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**MULTIPLE OUTCOMES AND MULTIPLE CLIENT PERSPECTIVES  
IN THE EVALUATION OF PROJECT IMPACT:  
A TWO-YEAR TRACER STUDY**

A project sponsored by

**The Southeast Asian Ministers of Education Organization  
Regional Center for Educational Innovations  
and Technology (INNOTECH)**

and funded by the

**International Development Research Center  
(IDRC)**

**ROSETTA FERNANDEZ MANTE**

**September 1981**

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And now that the rush is over,  
I am going to give myself a nervous breakdown  
I worked for it,  
I owe it to myself  
I will not be deprived of it.

ROSETTA FERNANDEZ MANTE

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## CHAPTER I

### INTRODUCTION

#### I. PROJECT IMPACT<sup>1</sup>

Project IMPACT is an acronym for Instructional Management by Parents, Community and Teachers. It is a learning management system for the delivery of mass primary education. Its criteria are efficiency, economy and mass delivery. Designed by educational leaders of the Southeast Asian Ministers of Education Organization (SEAMEO) it is a solution to the problems that have continuously nagged the educational sector, namely: (1) the high percentage of dropouts among the youths even before they have completed the primary cycle, (2) the inability of the governments to provide adequate classrooms, books and learning facilities due to the dwindling treasuries amidst an ever-increasing school population, and (3) the obvious irrelevance of the existing traditional educational system which has been patterned after the colonizer country's educational system, to the goals, needs and resources of developing independent countries.

Launched in January 1974 by SEAMEO's Regional Center

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<sup>1</sup>A more comprehensive presentation of Project IMPACT in its historical perspective is found in Pedro Flores' book entitled EDUCATIONAL INNOVATION IN THE PHILIPPINES: A CASE STUDY OF PROJECT IMPACT., published by International Development Research Center in Ottawa, Canada, in 1981.

for Educational Innovation and Technology (INNOTECH) in cooperation with the Philippine Ministry of Education and Culture, the project underwent developmental research activities in five agricultural rural villages in Naga, Cebu for a period of five-and-a half years. The sites were so chosen because 70% of the population in developing countries live in rural areas.

After three years of field try-out and development, INNOTECH initiated replication activities in two semi-urban sites where the socioeconomic conditions were rather different from those in the original site. The purpose of the replication was to obtain more empirical data on the feasibility, manageability and practicality of the system that was developed in the Naga site.

The model evolved in the Philippine site has the following basic features:

1. The Curriculum Used: A given in the development of the IMPACT Learning Management System is the curriculum prescribed by the Ministry of Education and Culture, the same curriculum used all over the country. Using the statement of goals and objectives by subject areas and grade levels, an integrated continuum was evolved, thus doing away with the characteristic features of subject boundaries and grade levels

and producing a single line continuum. The continuum is so sequenced that the first learning priorities are directed at the mastery of basic literacy skills in the native language, in English, and in Pilipino; and of the basic numeracy skills, before exposing the learners to the basic knowledge of the environment, nutrition, health, sanitation, civics, and science; along with basic attitudes.

On the basis of this single line continuum, programmed instructional materials have been produced. The basic literacy and numeracy skills are delivered through programmed teaching modules while the objectives in the later part of the continuum are delivered through programmed peer group learning modules.

Each Learning Center with an average population of 200 to 250 is provided with eight copies of each of the learning modules. And since pupils do not progress at the same rate, each learner has a copy of the module at the time he gets to it.

Besides the modules, each Learning Center is equipped with reference books, charts, posters, flash cards, and other learning devices; with science facilities, and tools and equipment for practical arts. The printed materials are prepared by the curriculum writers, not by the teachers. However, tools and equipment which can be borrowed from the community at the time that these are needed, are provided by the community, not by the school. The reason for using community equipment and



tools is to get the community really involved and to reduce the cost of maintaining the schools.<sup>2</sup>

Project IMPACT extends its classrooms to the entire community. Elder pupils are directed by the modules they use, to go out into the community to gather information or to learn some skills. Whenever this happens, the school's Field Coordinator arranges a meeting between the learners and the community resource person at a time convenient for the resource person. In return for the assistance rendered by the community resource persons to the learner, the school officials offer them social recognition in forms of plaques of appreciation or award of participation.

In the Naga site, language models for English and Filipino are broadcast over the government's radio station thirty minutes for each subject daily. Using the Readers for the Radio Lessons, the beginning learners go through the listening, speaking, and reading exercises with the radio voice model directing their activities.

