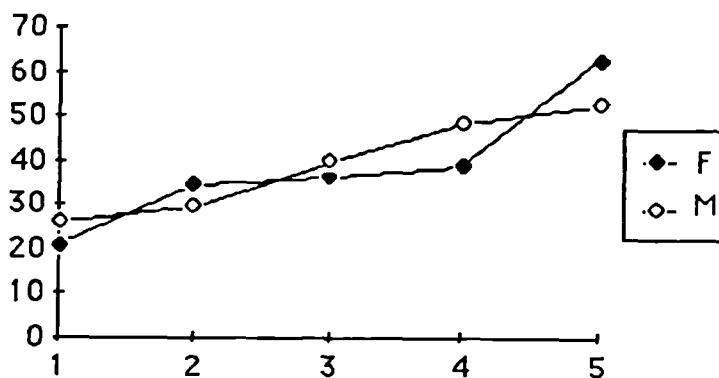

ICC of Item 36 by Gender

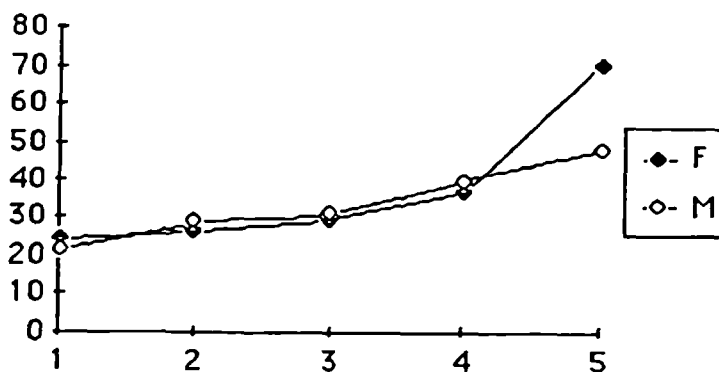

ICC of Item 37 by Gender

ICC of Item 38 by Gender

ICC of Item 39 by Gender

ICC of Item 40 by Gender

ICC of Item 41 by Gender

ICC of Item 42 by Gender

ICC of Item 43 by Gender

ICC of Item 44 by Gender

ICC of Item 45 by Gender

ICC of Item 46 by Gender

ICC of Item 47 by Gender

ICC of Item 48 by Gender

ICC of Item 49 by Gender

ICC of Item 50 by Gender

ICC of Item 51 by Gender
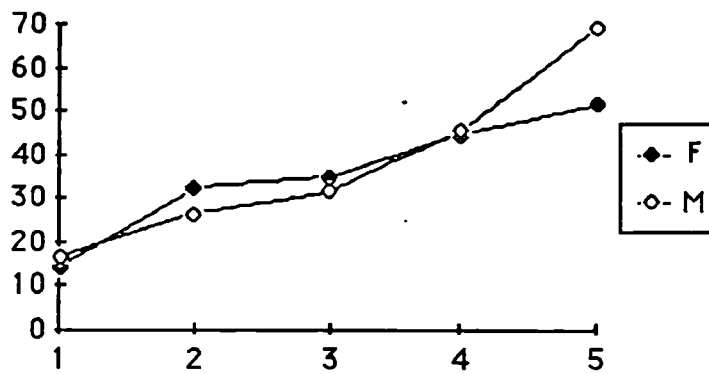
ICC of Item52 by Gender
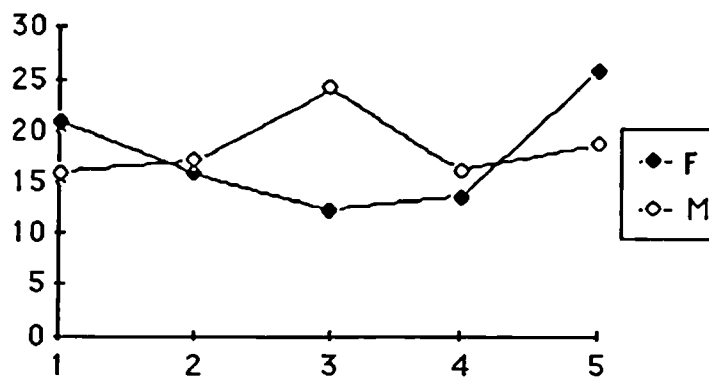
ICC of Item 53 by Gender
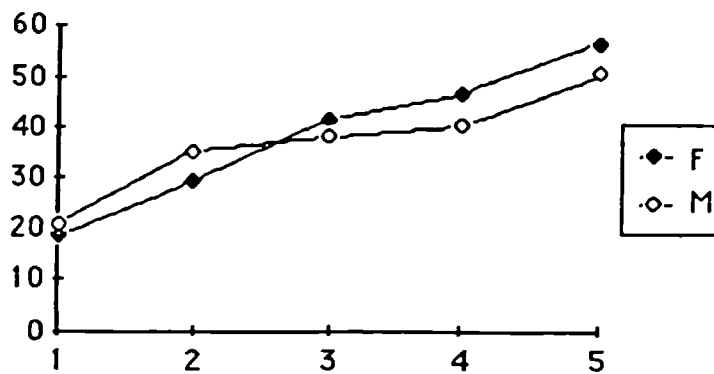
ICC of Item 54 by Gender
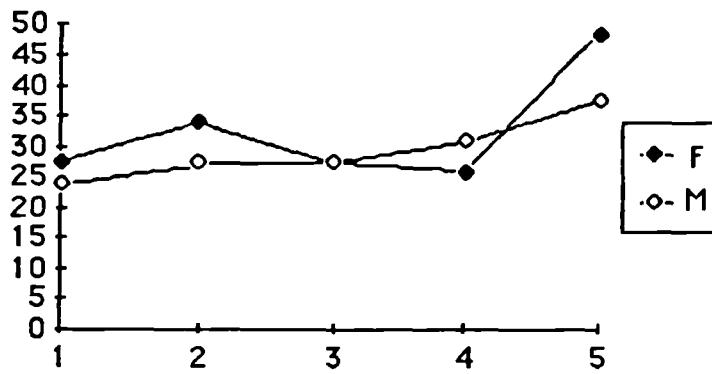
ICC if Item 55 by Gender
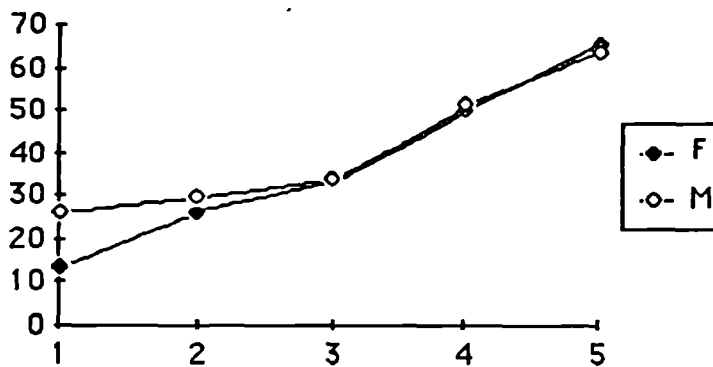
ICC of Item 56 by Gender
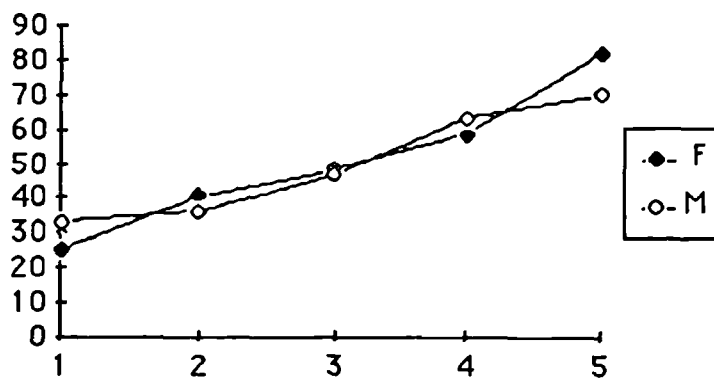
ICC of Item 57 by Gender
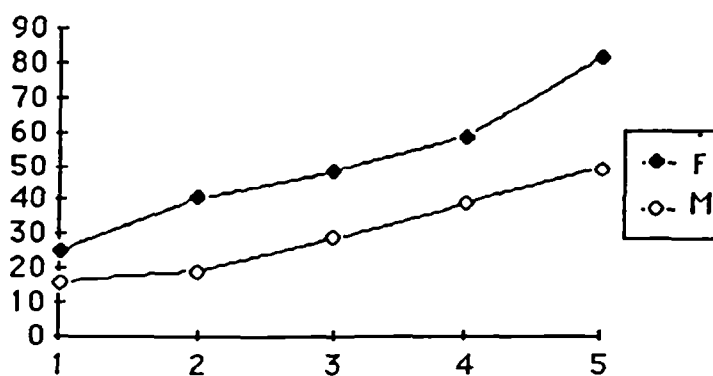
ICC of Item 58 by Gender
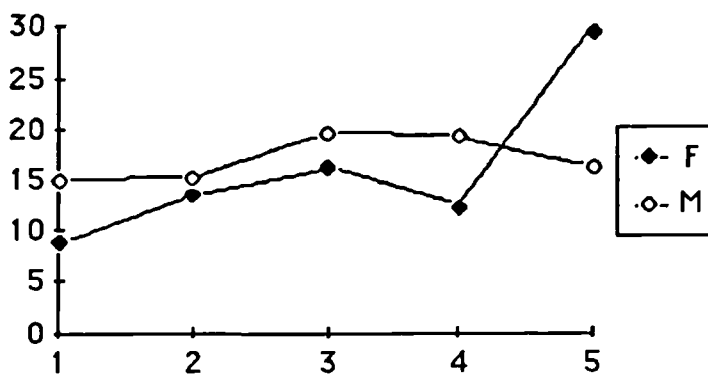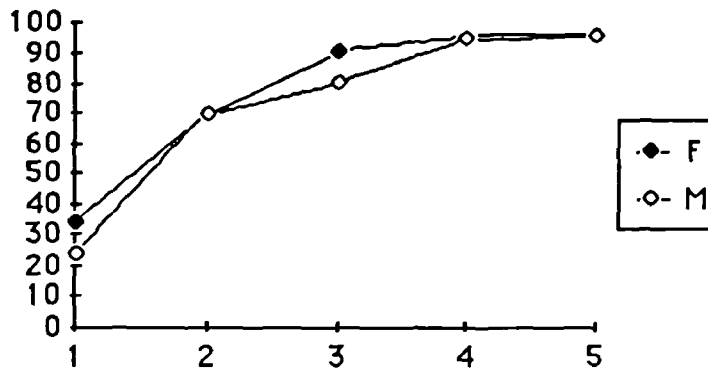

ICC of Item 59 by Gender
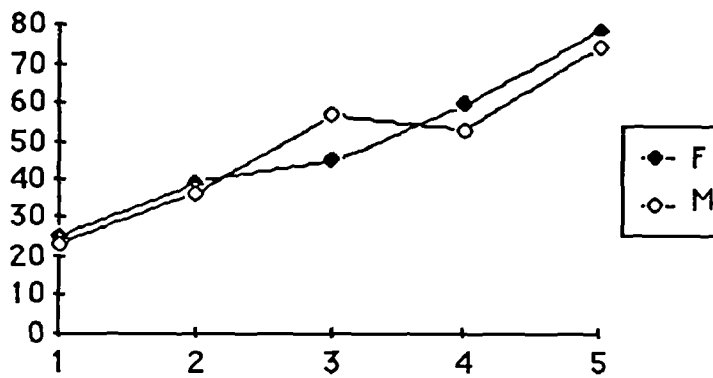
ICC of Item 60 by Gender
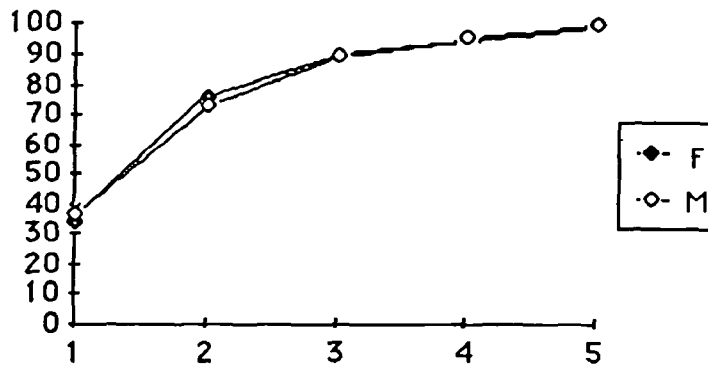
ICC of Item 61 by Gender
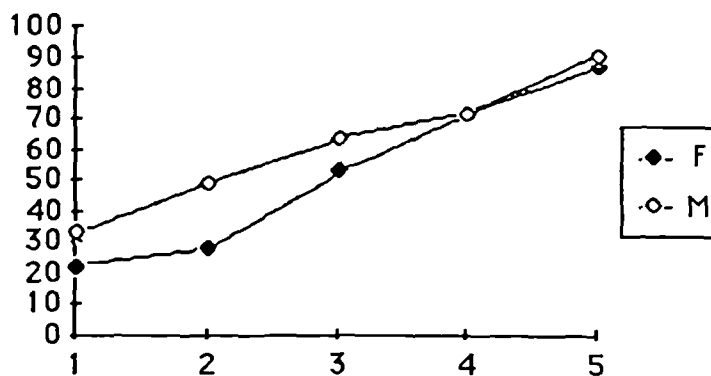
ICC of Item 62 by Gender

Legend: ·●– F, ·○– M
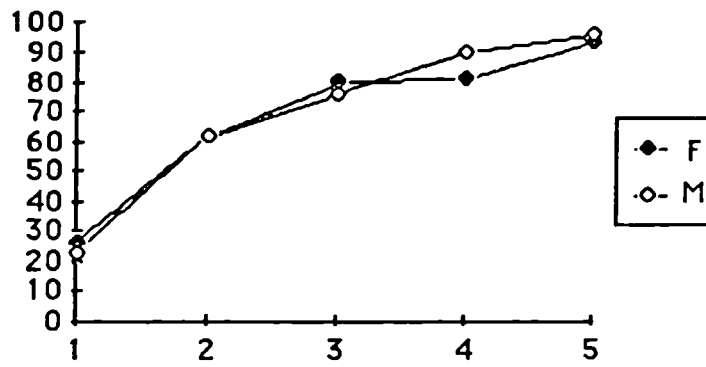
ICC of Item 63 by Gender

Legend: ●– F, ○– M
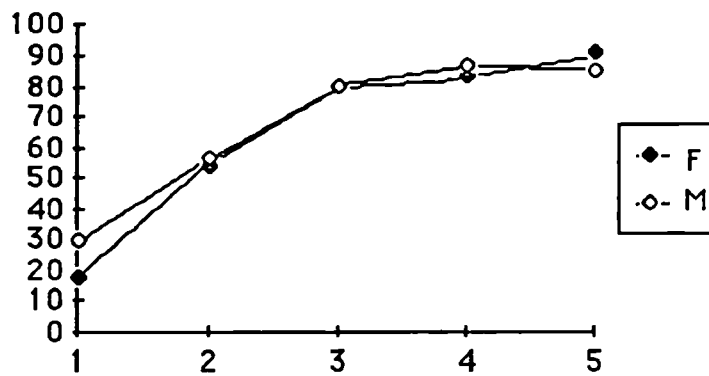
ICC of Item 64 by Gender

Legend: F ●–, ○– M
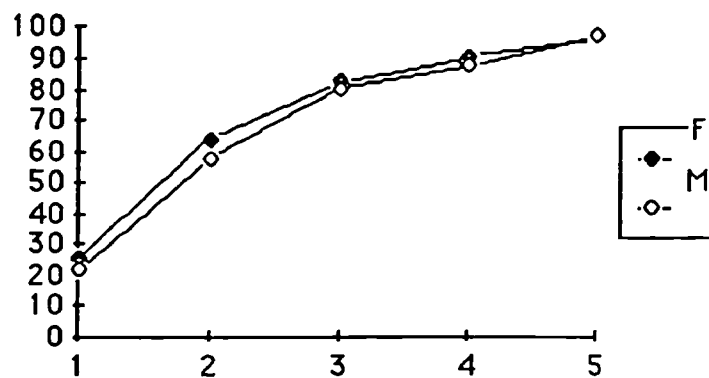
ICC of Item 65 by Gender

Legend: ·●– F, ·○– M
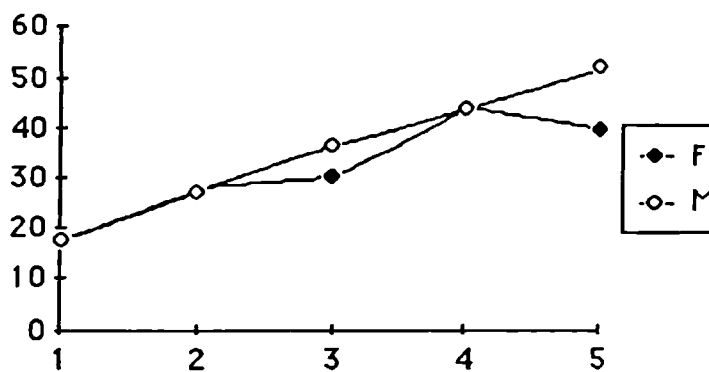
ICC of Item 66 by Gender
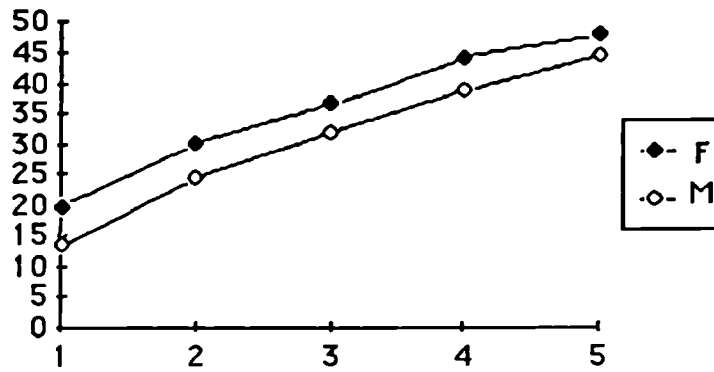
ICC of Item 67 by Gender
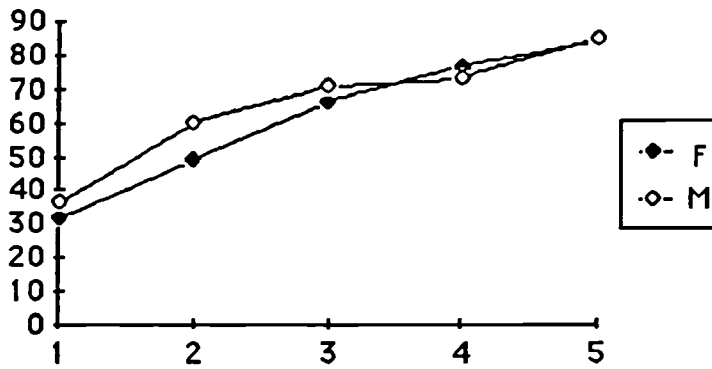
ICC of Item 68 by Gender
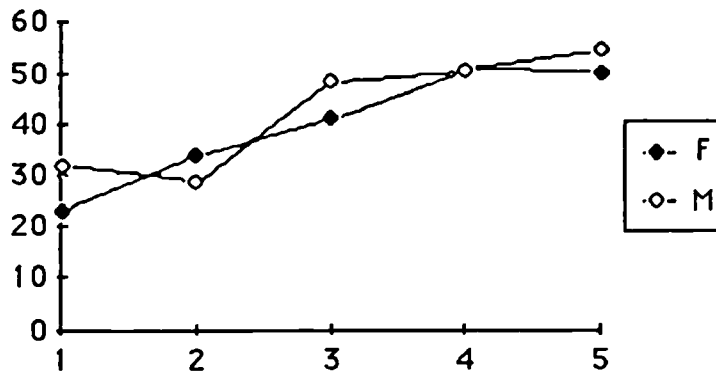
ICC of Item 69 by Gender
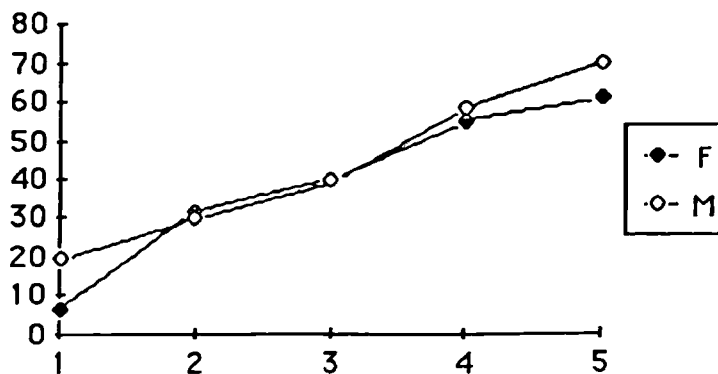
ICC of Item 70 by Gender
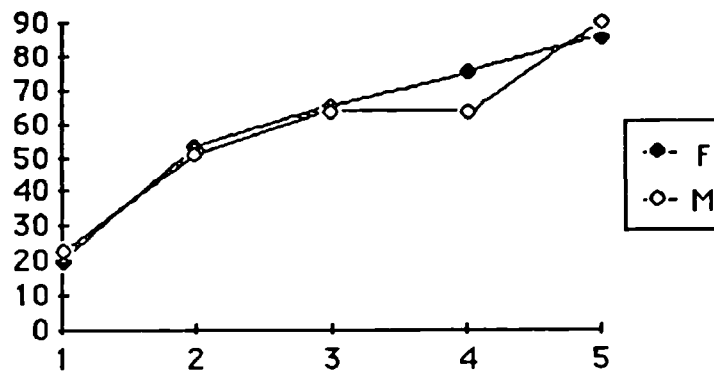
ICC of Item71 by Gender
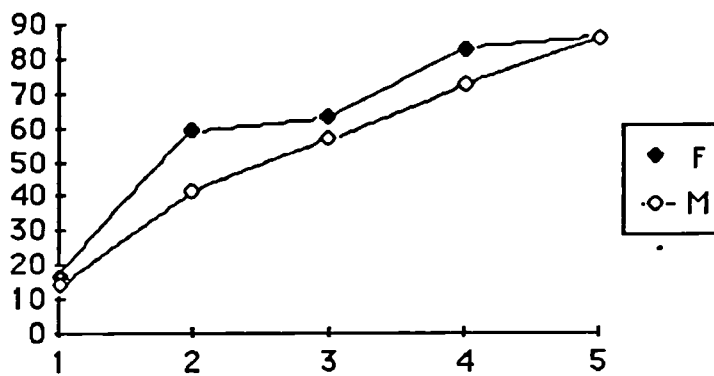
ICC of Item 72 by Gender
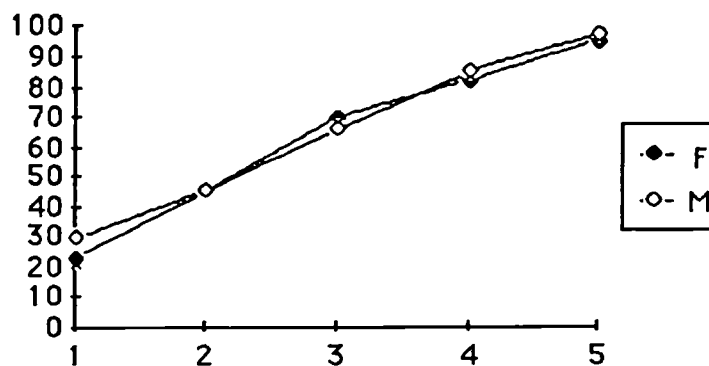
ICC of Item 73 by Gender