2. The Management of Learning: In keeping with the overall goal of the IMPACT Management System - to produce fully integrated citizens who can actually participate in national development programs - the emphasis in the learning management system is to provide the learner with learning-how-to-learn

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<sup>2</sup>One of the criteria for Project IMPACT is economy.

skills. Thus the learning modes adopted require the IMPACT pupils to be actively involved in the learning process. Three basic learning modes are used.

Programmed teaching is used for beginning pupils to enable them to attain basic literacy skills in the native language, in English and in Pilipino; and the basic numeracy skills. The programmed materials which have been prepared by a professional teacher who functions as a curriculum writer, is used by an elder pupil. A group of eight to ten pupils learn their lessons together monitored by the programmed teacher.

Peer learning may be done by buddy system or by a group of four to eight pupils who have achieved the basic literacy and numeracy skills and who are on the same lesson in the continuum. The buddy system is usually used in practice drills which are intended to enable the learners to internalize spelling, vocabulary and basic computational skills, and in review lessons; while peer learning for a larger group is used in most module learning activities.

Self instruction may be used by elder pupils who may be forced to stay at home or at his place of work. To minimize the adverse effects of absenteeism, the learner goes through the learning tasks in the modules by himself.

Although the curriculum and the learning materials are

decided upon for the learners, it is the learners themselves who set the pace of their progress from lesson to lesson.

The teacher's role has shifted from that of a source of information and dispenser of knowledge and skills to that of diagnostician, facilitator, manager of learning, and evaluator. Thus, she is now called as the Instructional Supervisor. She does not carry out such activities as lesson planning, and preparing test instruments and teaching devices, because these are tasks for the curriculum writers; she does not check the test papers nor record test results because these are done by the IS Aide who is at least an elementary school graduate. She, however, sends feedback to the curriculum writers on the curriculum materials prepared.

For the routine and clerical functions relative to the management of learning, the IS Aide does these for the Instructional Supervisor. Besides, available secondary students, who are required 120 hours of community work before they could graduate, sometimes assist the IS's in the remediation and tutorial activities.

The programmed teacher is an elder pupil<sup>3</sup> who has acquired proficiency in the media of instruction - English and Pilipino. He follows a program prepared by the curriculum

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<sup>3</sup>An elder pupil is one who is either in Level IV, V, or VI. The Level IV pupils teach Level 2 pupils; the Level V teach Level 3; and the Level VI teach Level I.

writers and monitors the learning of literacy and numeracy skills by younger pupils. The program that he uses contains the items to be taught and the procedures to follow. He is given a short term training to be able to handle a programmed lesson.

The itinerant teacher is a professionally trained teacher who spends one day a week in one of the cluster of five schools to handle scouting, physical education, music and arts activities. Integrating these subject areas, she trains the elder pupils during the first part of the day. Then these elder pupils in turn teach the younger pupils while the teacher oversees them.

3. Organization: The entire school population is divided into families of at least 40 to 50 multi-level pupils. One Instructional Supervisor handles two to three families with the resulting ratio of one Instructional Supervisor to 100 multi-level pupils. Each family is further sub-grouped on the bases of their progress in the continuum and their "emotional closeness" to one another. Each sub-group does not exceed twelve pupils. Since children progress at their own rate, the membership in the group shifts from time to time because the pupils' pace may vary.

4. Scheduling: The younger pupils who are still on the acquisition of the basic literacy and numeracy skills

spend three one-hour periods of programmed teaching by elder pupils, with a fifteen-minute practice drill in spelling, in vocabulary or in math at the end of each one hour period. Two thirty-minute periods are spent listening to the language voice models over the radio. They spend another hour with their family for environmental sanitation and food production activities.

The elder pupils spend one hour teaching younger pupils; three one-hour periods on peer learning with fifteen-minute practice drill after every one-hour period, one hour on individual pursuit, and another one hour for environmental sanitation, food production and briefing for their teaching activity during the day.

There is no standard schedule for all families. These activities are spread out during the day and the pattern varies from family to family.

To serve as incentives for the elder pupils, weekly contracts are signed by a group of learners and the Instructional Supervisor, with the pupils pledging to finish a definite number of modules during the week.