ICC Of Item 74 by Gender

ICC of Item 75 by Gender

ICC of Item 76 by Gender

ICC of Item 77 by Gender
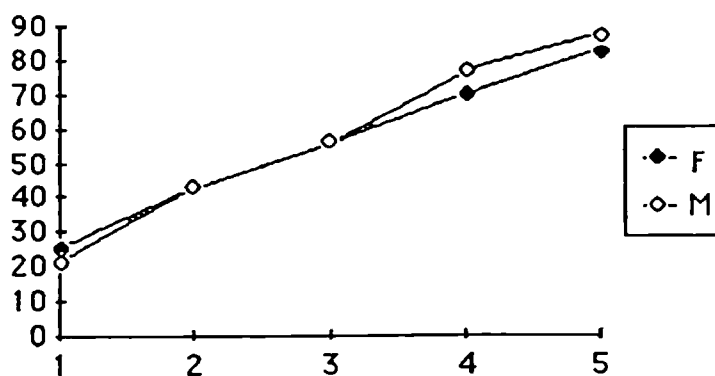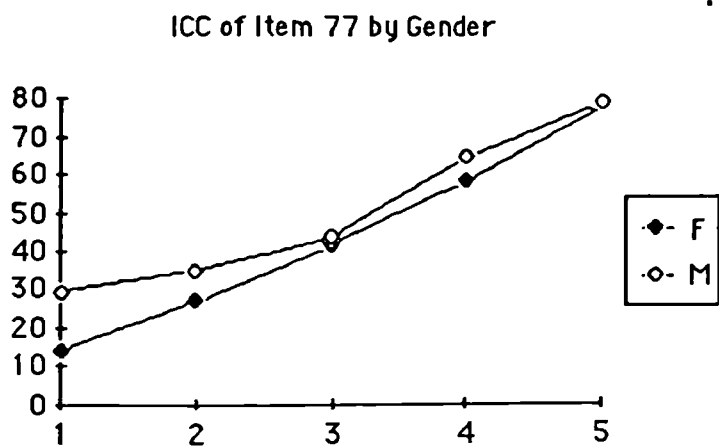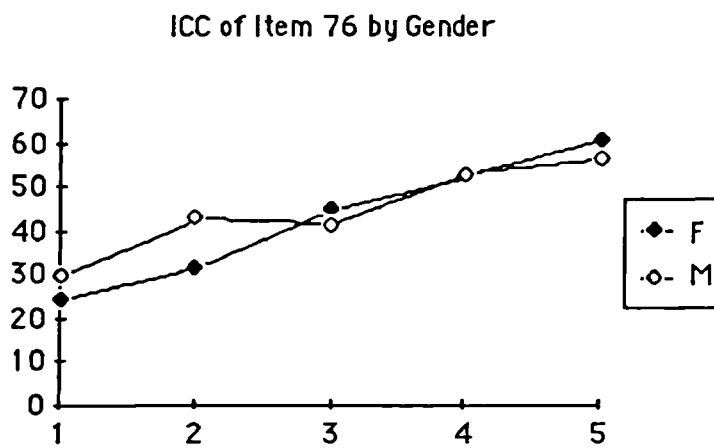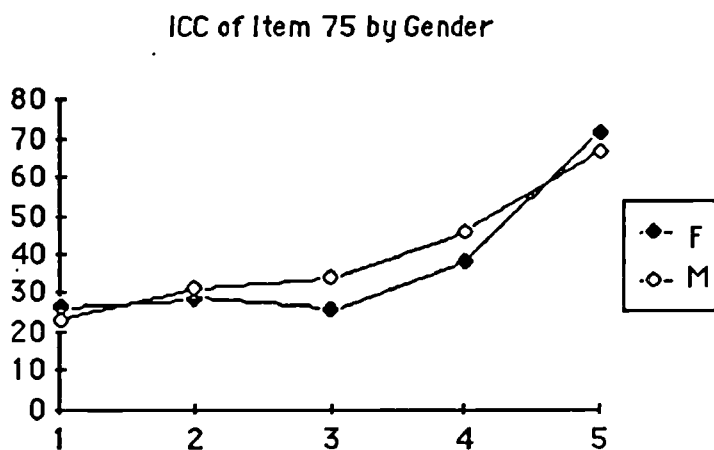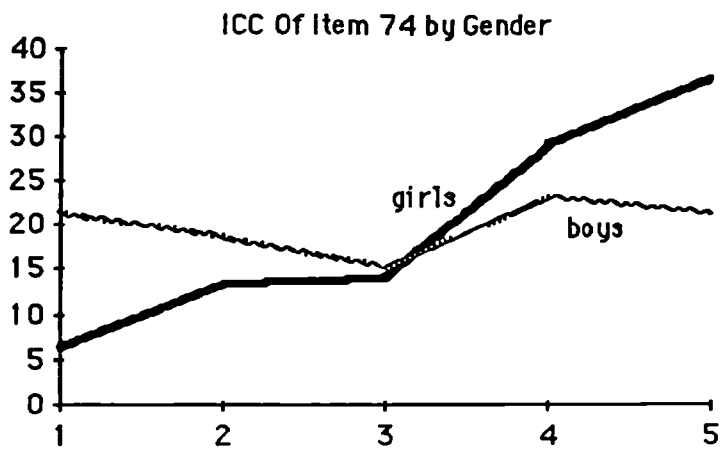
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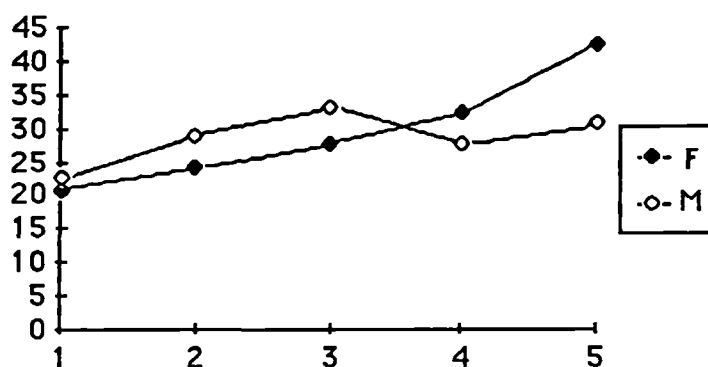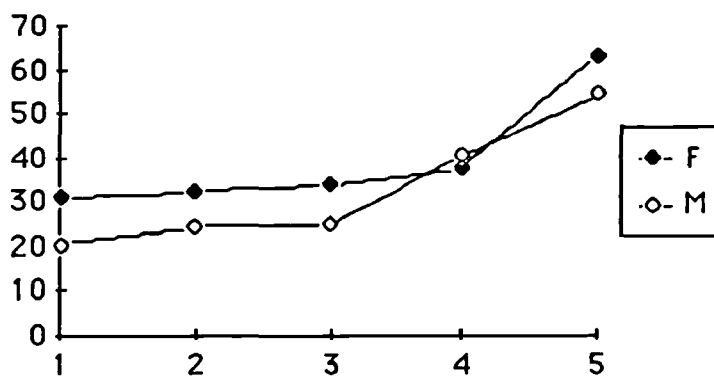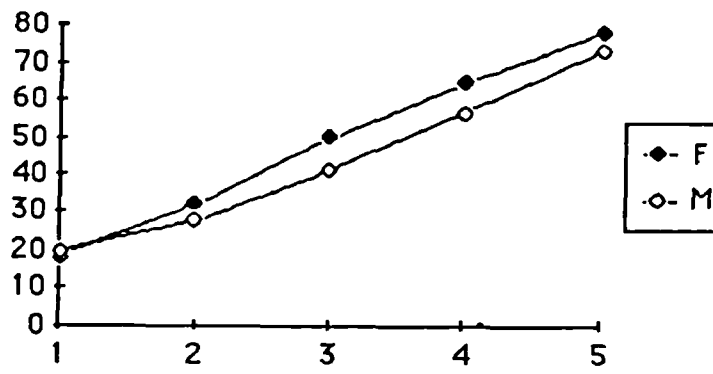

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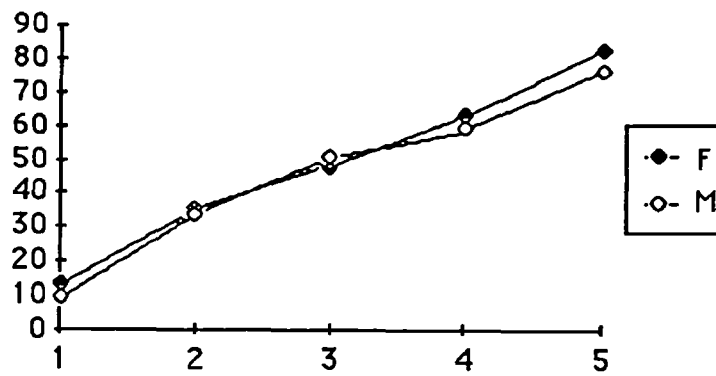
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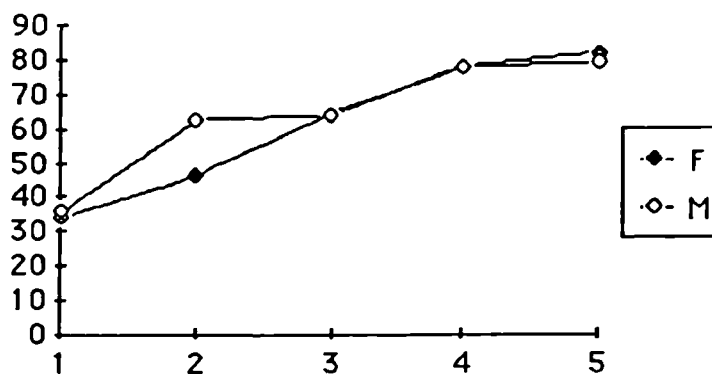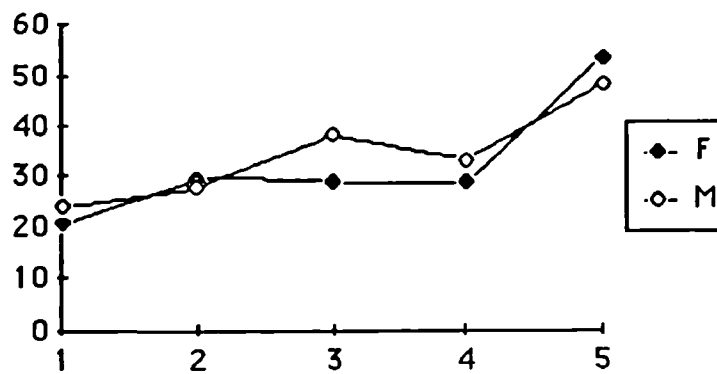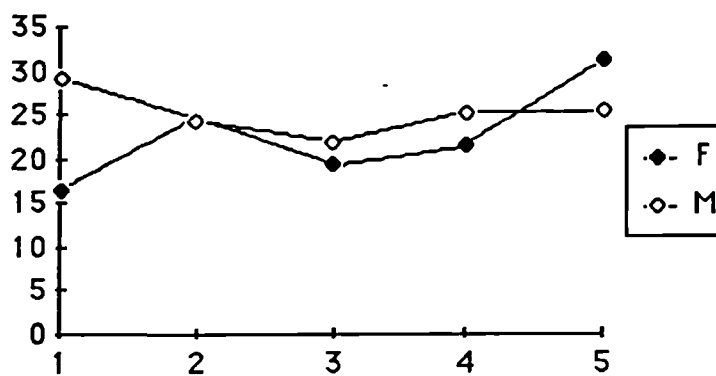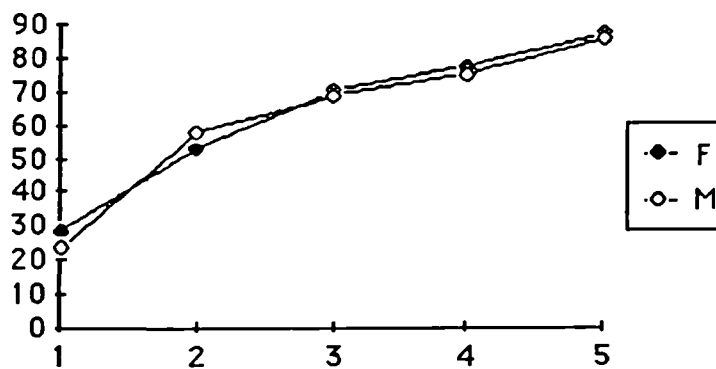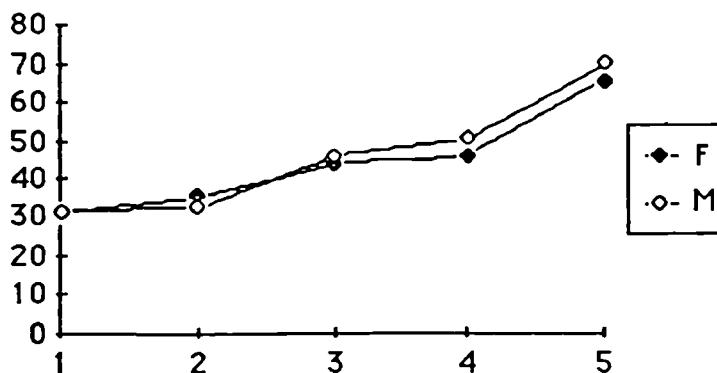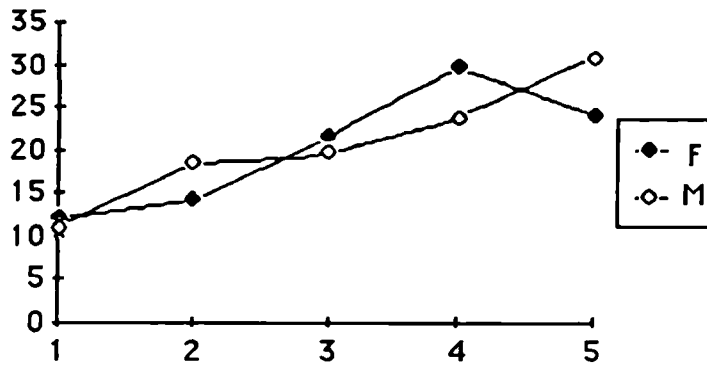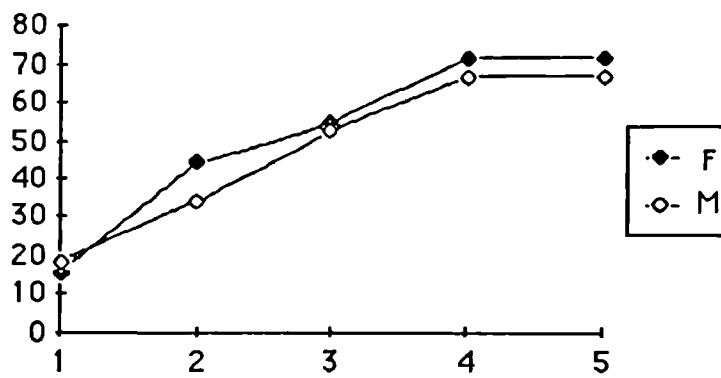

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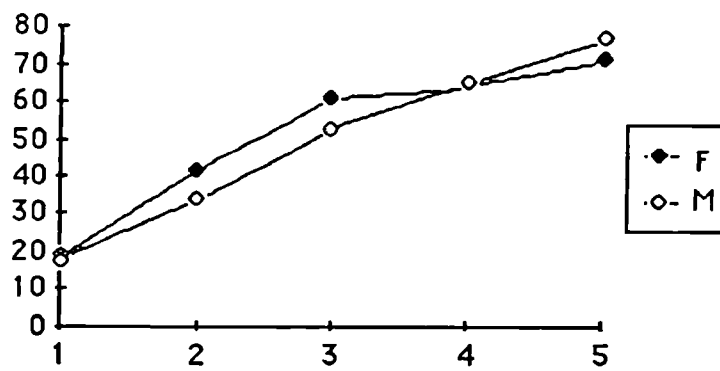
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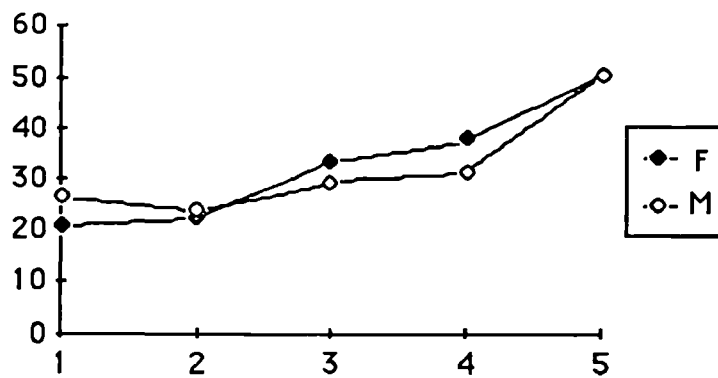
APPENDIX 32

List of Subscales and Items of the RMLCRT

Critical Reading Skills Assessed	RMLCRT Item Number
A. The ability to evaluate the soundness of inductive inferences.	Items 1, 2, 4, 6, 7, 11, 15, 18, 19, 20.
B. The ability to evaluate the soundness of generalization	Items 3, 9, 10, 13, 14, 21, 24, 25.
C. The ability to recognize hidden assumptions.	Items 34, 35, 36, 37.
D. The ability to recognize bias in statements.	Items 8, 28, 29, 30, 31, 32, 33..
E. The ability to recognize factual values and opinion.	Items 12, 38, 39, 40, 41, 42, 43, 44, 45.
F. The ability to recognize author's motive.	Items 11, 16, 23, 26, 48, 51, 52, 57, 58.
G. The ability to identify sources and use of textual material	Items 17, 22, 27, 53, 54, 59, 60, 61.
H. The ability recognize similarities and differences.	Items 46, 47, 49, 50, 55, 56.
I. The ability to evaluate the strength of arguments.	Items 62, 63, 64, 65.

APPENDIX 33
UJIANTARA MEMBACA SECARA KRITIKAL

Arahan: Jangan membuka buku ini sehingga kamu diberitahu.

Ujian ini mengandungi beberapa petikan . Kamu dikehendakki membaca petikan-petikan tersebut dan kemudian menjawab soalan yang mengikutinya. Tolong **bulatkan** huruf yang kamu fikir ialah bagi jawapan yang betul di **kertas jawapan** yang disediakan. Kamu boleh membaca semula sesuatu perenggan seberapa banyak kali yang kamu suka. Jika kamu tidak berapa pasti jawapan bagi sesuatu soalan, kamu boleh menjawab soalan lain dahulu kemudian baru mencuba soalan yang ditinggalkan tadi.

Arahan untuk soalan 1 - 5.

Jawablah soalan yang mengikuti ayat-ayat yang diberi. Kamu dikehendakki menilai samada kesimpulanan yang diberi berdasarkan ayat-ayat yang diberi itu benar, tidak benar atau tidak dapat diketahui.

Contoh 1

Jika hari hendak hujan adalah awan hitam. Tidak ada awan hitam   hari ini.

Oleh itu hari ini tidak akan ada hujan.
A. Betul   B. Tidak   C. Tidak pasti

Jawapan yang betul ialah 'C' iaitu tidak pasti.

Sekarang jawablah soalan-soalan berikut.

Malik dan Azman masing-masing mempunyai sepuluh masalah kira-kira yang harus dibuat. Mereka mula membuatnya pada masa yang sama, tetapi Malik selesaikan kira-kiranya lima belas minit sebelum Azman.

---

1. Malik lebih pandai dari Azman.
   A. Betul   B. Tidak   C. Tidak pasti

2. Azman mendapat lebih banyak jawapan kira-kira yang betul dari Malik.
   A. Betul   B. Tidak   C. Tidak pasti

Salah seorang murid dari Darjah 5B Sekolah Seri Taming telah menjadi juara Pertandingan Teka Kata Kawasan Timur.

---

3. Guru Darjah 5B ialah guru teka-kata yang paling baik di Kawasan Timur.
   A. Betul   B. Tidak   C. Tidak pasti

Encik Wan dan Encik Din pergi mengail bersama-sama. Encik Wan mendapat enam ekor ikan sementara Encik Din mendapat tiga ekor sahaja. Encil Wan dan Encik Din menggunakan umpan yang berlainan

---

4.   Encik Wan ialah seorang pengail yang lebih baik dari Encik Din.
     A. Betul   B. Tidak   C. pasti

Guru Darjah 4A menyimpan rekod tentang murid-murid yang tidak membawa buku ke sekolah pada bulan April. Lima orang murid tidak membawa buku karangan dan sepuluh orang murid tidak membawa buku bacaan

5. Murid-murid tidak membawa buku bacaan lebih kerap pada bulan April daripada lain-lain bulan.
   A. Betul　　　　　B. Tidak　　　　C. Tidak pasti

Arahan bagi soalan 6 hingga 27
Jawablah soalan yang mengikuti petikan yang diberi. Kamu dikehendakki menilai tafsiran yang diberi secara kritikal.

Petikan 1
Ahmad mencari-cari basikalnya yang hilang di kampung itu. Dia tahu kawannya Kasim, seorang budak miskin kaki ponteng, tinggal di kampung itu. Budak yang selalu ponteng memang pencuri. Matanya memerhati di kiri kanan jalan, kemudian, nun di tepi rumah buruk dia ternampak basikalnya tercampak di situ.
Contoh 2
　　　C3.　　Kasim telah mencuri basikal Ahmad.
　　　　　A. Mungkin benar　　B. Mungkin tidak　　C. Tidak pasti
　　Jawapan yang betul ialah 'C' iaitu tidak pasti.

　　　C4..　Ahmad tinggal di kampung itu.
　　　　　A. Mungkin benar　　B. Mungkin tidak　　C. Tidak pasti
　　Jawapan yang betul ialah 'B' iaitu mungkin tidak.

Sekarang jawab soalan-soalan yang berikut berdasarkan petikan yang sama.

6. Kassim tinggal di rumah buruk itu.
   A. Mungkin benar　　B. Mungkin tidak　　C. Tidak pasti

7. Basikal itu di taruh secara sembarangan.
   A. Mungkin benar　　B. Mungkin tidak　　C. Tidak pasti

8. Perkataan apakah yang paling serong, atau paling memburukkan Kasim.
   A. kawannya　B. budak miskin　C. kaki ponteng　D. tercampak

Petikan 2
Nora ingin mendapat markah yang tinggi untuk ujian ejaannya padahari Jumaat itu. Pelajaran ejaan sangat susah. Pada masa yang lalu ia mendapat markah yang agak rendah. Ibu Nora berkata, "Mengapa tidak belajar sedikit-sedikit setiap hari, daripada belajar semua perkataan sekali gus pada malam Jumaat?" Setiap malam dalam minggu itu Nora belajar ejaan. Pada hari Jumaat ia mendapat markah yang tinggi untuk ujian itu

9. Semenjak hari itu Nora belajar sedikit-sedikit setiap malam, tidak lagi
   A. Mungkin benar　　B. Mungkin tidak　　C. Tidak pasti

10. Kanak-kanak yang belajar sedikit demi sedikit setiap hari tidak akan menjadi pandai.
    A. Mungkin benar　　B. Mungkin tidak　　C. Tidak pasti
11. Apakah yang hendak ditunjukkan oleh penulis?

A. Bagaimana rajinnya Nora belajar.
B. Belajar sedikit-sedikit lama-lama pandai.
C. Mendengar kata ibu itu baik akhirnya.
D. Jangan tunggu masa terakhir baru belajar.

12. Yang mana satukah yang merupakan pendapat?
A. Pelajaran ejaan sangat susah.
B. Nora ingin mendapat markah yang tinggi.
C. Nora belajar ejaan sedikir-sedikit setiap malam.
D. Pada hari Jumaat ia mendapat markah yang tinggi.

Petikan 3

Pak Mat dan anaknya Adam telah menjadi juara peraduan gasing yang diadakan sebagai acara kemuncak Pesta Bulan Budaya. Gasing mereka diadili sebagai yang tercantik dan paling menarik pusingannya. Mereka membuat gasing kemenangan itu dari kayu bakau yang diambil dari belakang rumah mereka. Kepala gasing itu telah diukir berbentuk kepala naga, sementara badannya dicat berbelang-belang dengan warna merah dan putih. Kedua-duanya mengatakan mereka tidak sangka mereka akan menang.

---

13. Gasing yang terbaik dibuat dari kayu bakau.
A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

14. Orang ramai amat gemar menyaksikan peraduan gasing.
A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

15. Gasing Pak Mat dan Adamlah yang paling cantik.
A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

16. Tujuan penulis cerita ini ialah untuk
A. Menceritakan cara Pak Mat dan Adam membuat gasing.
B. Menceritakan tentang peraduan gasing acara kemuncak.
C. Menceritakan hal Pak Mat dan Adam memenangi peraduan gasing.
D. Menaikkan nama Pak Mat dan Adam sebagai pembuat gasing.

17. Petikan di atas mungkin suatu
A. cerita rekaan   B. cerita benar
C. laporan akhbar   D. catatan harian

Petikan 4

Pada pagi ini aku, Misah dan Janah, kawanku dari madrasah pergi dari rumah ke rumah memungut derma wang dan pakaian untuk mangsa banjir di kampung Selasih. Selepas dua buah rumah kami tidak terlarat lagi mengangkut pakaian dan barang-barang keperluan yang diberi orang. Misah menebalkan muka meminta murid- murid lelaki yang malas membantu kami. Dengan suka hati mereka pun turut serta. Kami dapat memungut banyak wang, pakaian dan peralatan rumah. Tidak sesia penat lelah kami.

---

18. Wang dan pakaian derma itu akan disampaikan kepada mangsa banjir.
A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

19. Murid-murid perempuan itu merasa malu untuk meminta bantuan murid lelaki.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

20. Murid lelaki dan perempuan yang bekerjasama itu telah dapat memungut lebih banyak pakaian dari apa yang mereka akan dapati jika mereka pergi bersendirian.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

21. Semua murid-murid sekolah madrasah berhati mulia.
   A. Mungkin benar   B. Mungkin tidak   C. Tidak pasti

22. Petikan di atas mungkin suatu
   A. cerita benar   B. cerita pendek
   C. laporan akhbar   D. catatan harian

23. Tujuan pengarang petikan ini ialah untuk
   A. menceritakan bagaimana mereka dapat memungut derma.
   B. menunjukkan mereka suka menolong orang susah.
   C. menceritakan pengalaman mereka memungut derma.
   D. menerangkan kemalasan murid lelaki.

Petikan 5

Manusia yang tinggal di gua-gua batu itu kemudian tahu bagaimana memasang api di hadapan gua mereka pada waktu malam. Mereka boleh nampak cahaya api berkilauan di dalam mata-mata binatang buas yang berkeliaran di situ bila keadaan gelap. Mereka akan dapat tahu bila waktu bahaya akan tiba selagi api-api di luar gua itu masih menyala.

---

24. Banyak manusia di gua-gua batu itu terselamat oleh api yang dinyalakan di luar gua itu.
   A. Mungkin benar   B. Mungkin tidak benar   C. Tidak pasti

25. Banyak binatang buas yang melompat dari api lalu membunuh manusia dalam gua.
   A. Mungkin benar   B. Mungkin tidak benar   C. Tidak pasti

26. Penulis perenggan ini
   A. menerangkan kesusahan orang zaman dahulu.
   B. menceritakan keadaan binatang buas memakan orang.
   C. menerangkan kegunaan api pada orang-orang digua batu.
   D. menerangkan kebodohan orang-orang zaman gua batu.

27. Petikan di atas mungkin suatu
   A. cerita benar   B. cerita rekaan
   C. laporan akhbar   D. catatan harian

Arahan bagi soalan 28 hingga 30
Bulatkan perkataan di mana penulis tidak menggunakan kata-kata atau unsur-unsur yang berlebihan .

Contoh 3

Kereta jenis PURNAMA ialah kereta yang terhandal di seluruh Asia. Ia dikagumi oleh mereka yang tahu menilai mutu terbaik.

A. dikagumi   B. terbaik   C. terhandal   D. menilai

Jawapan yang betul ialah 'D' iaitu tahu.

Sekarang jawablah soalan-soalan yang berikut.

28. Televisyen dikagumi sebagai suatu alat hiburan yang   dipuja ramai, baik seba. saluran pendidikan atau hiburan.
    A. hiburan   B. dipuja   C. dikagumi   D. ramai

29. Ramai penaja yang sangat pemurah telah mengeluarkan beribu-ribu dolar   untuk menaja rancangan TV yang menarik hati. Ini membuat ramai   penonton terpaku dikaca TV apabila rancangan idaman mereka dipancarkan.
    A. idaman   B. sangat   C. terpaku   D. menaja

30. Seniwati Nani yang sungguh jelita telah berjaya menawan jutaan peminat akibat dari pandainya ia melakunkan watak wanita moden.
    A. melakunkan   B. jelita
    C. jutaan   D. pandainya

Arahan bagi soalan 31 hingga 33.
Pilih   ayat-ayat yang 'serong' atau 'berat sebelah' atau 'yang cuba mempengaruhi pembaca' dari kumpulan empat ayat yang berikut.

Contoh 4
A.   *Seorang pelajar miskin telah mendapat bantuan biasiswa.*
B.   *Pelajar tersebut mengucapkan terima kasih kepada Persatuan Kampung Pasir.*
C.   *Jikalau tidak kerana bantuan Persatuan Kampung Pasir   Rahim tidak akan dapat meneruskan pelajarannya.*
D.   *Persatuan   Kampung Pasir telah menganugerahkan biasiswa sebanyak3000 dolar setahun.*
Ayat yang serong itu ialah: --------
        Jawapan yang betul ialah 'C'.

Sekarang buatlah soalan-soalan yang berikut.

A. Satu perbuatan   yang sangat digalakkan ialah bacaan buku-buku   cereka.
B. Sudah tiba masanya kita mengenepikan buku-buku hikayat yang usang dan ketinggalan zaman.
C.   Cerita -cerita lama kerap mengisahkan tentang kehidupan di istana.
D. Cereka berunsur sains dan misteri digemari oleh murid-murid sekolah rendah dan menengah.

31.   Ayat yang serong itu ialah: -----

A. Seorang yang bijak tidak akan membuang masa di pusat-pusat membeli belah.

B. Pusat-pusat membeli belah telah menjadi tempat pergaulan bebas muda-mudi.

C. Muda-mudi membeli-belah di toko-toko besar yang menjual pakaian model terbaru.

D. Kedai makanan segera seperti Mac Donald menjadi tumpuan anak-anak muda.

32. Ayat yang serong itu ialah: ------

A. Satu rompakan bersenjata telah dilakukan oleh tiga orang pemuda berambut panjang.

B. Mereka telah mencederakan tuan punya kedai dan membunuh isterinya yang cuba menjerit.

C. Wang lebih dari dua puluh ribu dolar dan semua barang-barang kemas telah dibawa lari.

D. Semua orang diingatkan supaya berhati-hati terhadap pemuda yang berambut panjang.

33. Ayat yang serong itu ialah: --------

Arahan untuk soalan 34 hingga 37

Bagi sesuatu ayat yang diberi, carilah ide atau anggapan yang tersembunyi atau tersirat di sebalik kata-kata tersebut. Anggaplah semua ide dalam ayat-ayat itu benar.