Economic pressures in rural areas tell so much on pupils' regular attendance. Thus whenever an elder child who has already achieved basic literacy and numeracy skills, has to be away from school for valid reasons, his parents request for

a leave-of-absence for the child. For the duration of his absence, the child takes his module home and even to his place of work to enable him to progress with his learning. He reports to the Learning Center for post tests only. If a learner fails to make progress during his leave, the Instructional Supervisor determines the extent that forgetting has affected the learner's progress, provides the necessary remediation, and then starts him where he left off.

5. Evaluation of Pupils' Progress: The evaluation instruments, both formative and summative are prepared by the curriculum writer and are part of the learning package. However, the learners themselves decide when to submit for summative evaluation of a task or a cluster of tasks. Anyone who feels ready can take the exercise at any time. The results of the evaluation determine the degree or type of remediation needed by the learner.

Remediation may be given by a peer, by a high school student who reports as tutor, or by the Instructional Supervisor himself who handles the more serious remediation needs of the learners.

Efforts are taken to put into actual practice the principle of positive reinforcement with the learners, the tutors, the programmed teachers, the IS Aides and the community re-

source persons. For example, in Naga site successful completion of the task and of the contract allows the learners to receive incentive cards which they could exchange with second-hand goods at the end-of-year rummage sale. It also enables them to read the comics version of stories and novels, or to color some art pictures, or to solve some puzzles. The finished work of the learners are exhibited at the Display Area in the Learning Center.

6. Physical Plant: A school population of 200 to 350 pupils needs one building with the size of three standard classrooms to serve as the Learning Resource Center. This is provided with open shelves for the learning modules, science equipment and facilities; a display area for the pupil's work exhibits; at least ten testing carrels for independent testing, and an enclosed small area for the evaluation instruments and other important records, and the IS's and the IS Aide's desks.

In addition to this building, the pupils need about 30 small learning places with enough room for 8 to 12 pupils for small group learning activities. These are small structures made of local building materials by the community volunteers.

Inherent in the developmental activities of the Project were formative evaluation activities carried out by the field staff with assistance from the INNOTECH staff and consultants.

In addition to those, INNOTECH caused the following external evaluation activities to be carried out:

1. To assess the effectiveness of learning in the IMPACT System, the Ministry of Education and Culture administered the SOUTELE Tests<sup>4</sup> in the three sites, first in October 1977, and second, in February-March 1978. The results of these activities which are contained in three publications by INNOTECH showed that the IMPACT pupils were as good as, if not better than, the Non-IMPACT pupils in achievement.<sup>5</sup>

2. To determine the economy of the system, two cost analysis studies were undertaken in 1977 and in 1978. In 1977, Professor Tereso Tullao made the preliminary cost analysis of the system developed in Naga using the framework developed by Professor Editha Tan of the University of the Philippines. Then in 1978, Mr. James McMaster, a professor in Economics at the Canberra College of Advanced Studies, Australia, conducted a more comprehensive study of the three sites. Both studies showed that the system costs 50% less than the conventional

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<sup>4</sup>The SOUTELE Test is an instrument prepared by the Ministry of Education and Culture designed to survey the outcomes of elementary education.

<sup>5</sup>INNOTECH Research Division. An Evaluative Study of Project IMPACT Part I; and Evaluative Study of Project IMPACT Part II; and Summary Report: An Evaluative Study of Project IMPACT.



system.<sup>6</sup>

Encouraged by the findings of these earlier studies, INNOTECH decided to undertake a follow-up study of the graduates who proceeded to the secondary level and of those who left school either before completing the elementary or after a year or two in the secondary from the IMPACT schools and from the designated comparable control schools<sup>7</sup> in the three Philippine sites.

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<sup>6</sup>INNOTECH Research Division. Cost Effectiveness Analysis of Project IMPACT for the Philippines.

<sup>7</sup>Comparability of the control schools with the experimental schools was made on the bases of the socioeconomic conditions of the community, the size of the school, and the distance of the schools from the main highway.

## II. THE RESEARCH HYPOTHESES

### A. The Hypotheses:

This report presents the outcomes of the follow-up evaluation of the IMPACT learning system in terms of the cognitive and the non-cognitive data gathered in 1980-1981.

The cognitive data include indicators of achievement of both the subjects who were in school or who were out of school at the time of the follow-up activities but who took the SOUTELE Tests administered in February-March 1978. The non-cognitive data include those gathered through the self-concept and the attitude questionnaires, as well as through the interviews of the subjects, their teachers, or their employers, and the parents of the IMPACT subjects.