Contoh 5

Kerani pejabat pos itu tidak melayan orang-orang yang tidak beratur untuk membeli setem.

C5 Anggapan yang tersembunyi di sebalik kata-kata tadi ialah

A. Orang yang hendak membeli setem di pejabat pos mestilah beratur.

B. Kerani pejabat pos itu seorang yang sombong.

C. Kerani pejabat pos seorang yang tidak pilih kasih.

D. Mereka yang beratur akan dilayan dengan baik.

Jawapan yang betul ialah 'A'.

Sekarang jawablah soalan-soalan yang berikut

Seluar jean jenama Rust lebih baik dari seluar jean jenama Brush kerana harganya lebih mahal.

---

34. Anggapan yang tersembunyi di sebalik kata-kata tadi ialah ----
A. Seluar jean Rust dibuat dari bahan yang lebih baik.
B. Lebih mahal sesuatu seluar jean itu, lebih baik mutunya.
C. Seluar jean Rust dibuat dari bahan yang kurang baik.
D. Seluar jean lebih baik kerana harganya lebih mahal.

Faridah seorang murid yang pandai kerana dia tidak mencabar kata-kata guru

35. Anggapan yang tersembunyi disebalik kata-kata tadi ialah
    A. Faridah menjadi pandai kerana ia mengikut perintah guru.
    B. Semua murid-murid yang pandai tidak akan mencabar kata-kata guru mereka.
    C. Hanya murid-murid yang bodoh mencabar kata-kata guru mereka.
    D. Kebanyakan murid yang pandai tidak mencabar kata-kata guru.

Satu cara yang baik untuk mengurangkan kejadian kecurian kereta ialah dengan memasang kunci berbunyi.

36. Anggapan yang tersembunyi disebalik kata-kata tadi ialah
    A. Hukuman yang berat untuk pencuri kereta akan mengurangkan kecurian.
    B. Pencuri tidak akan berani mencuri kereta yang dipasang kunci yang
    C. Kunci tersebut akan berbunyi hanya apabila pencuri cuba masuk.
    D. Kunci tersebut adalah alat menghalang kecurian kereta yang berkesan.

Encil Marzuki, seorang peguam yang berhemah tinggi tidak mungkin melakukan rompakan tersebut

37. Anggapan yang tersembunyi di sebalik kata-kata tadi ialah:
    A. Encik Marzuki tidak pernah melakukan kesalahan jenayah
    B. Tidak ada bukti yang menunjukkan yang Encik Marzuki yang melakukan rompakan itu.
    C. Peguam ialah orang yang baik dan mungkin melakukan rompakan.
    D. Encik Marzuki bukan seorang berhemah tinggi kalau ia melakukan rompakan.

Arahan untuk soalan 38 hingga 40
Pilihlah ayat yang yang mengemukakan suatu pendapat, fakta atau maklumat dari kumpulan
empat ayat yang berikut.

Contoh 6
  C7. Ayat yang menunjukkan pendapat ialah: ------
  A. Penduduk Singapura berjumlah hampir tiga juta orang.
  B. Penduduk Singapura rajin bekerja untuk mempertingkat ekonomi.
  C. Kaum wanita juga digalakkan untuk bekerja.
  D. Pendapatan negara bertambah dari tahun ke tahun.

Jawapan yang betul ialah 'B'.

Sekarang jawablah soalan-soalan yang berikut.

38.　Ayat yang menunjukkan pendapat ialah: ------
　　　A.　Ramai sanak-saudara melawat nenek Aman di rumah sakit.
　　　B.　Nenek Aman mengidap penyakit barah usus
　　　C.　Penyakit nenek Aman kelihatan telah amat tenat.
　　　D.　Para doktor pakar telah pun melakukan pembedahan.

39.　Ayat yang menunjukkan fakta atau maklumat ialah: ----
　　　A.　Rumah pangsa ialah rumah yang paling sesuai bagi rakyat Singapura.
　　　B.　Kebanyakan rakyat Singapura tinggal di rumah pangsa.
　　　C.　Keadaan rumah pangsa amat selesa dan bersih.
　　　D.　Ramai di antara penghuni rumah pangsa yang gemarkan keadaan sekitarannya.

40.　Ayat yang menunjukkan fakta atau maklumat ialah: ----
　　　A.　Ubat gigi　Putih Berseri benar-benar menyerikan hidup anda.
　　　B.　Ia dibuat dari ramuan yang　paling segar dan terbaik
　　　C.　Ia di perakukan oleh pakar-pakar pergigian yang ternama.
　　　D.　Ubat gigi itu akan dijual di pasaran mulai bulan hadapan.

Arahan bagi soalan 41 hingga 45
Nyatakan samaada ayat-ayat di bawah ini adalah　pendapat,　fakta (atau maklumat sebenar),　fakta palsu　atau　kepercayaan lama.

Contoh 7
C7.　Barang-barang yang dijual di pasar Geylang amat murah harganya.
　A) pendapat　　　　　　　　B) fakta atau maklumat sebenar
　C) fakta palsu atau　　　　　D) kepercayaan lama
Jawapan yang betul ialah 'A'

Sekarang jawablah soalan-soalan yang berikut.

41.　Gadis yang suka menyanyi didapur akan mendapat suami yang tua.
　A) pendapat　　　　　　　B) fakta atau maklumat sebenar
　C) fakta palsu atau　　　　D) Kepercayaan lama

42.　Orang yang tidak mampu tidak patut membeli kereta.
　A) pendapat　　　　　　　B) fakta atau maklumat sebenar
　C) fakta palsu atau　　　　D) kepercayaan lama.

43.　Kuala lumpur ialah ibukota Malaysia, sementara Jakarta ialah ibukota Indonesia.
　A) pendapat　　　　　　　B) fakta atau maklumat sebenar
　C) fakta palsu atau　　　　D) kepercayaan lama

44.　Negeri-negeri di Asia Tenggara mempunyai empat musim.
　A) pendapat　　　　　　　B) fakta atau maklumat sebenar
　C) fakta palsu atau　　　　D) kepercayaan lama

45.　Jika hujan panas, renyai-renyai alamat ada orang besar yang meninggal.
　A) pendapat　　　　　　　B) fakta atau maklumat sebenar
　C) fakta palsu atau　　　　D) kepercayaan lama

Arahan bagi soalan 46 hingga 61
Bacalah cerita pertama dan kedua, kemudian jawab soalan yang mengikutinya.

Petikan 6
Cerita pertama:

Anak rusa itu berdiri tegak apabila mendengar bunyi sang singa melalui hutan tersebut. Warna bulu rusa itu sama dengan warna tumbuh-tumbuhan di sekelilingnya. Sang singa tidaklah dapat melihat adanya anak rusa itu.

Cerita kedua

Dalam masa perang askar-askar mengecat pakaian dan alat-alat perang seakan-akan warna tanah dan kawasan peperangan itu. Warna -warna itu sama dengan warna pokok, tanah dan langit atau awan di sekeliling mereka. Musuh tidak dapat melihat mereka di hutan itu.

46. Apakah persamaan yang didapati di antara kedua-dua cerita tadi?
   A. Kedua-dua menerangkan bagaimana warna boleh melindungi kita.
   B. Kedua-dua menceritakan tentang askar-askar yang mewarnakan pakaian mereka.
   C. Kedua-dua menceritakan tentang rusa dan sang singa.
   D. Kedua-dua menceritakan tentang kepentingan warna.

47. Apakah perbezaan di antara kedua-dua cerita tadi?
   A. Yang satu menerangkan tentang pakaian dan yang satu lagi tentang daun-daun.
   B. Yang satu menerangkan tentang warna dan yang satu lagi tentang tumbuh- tumbuhan.
   C. Yang satu menerangkan tentang binatang dan yang satu lagi tentang pokok-pokok
   D. Yang satu tentang binatang dan yang satu lagi tentang manusia.

48. Apakah maksud pengarang cerita pertama?
   A. cuba mempengaruhi pembaca supaya mengenali binatang.
   B. cuba menerangkan keadaan sambil menunjukkan kepandaiannya.
   C. cuba menyampaikan maklumat secara terus terang.
   D. cuba menarik perhatian pembaca.

Petikan 7
Cerita pertama

Pada zaman dahulu orang menggunakan kereta lembu untuk bergerak ke mana-mana. Walaupun kereta lembu tidak begitu laju, tetapi penumpangnya dapatlah berehat, tidak payah berjalan kaki. Sambil itu barang-barang yang berat seperti padi, kelapa dan buah-buahan dapat diangkut ke tempat-tempat yang jauh. Orang-orang dahulu sangat suka menaiki kereta lembu.

Cerita kedua

Masa kini keretapi gerak cepat sangat diperlukan untuk bergerak ke pusat-pusat bandar yang sesak. Ribuan manusia naik dengan cepat dan turun bergegas-gegas. Mereka hanya membawa diri, tujuan mereka hanya untuk sampai ke tempat yang dituju seberapa segera yang boleh. Kalau tidak ada keretapi gerak cepat pekerja-pekerja dibandar mungkin terlambat sampai di tempat kerja.

49. Apakah persamaan dalam kedua-dua cerita tadi?
   A. Kedua-duanya menceritakan tentang perlunya pengangkutan darat.
   B Kedua-duanya menceritakan tentang masa perjalanan menggunakan pengangkutan darat.
   C. Kedua-duanya menceritakan tentang penumpang atau orang yang menggunakakan kenderaan.

D. Kedua-duanya menceritakan tentang cara manusia bergerak dari satu tempat ke satu tempat yang lain.

50. Apakah kelainan di antara kedua-dua cerita tadi?

A. Yang satu menerangkan tentang barang-barang yang diangkut dan yang satu menerangkan tentang orang yang tidak membawa beg.

B. Yang satu menerangkan tentang kereta lembu dan yang satu menceritakan tentang keretapi gerak cepat.

C. Yang satu menerangkan tentang orang-orang di kota dan yang satu menerangkan tentang orang-orang bandaraya.

D. Yang satu menerangkan tentang pentingnya masa dan yang satu menerangkan tentang kurang berharganya masa.

51. Apakah tujuan pengarang cerita pertama?
A. Untuk menunjukkan kepentingan kereta lembu pada zaman dahulu.
B. Untuk menunjukkan bagaimana payahnya hidup di zaman dahulu.
C. Untuk menunjukkan cara orang dahulu bergerak dari satu tempat ke satu tempat.
D. Untuk menunjukkan cara orang dahulu mengangkut padi, kelapa dan buah-buahan.

52. Apakah tujuan pengarang cerita kedua?
A. Untuk menunjukkan bagaimana lajunya keretapi gerak cepat.
B. Untuk menunjukkan sikap penumpang zaman sekarang.
C. Untuk menunjukkan keselesaan penumpang naik keretapi gerak cepat.
D. Untuk menunjukkan perlunya keretapi gerak cepat.

53. Dari manakah cerita pertama tadi dipetik?
A. majallah hiburan
B. cerita kanak-kanak
C. rencana sains
D. rencana masyarakat

54. Dari manakah cerita kedua tadi dipetik?
A. majallah hiburan
B. cerita kanak-kanak
C. rencana sains
D. rencana masyarakat

Petikan 8

Cerita pertama

Pada suatu masa dahulu penyu laut mudah didapati berenang-renang dilaut. Pada masa kini sangat banyak penyu laut yang telah dibunuh untuk mengambil dagingnya, telur-telurnya, kulitnya dan minyaknya sehinggakan hanya sedikit sahaja penyu laut yang masih tinggal. Walaupun terdapat undang-undang untuk melindungi penyu laut, di setengah-tengah tempat banyak yang masih diburu dan banyak pula yang tertangkap di jaringan kapal-kapal nelayan. Sekarang ini, ramai pembela penyu yang berusaha untuk menyelamatkan penyu, dan melindungi telur-telur, sarang-sarang telur dan juga pantai-pantai istirihat penyu. Tanpa bantuan mereka penyu laut akan hapus dari muka bumi ini untuk selama-lamanya.

Cerita Kedua

Pada masa dahulu tinggal seekor penyu besar yang selalu menghabiskan masanya berenang-renang di Lautan Pasifik. Perlahan-lahan ia berenang dan memakan ikan-ikan kecil yang hidup di sekitar air dan tumbuh-tumbuhan laut di situ, kadang-kadang ia memamah udang-udang yang bermain-main disebalik batu karang di sempadan antara laut dan pantai. Penyu itu tinggal di laut, tetapi kadangkala ia berenang dipermukaan air, menyedut udara segar dan nyaman dan merasakan panasnya sinaran matahari.. Dia mengadah ke langit dan melihat matahari pada waktu siang dan bulan pada waktu malam, juga burung-burung yang berterbangan melintasi lautan luas. Kadangkala ia penat dan bosan berenang, betapa ingin ia untuk berehat di suatu pulau di tengah lautan itu.

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55. Apakah persamaan di antara kedua-dua cerita tadi?

    A Kedua-duanya menerangkan tentang seksanya hidup penyu di laut.
    B. Kedua-duanya menerangkan tentang kesukaan penyu di laut.
    C Kedua-duanya menerangkan perihal penyu.
    D. Kedua-duanya menerangkan makanan penyu.

56. Apakah perbezaan di antara kedua-dua cerita tadi?

    A. Yang satu menerangkan tentang kedudukan penyu yang hampir
        pupus, sementara yang satu lagi mengisahkan tentang cerita seekor
        penyu di Lautan Pasifik.
    B. Yang pertama menerangkan tentang kegunaan penyu sementara
        yang kedua mengisahkan tentang kehidupan penyu di Lautan Pasifik.
        C. Yang pertama nenerangkan tentang usaha menyelamatkan penyu
        sementara yang kedua mengisahkan tentang penderitaan seekor
        penyu.
    D. Yang pertama menerangkan keadaan penyu pada masa ini sementara
        yang kedua menerangkan tentang seekor penyu pada zaman dahulu.