Specifically, the study sought to answer the following questions:

1. On the Cognitive Outcomes:
  - a. Do students who participated in the IMPACT schools show achievement levels significantly different from the achievement levels of students who participated in conventional programs?
  - b. Are there differential cognitive outcomes depending on the mental ability shown by the

IMPACT and the Non-IMPACT students?

- c. Are there differential cognitive outcomes depending on the sex of the IMPACT and the Non-IMPACT students?
  - d. Are there differential cognitive outcomes depending on the age level of the IMPACT and the Non-IMPACT students?
  - e. Are there differential cognitive outcomes depending on the socioeconomic status of the IMPACT and Non-IMPACT students?
  - f. Do leavers from the IMPACT program show achievement levels significantly different from the achievement levels of the leavers from the conventional programs?
  - g. Are there differential cognitive outcomes depending on the mental ability shown by the IMPACT and the Non-IMPACT leavers?
  - h. Are there differential cognitive outcomes depending on the sex of the IMPACT and the Non-IMPACT leavers?
  - i. Are there differential cognitive outcomes depending on the socioeconomic status of the IMPACT and the Non-IMPACT leavers?
2. On the Non-Cognitive Outcomes:
- a. Do students who participated in the IMPACT

- program show self-concepts significantly different from the self-concepts of the students who participated in conventional programs?
- b. Do students who participated in the IMPACT program show attitudes significantly different from the attitudes of the students who participated in conventional programs?
  - c. Do leavers from the IMPACT program show self-concepts significantly different from the self-concepts of leavers from the conventional programs?
  - d. Do leavers from the IMPACT program give reasons for leaving school different from the reasons given by the Non-IMPACT leavers?
  - e. Do the IMPACT leavers and the Non-IMPACT leavers have different types of post school experiences?
  - f. Do parents of students from the IMPACT schools have positive perceptions of the IMPACT system in terms of achievement, study habits, personality development, and self-discipline?

**B. Basic Assumptions:**

The data obtained to answer the research questions raised in this study must be viewed in the light of the following assumptions made for this study:

1. The students' responses to the self-concept and the attitude questionnaires are accurate indices of their assessment of self and the situations presented to them.

2. The experiences of the subjects during the period between graduation or leaving school and the time of the follow up study were similar for both the IMPACT and the Non-IMPACT graduates and leavers; and therefore, significant differences in their achievement, self-concept and attitudes may be due to the differences in their pre-secondary learning experiences.

### III. METHODOLOGY

#### A. Subjects of the Study

The population for the follow-up research consisted of the IMPACT and Non-IMPACT students and leavers who took the SOUTELE Tests in February-March 1978 when they were in Levels V and VI in the three IMPACT sites in Naga, Lapu-lapu City, and Sapang Palay and in Grades V and VI in the comparable control schools.

The Non-IMPACT schools were those in Mainit, Lanas and Cantao-an in Naga; Tiangue, Look and Pajo in Lapu-lapu City; and Bagong Buhay B in Sapang Palay. The IMPACT schools were those in Naalad, Pangdan, Lutac, Balirong, and Uling in Naga; Babag, Gun-ob, and Mactan Air Base in Lapu-lapu City; and Bagong Buhay F in Sapang Palay.

The population data are presented in Table I.

Table I  
Research Population as of February-March  
SY 1978-1979

Sites	IMPACT		Non-IMPACT	
	Level V	Level VI	Grade 5	Grade 6
Naga	60	33	64	66
Sapang Palay	167	158	177	149
Lapu-lapu City	148	124	189	163
Totals	375	315	430	378

Totals for IMPACT: 690      Totals for Non-IMPACT: 808

The subjects who took the SOUTELE Tests in February-March 1978 and who have become the population for this follow-up study consisted of 375 Level V IMPACT pupils, 315 Level VI IMPACT pupils, 430 Grade 5 Non-IMPACT pupils and 378 Grade 6 Non-IMPACT pupils.

Of the 375 Level V IMPACT pupils, 60 come from Naga, 167 from Sapang Palay, and 148 from Lapu-Lapu.

Of the 430 Grade V Non-IMPACT pupils 64 were from Naga, 177 from Sapang Palay, and 189 from Lapu-lapu.

Out of the 315 Level VI IMPACT pupils, 33 were from Naga, 158 from Sapang Palay, and 124 from Lapu-lapu.