57.   Apakah maksud penulis cerita pertama?
    A. untuk menceritakan kekejaman manusia terhadap penyu.
    B. untuk menceritakan tentang keistimewaan penyu pada masa kini.
    C. untuk menarik minat pembaca terhadap usaha menyelamatkan
        penyu.
    D. untuk menggesa pembaca supaya tidak membunuh penyu.

58.   Apakah maksud penulis cerita kedua?
    A. supaya pembaca merasa kasihan terhadap penyu.
    B. hanya menghibur pembaca dengan suatu kisah penyu.
    C. mengajar pembaca tentang kehidupan penyu di laut.
    D. tiada mempunyai maksud tertentu.

59. Dari manakah cerita pertama tadi dipetik?
    A. majallah hiburan   B. cerita kanak-kanak
    C. rencana sains   D. rencana masyarakat

58. Dari manakah cerita kedua tadi dipetik?
    A. majallah hiburan   B. cerita kanak-kanak
    C. rencana sains   D. rencana masyarakat

59. Cerita yang manakah yang kamu mungkin rujuk untuk membuat
    laporan sains tentang penyu keadaan penyu kini.
    A. cerita pertama sahaja   B. cerita kedua sahaja
    C. cerita pertama dan kedua   D. tidak gunakan kedua-duanya

Arahan untuk soalan 60 hingga 65.
Berdasarkan kepada petikan yang diberi, kamu dikehendakki menilai samada jawapan, sebab atau hujah-hujah yang diberi bagi sesuatu perkara itu kuat atau lemah.

Contoh 8

     Beberapa orang pelatih jururawat sebuah rumah sakit sedang membincangkan samada seseorang jururawat dibenarkan mempunyai kuku panjang. Mary berkata, "pada zaman ini seorang wanita yang berkuku pendek dipandang kolot atau tidak mengikuti zaman. Hamidah menyampuk, "rumah sakit tidak mempunyai hak untuk menentukan panjang pendeknya kuku para jururawatnya." Zola yang biasanya tidak begitu suka bercakap tiba-tiba mengemukakan pendapatnya, "memang elok jika jururawat tidak berkuku panjang , kerana ia membahayakan pesakit, bila kita hendak memandikan atau membalut pesakit yang cedera." Dengan cepat pula Kasmah menambah " ya, kuku pendek senang dibersihkan."

C9. Pendapat siapakah yang paling lemah?

A. pendapat Mary   *B. pendapat Hamidah*
C. pendapat Zola   *D. pendapat kasmah*

Jawapan yang betul ialah 'A' pendapat Mary.

Sekarang jawablah soalan-soalan berikut.

Petikan 9

"Patutkah pelajar-pelajar bekerja semasa cuti sekolah?" tanya ketua murid Sekolah Seri Kallang. "Kita semua bukan pelajar yang datang dari keluarga yang berada, pendapatan yang kita peroleh, sedikit sebanyak boleh membantu biaya persekolahan," Kamil mengeluarkan pendapatnya. "Lagipun, duduk di rumah sahaja semasa cuti
panjang sungguh membosankan, sekurang-kurangnya masa kita terisi dengan pekerjaan
yang berfaedah, Hasnah menyokong. "Tetapi jangan lupa, mereka yang bekerja mungkin akan melupakan buku dan pelajaran mereka, kata Sheila pula. Johnny pula membantah, "kita bukan budak-budak lagi, kita boleh buat apa yang kita suka." Perdebatan kemudian menjadi semakin hangat.

62.　　Pandangan siapakah yang paling lemah?
　　A. pandangan Kamil　　　　B. pandangan Hasnah
　　C. pandangan Sheila　　　　D. pandangan Johnny

Petikan 10

　　Harun telah gagal untuk menghantar jawapan rencana yang diminta oleh guru sejarahnya. Ia berfikir-fikir apakah sebab yang wajar untuk diberitahu kepada gurunya itu. Mula-mula ia berfikir, "aku boleh katakan yang aku terlupakan soalan rencana itu", kemudian ia berfikir pula, "boleh juga aku katakan yang aku telah membuatnya tetapi kertas itu hilang. Fikiran ketiga pula muncul, "aku katakan bahawa aku telah tolong hantarkan kawanku ke rumah sakit. Akhirnya ia berfikir, "baiklah aku berterus terang mengatakan yang aku telah tengok wayang ."

63.　　Hujah atau fikiran yang manakah yang paling kuat?

　　A. hujah mula-mula　　　　B. hujah kemudian atau kedua
　　C. hujah ketiga　　　　　　D. hujah akhir.

Petikan 11

Manis dan abang-abangnya adalah anak seorang yang kaya. Mereka sedang berbahas tentang baik buruknya mereka melancong keluar negeri pada cuti sekolah, dalam keadaan dunia sedang bergolak kerana peperangan di Teluk. "Tak bagus kalau kita pergi melancong, kita boleh diculik kapalterbang boleh kena bom," kata Manis. "Ya, jangan," kata Jais, "lebih baik kita gunakan wang itu untuk membeli barang-barang yang lebih berguna," . "Kita bukan hendak ke negara yang hampir dengan negari-negeri di Teluk, kita hendak ke Hongkong, kalau kita ke sana kita boleh beli macam-macam oleh-oleh," kata Yasin. Kemudian Abang Long pula mengeluarkan pendapat,"jauh berjalan banyak pengalaman, banyak perkara yang dapat kita pelajari dari melancong."

64.　　Hujah siapakah yang paling kuat?
　　A. hujah Manis　　　　　B. hujah Jais
　　C. hujah Yasin　　　　　D. hujah Abang Long

Petikan 12

Dalam satu perbahasan, pihak pembangkang telah menentang usul supaya pemerintah mengenakan pembayaran denda kepada anak-anak yang tidak mahu menjaga ibu bapa mereka. Pembangkang pertama mengemukakan pandangan bahawa pembayaran denda akan menyebabkan anak-anak merasakan bahawa perkara penjagaan ibu bapa sebagai satu paksaan, bukan sesuatu yang datang dari keinginan diri sendiri. Penyokong pertama telah pun menyampaikan hujah bahawa denda akan berkesan dalam mengurangkan bilangan anak-anak yang tidak menjaga ibu bapa mereka. Penyokong kedua kemudian berkata bahawa ini akan mengurangkan bilangan orang tua yang ditempatkan di rumah orang-orang tua. Pembangkang kedua pula membidas dengan berkata bahawa penjagaan ibu bapa di rumah orang-orang tua adalah lebih baik dari di rumah sendiri.

65. Hujah siapakah yang paling lemah?
    A. pembangkang pertama   B. pembangkang kedua
    C. penyokong pertama   D. penyokong kedua

=========================== terima kasih ===========================

APPENDIX 34
Malay Language Critical Reading Test

<u>Direction</u>: Do not open this book until you are told to do so.

This test is comprised of several passages. You are required to read the passages and then answer the questions that follow. Please <u>circle</u> the letters that you think is the right answer in the answer sheet provided. You are allowed to reread the passages as many times as you like. If you do not know the answer to any particular question, you can skip the question and come back to it later.

<u>Direction for questions 1 - 5</u>
Please choose the answer to the statements that folllow the given sentences. You are required to evaluate whether the conclusion or summary based on the sentences given is true, false or cannot be determined.

Example 1
If it is going to rain there will be black clouds. There is no black cloud. Therefore there will be no rain.
A. True   B. False   C. Cannot be determined
The right answer is 'C'

<u>Now please answer the following questions.</u>

Malik and Azman have ten arithmetic problems that they have to do.They started to do it at the same time, but Malik completed his sums fifteen minutes before Azman.

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1. Malik is cleverer than Azman.
   A. True   B. False   C. Cannot be determined

2. Azman gets more sums right than Malik.
   A. True   B. False   C. Cannot be determined

One of the pupils in Class 5B of Seri Taming School have become the champion of the Crossword Puzzle Competition of East Zone.

---

3. The teacher of class 5B is the best cross-word puzzle teacher in the East Zone.
   A. True   B. False   C. Cannot be determined

> Encik Wan and Encik Din went fishing together. Encik Wan obtained six fish while Encik Din got three only. Both of them used different types of bait or worms.

4. Encik Wan is a better fisherman than Encik Din.
   A. True   B. False   C. Cannot be determined

> The class teacher of Primary 4A kept record of pupils who did not bring books in April. Five pupils did not bring their composition books and ten pupils did not bring their reading books.

5. Pupils do not bring composition books more often in April than in other months.
   A. True   B. False   C. Cannot be determined

Direction for question 6 to 27.

Please answer the questions following the short passages. You are required to judge the interpretaions given in a critical way.

> Passage 1
>
> Ahmad was looking for his lost bicycle in that village. He knows that his friend, Kasim, a poor boy who always play truant, lives in the village. Children who plays truant are thieves. He looked towards the left and right of the streeet. Then, alas! strewn by the side of a dilapidated hut, he saw his bicycle.

6. Kassim lives in the dilapidated hut.
   A. Probably true   B. Probably false   C. Cannot be determined

7. That bicycle has been put in a hurried way.
   A. Probably true   B. Probably false   C. Cannot be determined

8. What is the phrase that is most biased towards Kassim.
   A. his friend   B. poor boy
   C always plays truant   D. strewn.

Passage 2

Nora wants to score high marks in her spelling test on Friday. Spelling is very difficult. In the past she gets rather low marks. Nora's mother said,"Why don't you learn bit by bit everyday, rather than learning all the words once and all on Thurday night?" Every night in that week Nora learnt her spelling. On Friday she scored high marks for the test.

9. From that day onwards Nora will no longer accumulate her school work until the last moment..
   A. Probably true   B. Probably false   C. Cannot be determined

10. Children who learn bit by bit every day will not become clever.
    A. Probably true   B. Probably false   C. Cannot be determined

11. What did the author wish to show?
    A. How conscientious Nora is in her studies.
    B. Learning bit by bit will make one clever.
    C Listening to your mother will benefit you.
    D. Don't wait till the last moment before studying.

12. Which one is an opinion?
    A. Spelling is very difficult.
    B. Nora wants to get high marks.
    C Nora learns her spelling bit by bit daily.
    D. On Friday she scored high marks.

Passage 3

Pak Mat and his son Adam had become the champion of the Top Competition which was held as the finale of the Cultural Month Festival. Their tops had been judged as the most beautiful and sported the most elegant spining. They had built the winning top from the mangrove wood which was obtained from the back of their house. The head of the top was carved into the shape of a dragon, while its body was painted in red and white stripes. Both of them expressed   their surprise at winning the competition.

13. The best tops are made of mangroove wood.
    A. Probably true   B. Probably false   C. Cannot be determined

14. The public love to watch the top competition.
    A. Probably true   B. Probably false   C. Cannot be determined

15. The top that belongs to Pak Mat and Adam is the most beautiful one.
    A. Probably true   B. Probably false   C. Cannot be determined

16. The motive of the author is
    A. to relate the method used by Pak Mat and Adam to make tops.
    B. to relate about the top competition which is the grand finale.
    C to relate how Pak Mat and Adam won the competition.
    D. to publicise Pak Mat and Adam as makers of tops.

17. The above passage is probably a
    A. a true story   B   A fiction (short story)
    C a newspaper report   D. A diary

Passage 4

This morning I together with Misah and Janah, my friends from the religious school went from house to house to collect donations in the form of money and clothings for the flood victims at Selasih Village. After going to wo houses we could not bear the burden of carrying the clothes and other essentials that the people had donated. Misah in a thick-skinned manner, asked the lazy male students to give us a hand. With an open heart, they too followed our rounds. We manage to collect a lot of money, clothings and house utensils. Our pain had not been in vain.

---

18. The money and the clothings will be given to the victims of the flood.
    A. Probably true   B. Probably false   C. Cannot be determined

19. The girls had been shy to ask the help of the boys.
    A. Probably true   B. Probably false   C. Cannot be determined

20. Together the girls and the boys who worked in cooperation, had obtained more donations than if they they had ventured separately.
    A. Probably true   B. Probably false   C. Cannot be determined

21. If the girls had not asked, the boys would not have helped.
    A. Probably true   B. Probably false   C. Cannot be determined

22. All the students of religious schools are good-hearted.
    A. Probably true   B. Probably false   C. Cannot be determined

23. The above passage is probably a
    A. fiction   B. true story
    C newspaper report   D. diary

23. The motive of the writer is
    A. to relate how he or she had collected the donation.
    B. to show that he or she likes to help people
    C to relate his or her experience in collecting donations.
    D. to relate the laziness of the boys.

Passage 5

The cave-dwellers then knew how to start a fire in front of the caves during the night. They could see the light shining inside theeyes of the wild animals who prowled there during nightfall. They will know when danger is looming as long as the fire is still burning.

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24. Many of the people in the cave were saved by the fire which was outside of the cave.
    A. True   B. False   C Cannot be determined

25. Many wild animals jumped over the fire and killed the people in the cave.
    A. True   B. False   C Cannot be determined

26. The writer of the passage
    A. related the story of the ancient people.
    B. told the story about the wild animals who ate human beings.
    C related about the use of fire to cave-dwellers of ancient times.
    D. related about the stupidity of ancient people.

27. The above passage is probably a
    A. fiction   B. true story
    C newspaper report   C diary

Directions for Question 28 to 30.
Circle the words where the writer is not using exaggerated elements.

Example 3

   The car by the label name PURNAMA is the most magnificient in Asia. It is admired by those who value the best quality.
   A. admired   B. best   C. magnificient   D. value
The correct answer is D which is value.

Now please answer the following questions by circling the words which is not an exaggeration.

28. Television is ' much sought after 'adulated as a form of adored public entertainment, as an educational media or as pure entertainment.
   A. entertainment
   C admired
   B. adored
   D. public

29. Many of the very generous sponsors had given thousands of dollars to sponsor captivating TV programmes. This glued the audience to their TV screens when their favourite programmes are on telecast.
   A. favourite
   C glued
   B. very
   D. sponsor

30. The enchanted actress, Nani had captured millions of fans as a result of her brilliance in potraying the character of a modern women.
   A. acted
   C millions
   B. enchanted
   D. cleverness

Directions for Question 31 to 33.
   From a group of four sentences below, choose the sentence which is biased or one-sided or that tries to influence the readers

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Example 4
A   *A poor student had managed to obtain a scholarship.*
B. *The student expressed his thanks to Kampung Pasir Association.*
C. *If Kampung Pasir Association had not come to his assisstance, Rahim would not have been able to continue his studies.*
D. *The Kampung Pasir Association had awarded a scholarship worth 3000 dollars a year.*

The biassed sentence is   C.
The correct answer is   C

Now please answer the following questions

. A. One of the behaviour that is encouraged is reading story books.
   B. It is time that we put aside those ancient out-dated stories.
   C The classic stories always relate about life in the palaces.
   D. Science fiction and mystery novels are the favourites of pupils in the primary and secondary schools.

31. The sentence which is biased is ....

A. A wise person will not be wasting his time at the shopping centres.

B. The shopping centres have been the centre of free-mixing among young males and females.

C The youths shop at big stores which offer the most modern up-to-date fashionable clothes.

D. The fast-food restaurants such as Mac Donald had become the centre of attraction to these youths..

32. The biased sentence is ....

A. An armed robbery had been commited by three young males who sported long hair.

B. They had injured the owner of the shop and killed his wife who evidently had screamed.

C Cash of about twenty-thousand dollars and all jewelery had been taken away.

D. Everyone is reminded to beware of young males who sported long hair.

33. The biased sentence is ....

Directions for Question 34 to 37.

For the sentences given in the box below, find the hidden assumptions or hidden ideas behind the sentence. Please regard all the ideas in the sentence as true.

Example 5
The clerk in the post-office will not serve those who did not queue to buy stamps.
. The hidden assumption behing the sentence is ....

A *People who wish to buy stamps at the post office must queue.*
B. *The post-office clerk is a proud person.*
C. *The post-office clerk is a person who does not favour anybody.*
D. *Those who queue up will be served well.*

The correct answer is A.

Now, please answer the following questions, by choosing the best one that describes the hidden assumption.

The jeans under the label 'Rust' is better than the jeans labelled 'Brush'because it is more expensive.

34. The hidden assumption is ....
   A. The jeans 'Rust' are made of better materials.
   B. The more expensive a pair of jeans are the, the better the quality.
   C The jeans 'Rust' are made of inferior materials.
   D. Jeans are better if their price is more expensive.

Faridah is a clever girl as she does not challenge the words of her teachers.

35. The hidden assumption behind the sentence is ....
   A. Faridah becomes clever when she follows the commands of her teachers.
   B. All pupils who are clever do not challenge their teachers.
   C Only those who are stupid will challenge their teachers.
   D. Most of the pupils who are clever will not challenge their teachers.

One good way to lessen the cases of car burglary is to install a car alarm.

36. The hidden assumption behind the above sentence is:
   A. A heavy punishment for car burglars will lessen car burglary
   B. Burglars will not dare to steal cars fixed with the alarm.
   C The key will only make a sound when the burglar enters the car.
   D. The 'ringing key' gadget is an effective way to prevent cars being stolen.

Mr. Marzuki, a lawyer of high moral character.would not have commited the burglary.

37. The hidden assumption behind the sentence is:
   A. Mr. Marzuki had never commited a crime such as burglary.
   B. There is no evidence to show that Mr Marzuki had committed the crime.
   C A lawyer is a good person and as such will not commit a crime such as burglary.
   D. Mr. Marzuki is not a man of high principle if he committed the burglary.

Directions for Question 38 to 40.

Choose the best sentence that shows an opinion or a factual information from the group of four sentences below.

Example 6

C7. The sentence that shows an opinion is:
A. The population of Singapore is nearly three million.
B. Singaporeans are people who worked hard to enhance their economy.
C. Women is also encouraged to work.
D. The country's productivity increased year by year.

The correct answer is B

Now, please answer the following questions

---

38. The sentence which shows an opinion is:

A. Many of the relatives visited Aman's grandmother in the hospital.
B. Aman's grandmother suffered from cancer of the intestine.
C. The condition of Aman's grandmother seems very critical.
D. The specialist surgeon had already performed the operation.

---

39. The sentence that shows a factual information is:

A. A high-rise flat is the type of housing suitable for Singaporeans.
B. Most Singaporeans live in flats.
C. The condition of the flats is cosy and clean.
D. Many of the residents love the flat environment

---

40. The sentence that shows a factual information is:

A. The toothpaste Sparkling White really brightens your life.
B. It is made of fresh ingredients of very high quality.
C. It is recommended by well-known dental specialists.
D. The tooth-paste will be on the market next month.

Directions for Question 41 to 45.

Please state whether the sentence given below is an opinion, a true fact a false fact or a superstition.

> *Example 7*
> C8.   *The things sold in Geylang Market is very cheap.*
>   A. *an opinion*   B. *a true fact*
>   C. *a false fact*   D. *a superstition*
> *The correct answer is A.*

Now, please answer the following questions in the same way.

41.   A maiden who likes to sing in the kitchen will marry an old man.
   A. an opinion   B. true
   C false   D. a superstition

42. A person who could't afford should not own a car.
   A. an opinion   B. true
   C false   D. a superstition

43. Kuala Lumpur is the capital of Malaysia, while Jakarta is the capital of Indonesia.
   A. an opinion   B. true
   C false   D. a superstition

44. The countries of South-east Asia have four seasons.
   A. an opinion   B. true
       C false   D. a superstition

45. A midday light shower signifies that a important man had passed away.
   A. an opinion   B. true
       C false   D. a superstition

Directions for Question 46 to 61.
   Please read the first and second story below, and then answer the questions that follow.

> Passage 6
> First story
> The calf stood upright when it heard the sounds of the passing lion in the forest. The colour of its fur is similar to the colours of plants surrounding it. The lion will not be able to see the calf
> Second story
> During the war the soldiers painted their uniforms and their war materials like the colours of the earth and the surroundingforest. The colours are similar to the colours of the trees, the earth and the skies surrounding them. The enemies will not be able to see them in such forest.

46. What are the <u>similarities</u> between the two stories?
   A. Both stories tell us about how colours can be used for protection.
   B. Both stories tell us abourt the soldiers who painted their uniforms.
   C Both stories tell us about the dow and the lion.
   D. Both stories tell us about the importance of colour.

47. What are the <u>differences</u> between the two stories?
   A. One tell us about clothes while the other tell us about leaves.
   B. One tell us about colours while the other tell us about plants.
   C One tell us about animals while the other tell us about plants.
   D. One tell us about animals while the other tell us about humans.

48. What is the <u>motive</u> of the first author?
   A. He tried to influence the reader to undertand about animals.
   B. He tried to explain the situation and the same time to show his wisdom.
   C He tried to offer facts in a clear way.
   D. He tried to get the readers' attention.

<u>Passage 7</u>
<u>First Story</u>
In the olden days people used the bullock-cart to move from oneplace to another. Even though it is not fast moving, but the passengers were able to relax and do not have to walk.a long way.At the same time they could transport heavy goods such as coconuts,and fruits to far-away places. These olden days people love to travel by bullock-carts.
<u>Second Story</u>
Presently, the mass rapid trains is a neccesity in order for one to travel towards the compact city-centre Thousands of people get into the trains as fast as they could and then alight at their destination in the same brisk manner. Without this mass-rapid transport, employees in the city will be late for work.

---

49. What are the <u>similarities</u> between the two stories?
   A. Both tell about the importance of land transport.
   B. Both tell about the travel time of land transport.
   C Both tell about the passengers of land transport.
   D. Both tell about how people travel from place to place.

50. What are the <u>differences</u> between the two stories?
   A. One tells about the things that are transported, and the other tells about people who doesn't carry any luggage.
   B. One tells about the bullock-cart and the other about the mass-rapid trains.

C One tells about people in the city and the other about people in the towns.

D. One telss about the importance of time and the other about the little value placed on time.

51. What is the _motive_ of the author of the _first_ story?
A. to show the importance of bullock-carts of the olden days.
B. to show the difficulties faced by people in the olden days.
C to show how people in the olden days travel from one place to another.
D. to show how people in the olden days transport padi and fruits.

52. What is the _motive_ of the author of the _second_ story?
A. to show about the fast speed of the mass-rapid trains.
B. to show about the attitude of the present-day passengers.
C to show the comport experienced by the passengers of mass-rapid trains
D. to show the indispensibility of mass rapid trains.

53. From what source was the first story taken?
A. light entertainment magazine   B.   children's story book
C science textbook   D   general article

54. From what source was the second story taken?
A. light entertainment magazine   B.   children's story book
C science textbook   D   general article

Passage 8
First story
Once upon a time it was easy to find sea turtles swimming in the sea. , but now many of the sea turtles have been killed for their meat, their eggs, their skin and their oil, such that only very few sea turtles are left. Even though there are laws to protect the seaturtles, in some places many had been hunted and caught in the nets of fisherman. At present, many of the turtle-protectors put their effort to save the turtles, to protect their eggs, their breeding grounds and the beaches where they used to relax.Without their effort these sea turtles will be extinct forever.
Second Story
In the old days there was a big turtle who liked to spend his time swimming in the Pacific Ocean. Slowly, he would munch the sea-plants and the small fish that lived in the surrounding water ,sometimes he would chew the prawns that used to play behind the rocks that acted as a boundary between the beaches and the deep sea. That turtle lived in the sea, but sometimes he swam to thesurface of the water to breathe in the fresh air and to feel the heat of the sun at his skin. He watched the sky during the day and the moon during the night, he also watched the birds flying across the ocean. Sometimes he felt bored and tired of swimming, how he wished he could relax at in island at the centre of the ocean.

55. What are the similarities between the two stories?
   A Both tell about the difficulties of the turtle in the sea.
   B. Both tell about what turtles like.
   C Both tels about turtles.
   D. Both tell about the food turtles eat.

56. What are the differences between the two stories?
   A. One tells about the condition of turtles which are nearly extinct and the other tells the story of a turtle in the Pacific Ocean.
   B. One tells about the uses of the turtles while the other tells about the life of turtles in the ocean..
   C The first one tells about the effort to save the turtles, and the other tells about the sufferings of a turtle.
   D. The first one tells about the condition of turtles ay present, and the second about a turtle who lives long ago.

57. What is the motive of the writer of the first story?
   A. to relate about human cruelty towards turtles.
   B. to tell about the special condition of the turtles at that time.
   C   to get the readers attention on the efforts to save the turtles.
   D. to beg to the reader not to kill turtles.

58. What is the <u>motive</u> of the writer of the <u>second story</u>?
    A. to get the readers to sympathise with the turtles.
    B. to entertain the readers with a story about a turtle.
    C to instruct the readers about the life of the turtle.
    D. did not have any aim in particular.

59. From what <u>source</u> was the <u>first</u> story taken?
    A. light entertainment magazine   B.   children's story book
    C science textbook   D.   general article

60. From what <u>source</u> was the <u>second</u> story taken?
    A. light entertainment magazine   B.   children's story book
    C science textbook   D. general article

61. Which story would you refer to if you are writing a scientific type of composition about a turtle.
    A. the first story only   B. the second story only
    C both stories   D. none of the stories.

<u>Direction for Question 62 to 65</u>
    <u>Based on the passages given, you are required to assess whether the answers, the arguments presented are weak or strong.</u>

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Passage 9
Example 8
Several trainee nurses in a hospital were discussing whether nurses should be allowed to have long finger-nails. Mary said,"during this era a woman who has short-finger-nails will be labelledas old-fashioned and do not follow changes of the times." Hamidahthen interrupted, "the hospital has no right to determine the lengths of nurses' fingernails." Zola who is usually quiet, suddenly offered her opinion, "it is appropiate that nurses should have short finger-nails as long finger-nails will endanger the patients whenwe bathe or bandage them." Immediately Kasmah added, "yes, short finger-nails are easy to clean."

C9   Whose argument is the <u>weakest</u>
A.   Mary's argument   B. Hamidah's argument
C   Zola's argument   D. Kasmah's argument
The correct answer is <u>A. Mary's opinion</u>

</div>

<u>Now, please answer the following questions.</u>

Passage 9

"Should students work during the long vacation?" asked the head prefect of Seri Kallang School. "All of us do not come from a rich families, the income that we received, in a way could be used to support our school expenses," Kamil then expressed his opinion. "Furthermore we will be bored if we stay at home too longwe might as well fill in our time with beneficial work.." Hasnah voiced her agreement. "But don't forget that, there is a possibilitythat those who work might neglect their books and their lessons, said Sheila. Then Johnny disagreed, "we are not children, we are free to do what we like," The discussion then became more heated.

62. Whose argument is the weakest?
   A. Kamil's's argument
   C Sheila's argument
   B. Hasnah's argument
   D. Johnny's argument

Passage 10

Harun had failed to submit the essay requested by his history teacher. He was thinking of a plausible reason to give to the teacher. At first he thought, "I can say that I had forgotten about the essay question." Later he had second thoughts, "I can also explain that I have done the essay but it had been lost." His third thought emerged, "it is better for me to tell the truth that I had been going to the movies." Finally he argued " I can say that I have helped to send my friend to the hospital" I can say that I have helped to send my friend to the hospital." Finally he said to himself, "it is better for me to tell the truth that I had been going to the movies."

63. Which argument is the strongest?
   A. the first argument
   C the third argument
   B. Hasnah's argument
   D. Johnny's argument

Passage 11

Manis and her brothers come from a well-to-do family. They were debating about the pros and cons of going for a holiday overseas during the school vacation, when the world was still raging with the Gulf War . "It is not good to go for a tour, we could be captured and the plane could be bombed," said Manis. "Yes, don't go, added Jais, "it is better for us to use the money for other purpose, like buying useful things." "We won't be going near to the Gulf area, we could go to Hongkong; if we go there, we could buy a lot of souveniors," Yasin chipped in.. The eldest brother Long expressed his opinion, "when we travel we get lots of new experiences, we could learn so many things from our travels."

64. Which argument is the strongest?
   A. Manis's argument   B. Jais's argument
   C Yasin's argument   D. Long's argument

Passage 12

In a debate, the opposition members were opposing the proposal that the government should impose fines on children who failed to support their own parents. The first opposition put forward the idea that the payment of fines would induce the children to feel that the provision for parents is something forced on them, not something which they should realize on their own accord. The first proposer had already expressed his argument that fines will be effective in reducing the number of children who had neglected their own parents. The second proposer then argued that this would also reduce the number of old people who would be placed in homes for aged. The second opposition then argued that the well-being of the aged are better served in the homes for the aged rather than in their own houses.

65. Whose argument is the weakest?
   A. the first opposition   B. the second opposition
   C. the first proposer   D. the second proposer.

APPENDIX 35
Correct Answer for R-MLCRT

1. A B <u>C</u>	2. A B <u>C</u>	3. A B <u>C</u> D	4. A B <u>C</u>
5. A B <u>C</u>	6. A B <u>C</u>	7. A B <u>C</u>	8. A B <u>C</u> D
9. A B <u>C</u> D	10. A <u>B</u> C D	11. A B C <u>D</u>	12. <u>A</u> B C D
13. A B <u>C</u> D	14. A B <u>C</u>	15. <u>A</u> B C D	16. A B <u>C</u> D
17. A B <u>C</u> D	18. <u>A</u> B C D	19. <u>A</u> B C D	20. <u>A</u> B C D
21. A B <u>C</u>	22. A B <u>C</u> D	23. A B <u>C</u> D	24. <u>A</u> B C D
25. A B <u>C</u>	26. A B <u>C</u> D	27. <u>A</u> B C D	28. <u>A</u> B C D
29. A B C <u>D</u>	30. <u>A</u> B C D	31. A <u>B</u> C D	32. <u>A</u> B C D
33. A B C <u>D</u>	34. A <u>B</u> C D	35. A B C <u>D</u>	36. A B C <u>D</u>
37. A B <u>C</u> D	38. A B <u>C</u> D	39. A <u>B</u> C D	40. A B C <u>D</u>
41. A B C <u>D</u>	42. <u>A</u> B C D	43. A <u>B</u> C D	44. A B <u>C</u> D
45. A B C <u>D</u>	46. <u>A</u> B C D	47. A B C **D**	48. A B <u>C</u> D
49. A B C <u>D</u>	50. A <u>B</u> C D	51. A B <u>C</u> D	52. A B C <u>D</u>
53. A B C <u>D</u>	54. A B C <u>D</u>	55. A B <u>C</u> D	56. <u>A</u> B C D
57. A B <u>C</u> D	58. A <u>B</u> C D	59. A B <u>C</u> D	60. A <u>B</u> C D
61. <u>A</u> B C D	62. A B C <u>D</u>	63. A B C <u>D</u>	65. A B C <u>D</u>
65. A <u>B</u> C D			

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<u>Appendix 36</u>
<u>Item Analysis of RMLCRT Scale</u>

<u>Item Analysis of Subskill A: 'The Ability To Evaluate Inductive Inferences'</u>

Item No	Frequency Correct	Standard Deviation	Facility Indices	Biserial Correlation.	Correlation to Subscale
1	851	.50	.59	.14**	.42**
2	1150	.46	.80	.20**	.39**
4	657	.49	.46	.15**	.37**
5	935	.50	.65	.20**	.41**
6	560	.47	.39	.13**	.37**
7	623	.49	.43	.15**	.32**
15	1154	.46	.80	.26**	.36**
18	1280	.42	.89	.27**	.35**
19	767	.50	.53	.21**	.34**
20	891	.50	.62	.16**	.33**

<u>Item Analysis of Subskill B :</u>
<u>'The Ability To Evaluate The Soundness Of Generalizations'</u>

Item No	Frequency Correct	Standard Deviation	Facility Indices	Biseral Correlation	Correlation to Subscale
3	739	.50	.51	.12**	.38**
9	565	.48	.39	.24**	.40**
10	917	.50	.64	.19**	.29**
13	490	.46	.34	.10**	.43**
14	712	.50	.49	.19**	.45**
21	704	.50	.49	.21**	.49**
24	830	.50	.57	.22**	.21**
25	591	.48	.41	.14**	.37**

<u>Subskill C: The Ability To Recognize Hidden Assumptions</u>

Item No	Frequency Correct	Standard Deviation	Facility Indices	Biserial Correlation	Correlation to Subscale
34	658	.49	.46	.22**	.58**
35	301	.39	.21	.15**	.40**
36	535	.47	.37	.25**	.51**
37	550	.47	.38	.20**	.52**

Subskill D: The Ability to Recognise Bias in Statements

Item No	Frequency Correct	Standard Deviation	Facility Indices	Biserial Correlation	Correlation to Subscale
8	1059	.48	.73	.23**	.29**
28	574	.48	.40	.20**	.48**
29	531	.47	.37	.20**	.55**
30	527	.47	.37	.20**	.53**
31	917	.50	.64	.30**	.42**
32	585	.46	.34	.13**	.38**
33	915	.50	.63	.36**	.46**

Subskill E: The Ability To Recognise Factual Values and Opinion

Item No	Frequency Correct	Standard Deviation	Facility Indices	Biserial Correlation	Correlation to Subscale
12	362	.42	.25	.21**	.41**
38	591	.48	.41	.28**	.47**
39	752	.50	.52	.29**	.49**
40	424	.44	.29	.19**	.39**
41	1088	.47	.75	.43**	.61**
42	724	.50	.50	.31**	.52**
43	1148	.46	.80	.42**	.62**
44	842	.50	.58	.40**	.52**
45	1001	.50	.69	.43**	.61**

Subskill F: The Ability To Recognize Author's Motives

Item No	Frequency Correct	Standard Deviation	Facility Indices	Biserial Correlation	Correlation to Subscale
11	613	.49	.61	.23**	.44**
16	858	.50	.59	.22**	.42**
23	462	.45	.32	.19**	.41**
26	1164	.46	.81	.34**	.43**
48	491	.46	.34	.20**	.37**
51	604	.48	.42	.18**	.34**
52	612	.48	.42	.35**	.44**
57	453	.45	.31	.18**	.42**
58	574	.48	.40	.26**	.40**

Subskill G: The Abil'ty To Identify Sources And Types Of Written Materials.

Item No	Frequency Correct	Standard Deviation	Facility Indices	Biserial Correlation	Correlation to Subscale
17	664	.49	.46	.18**	.38**
22	299	.39	.21	.24**	.37**
27	244	.36	.64	.21**	.39**
53	860	.50	.60	.34**	.56**
54	852	.50	.59	.44**	.59**
59	651	.50	.45	.19**	.45**
60	707	.50	.49	.39**	.53**
61	677	.49	.47	.38**	.56**

Subskill H: The Ability To Recognize Similarities And Differences.

Item No	Frequency Correct	Standard Deviation	Facility Indices	Biserial Correlation	Correlation to Subscale
46	972	.49	.67	.39**	.63**
47	1027	.48	.71	.46**	.67**
49	482	.46	.33	.17**	.42**
50	930	.50	.64	.31**	.60**
55	942	.50	.65	.48**	.68**
56	828	.50	.57	.42**	.64**

Subskill J: The Ability To Evaluate The Strengths Of Arguments.

Item No	Frequency Correct	Standard Dev'ation	Facility Indices	Biserial Correlation	Correlation to Subscale
62	702	.50	.49	.41**	.69**
63	736	.50	.51	.35**	.68**
64	741	.50	.51	.36**	.73**
65	484	.46	.33	.17**	.55**

Appendix37

Item Responses of MLCRT by the Malay Language Experts

Item Number	Freq. Correct	Freq. Incorrect	Item Number	Freq. Correct	Freq. Incorrect
1	6	2	2	5	3
3	6	2	4	6	2
5	5	3	6	6	2
7	8	0	8	7	1
9	7	1	10	7	1
11	5	3	12	6	2
13	6	2	14	4	4
15	4	4	15	4	4
17	5	3	18	7	1
19	4	4	20	7	1
21	6	2	22	7	1
23	4	4	24	3	5
25	5	3	26	7	1
27	6	2	28	5	3
29	8	0	30	6	2
31	7	1	32	3	5
33	5	3	34	5	3
35	6	2	36	6	2
37	4	4	38	8	0
39	6	2	40	8	0
41	7	1	42	7	1
43	5	3	44	7	1
45	8	0	46	5	3
47	5	3	48	6	2
49	4	4	50	4	4
51	5	3	52	4	4
53	6	2	54	4	4
55	8	0	56	5	3
57	6	2	58	8	0
59	5	3	60	8	0
61	8	0	62	8	0
63	7	1	64	8	0
65	4	4	66	4	4
67	7	1	68	5	3
69	6	2	70	6	2
71	8	0	72	8	0
73	7	1	74	8	0
75	6	2	76	5	4
77	4	4	78	7	1
79	8	0	80	4	4
81	6	2	82	5	3

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APPENDIX 38

Point Biserial Correlations of RMLCRT Items

1	.14**		
2	.20**	3	.12**
4	.15**	5	.20**
6	.13**	7	.15**
8	.23**	9	.24**
10	.19**	11	.23**
12	.21**	13	.10**
14	.19**	15	.26**
16	.22**	17	.18**
18	.27**	19	.21**
20	.16**	21	.21**
22	.24**	23	.19**
24	.22**	25	.14**
26	.34**	27	.21**
28	.20**	29	.20**
30	.20**	31	.30**
32	.13**	33	.36**
34	.22**	35	.15**
36	.25**	37	.20**
38	.28**	39	.29**
40	.19**	41	.43**
42	.31**	43	.42**
44	.40**	45	.43**
46	.39**	47	.46**
48	.20**	49	.17**
50	.31**	51	.18**
52	.35**	53	.34**
54	.44**	55	.48**
56	.42**	57	.18**
58	.26**	59	.19**
60	.39**	61	.38**
62	.41**	63	.35**
64	.36**	65	

** P less than .001

Summary of Intercorrelations between Critical Reading and Selected Variables.

	RMLCRT	Sex	Age	Medn	GA	ML	EL	Comp	CTDI	Gred	Strm	Bil
RMLCRT	1	-.23*	.12*	.10*	.54*	.22*	.36*	.47*	.18*	.24*	-.44*	.09
Sex		1.00	-.11*	.00	-.16*	-.16*	-.17*	-.20*	-.11*	-.04	.13*	.14*
Age			1.00	.17*	-.06	-.02	-.09	-.10	.09	.82*	.11*	.01
Medn				1.00	.17*	-.06	.23*	-.05	.07	-.05	-.18*	.25*
GA					1.00	.39*	.70*	.33*	.17*	.09	-.76	.11*
ML						1.00	.22*	.29*	.06	-.08	-.24*	-.08*
EL							1.00	.17*	.15*	.07	-.51*	.27*
Comp								1.00	.09	.28*	-.27*	.15*
CTDI									1.00	.11*	.12*	.15*
Gred										1.00	.03	.03
Strm											1.00	.11*

* significant beyond .01

KEY
1. CR -Critical Reading   2. Sex   3. - Age   4. Medn-mother' education   5. GA -general ability
6. ML - Malay Language   7. EL -English language   8. Comp - comprehension
9. CTDI - Critical thinking   10. Gred -Grade level   11. Strm- stream   12. Bil - Bilingual background

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Appendix 40
Distribution of CTDI Keyed Responses

CTDI Items	Response 'A'	Response 'B'	Response 'C'	Response 'D'
CTD 1	2.7	49.9	34.4	13 2
CTD 2	7.7	43.9	37.2	11.1
CTD 3	14.7	44.0	32.2	9 0
CTD 4	3.7	40.9	39.5	15 9
CTD 5	10.5	47.9	32.4	9.1
CTD 6	9.7	45.5	33.7	11.5
CTD 7	14.5	50.5	28.3	6.7
CTD 8	13.4	49.9	29.7	7.0
CTD 9	7.6	47.8	35.3	9.4
CTD 10	8.5	61.2	25.5	4 8
CTD 11	7.3	44.8	38.6	9.3
CTD 12	10.4	38.8	38.0	12.9
CTD 13	15.1	52.2	24.7	7.3
CTD 14	6.6	43.9	39.0	10.4
Ctd 15	24.3	45.3	23.5	6.8
CTD 16	11.9	62.9	19.2	6.0
CTD 17	12.4	63.7	19.4	4.5
CTD 18	6.2	50.7	32.7	10.4
CTD 19	10.0	59.6	23.0	7.4
CTD 20	10.1	59.3	23.8	6.8
CTD 21	20.3	50.7	23.8	5.2
CTD 22	8.5	41.2	38.7	11.6
CTD 23	18.9	54.0	19.3	7.7
CTD 24	13.6	49.2	27.9	9.3
CTD 25	11.1	52.8	27.6	8.4
CTD 26	4.6	42.8	37.9	14.7
CTD 27	10.4	43.3	32.8	13.5
CTD 28	20.8	47.0	23.8	8.4
CTD 29	3.9	24.1	46.2	25 8
CTD 30	6.5	44.1	36.0	13 3
CTD 31	10.8	49.9	28.5	10 8
CTD 32	13.2	54.7	24.5	7.6
CTD 33	11.0	52.1	29.0	7 8
CTD 34	12.2	54.2	26.6	7.0
CTD 35	12.0	58.0	23.7	6.3
CTD 36	11.5	56.4	25.7	6.3
CTD 37	9.8	51.9	29.8	8 6
CTD 38	16 0	59 2	18 4	6 4