Finally, of the 378 Grade VI Non-IMPACT pupils, 66 were from Naga, 149 from Sapang Palay, and 163 from Lapu-lapu.

The intention of the follow-up activities was to obtain data for the total population. However, there were constraints beyond control of the researcher. Some of these pupils have transferred residence to other provinces which made it difficult to make the follow-up.

Consequently, out of the total of 690 IMPACT subjects and 808 Non-IMPACT subjects, only 483 IMPACT graduates and school leavers and 443 Non-IMPACT graduates and school leavers could be reached for data. The data are presented by site and by grade level in the succeeding table.

Table II

The Research Subjects for the Follow-up Study in  
1980-81 By Sites and By Grade Levels

Sites	First Year		Second Year		Third Year		OSY	
	IM	NI	IM	NI	IM	NI	IM	NI
Naga	10	1	35	23	29	27	17	39
Sapang Palay	12	4	92	70	56	46	27	4
Lapu-Lapu	11	27	103	103	65	68	26	31
Totals	33	32	230	196	150	141	70	74

Total for IMPACT: 483

Total for Non-IMPACT: 443

The subjects who were contacted for follow-up data consisted of 483 IMPACT secondary students and leavers and 443 Non-IMPACT secondary students and leavers. The leavers left school either before graduation from the elementary in 1978-1979, or after graduation from the elementary, or after a year or two in the secondary.

Of the 483 IMPACT graduates, 33 were in the first year, 230 in the second year, 150 in the third year and 70 were out-of-school.

Of the 443 Non-IMPACT graduates, 32 were first year, 196 were second year, 141 were third year and 74 were out-of-school.

In terms of the percentage of the subjects who were



contacted from each site the data are given in Table III below.

Table III  
Percentage of the Subjects Contacted for Follow-Up Data by Sites

Sites	IMPACT			Non-IMPACT		
	Pop	Sample	%	Pop	Sample	%
Naga	93	91	98	130	90	69
Sapang Palay	325	187	58	326	124	38
Lapu-lapu City	272	205	76	352	229	65
Totals	690	483	70	808	443	54

The above table shows the following:

1. For the IMPACT schools, a total of 483 representing 70% of the population were contacted during the follow-up activities. These were made up of 98% of the population in Naga, 58% of the population in Sapang Palay and 76% of the population in Lapu-lapu City.
2. For the Non-IMPACT schools, a total of 443 representing 54% were contacted for follow-up data; these were made up of 69% of the population in Naga, 38% of the population in Sapang Palay, and 65% of the population in Lapu-lapu City.

As the data shows, the biggest percentages of subjects not contacted were in Sapang Palay. This could be due to the mobility of the relocated squatters in the area. Many of the families have returned to Manila or have transferred to other provinces.

These subjects who have been contacted for the follow-up served as the pooled subjects in the analysis of the obtained data considering that the subjects from the IMPACT and Non-IMPACT groups have not been equally represented.

It is emphasized here that both the IMPACT and Non-IMPACT in-school subjects are studying in the same secondary schools in their respective communities which employ the conventional learning system. For the Sapang Palay subjects they are studying in Sapang Palay National High School, San Jose del Monte Trade School, Assumption Sapang Palay, and Gen. MacArthur Memorial College, in Sapang Palay, San Jose del Monte, Bulacan. Those from Naga are studying in Balirong Barangay High School, Pangdan Barangay High School, Naga Provincial High School, and Siena School of Naga in Naga; while those in Lapu-lapu City are studying in Philippine Air Force College of Aeronautics, Babag Barangay High School, Saint Alphonsus Catholic School, Pajo Barangay High School, Pusok Barangay High School and Look Barangay High School in Lapu-lapu City. These subjects are exposed to the same kind of learning activities and to the

same teachers within the same schools.

B. Instruments Used.

1. SOUTELE Instruments.

SOUTELE is an acronym for Survey of Outcomes of Elementary Education. The instruments were prepared and validated by the Ministry of Education and Culture<sup>8</sup> for evaluation of the outcomes of elementary education.

In February-March, 1978 an external group from the Ministry of Education and Culture administered the tests to the IMPACT Levels V and VI students and to the Grades V and VI Non-IMPACT students in the control schools.

The data used to determine the comparability of the subjects in this follow-up study were scores obtained on the Non-Verbal Mental Ability Test, data from the questionnaire entitled "Information About Pupil." These data were obtained from the INNOTECH files.

2. The Philippine Educational Placement Test.<sup>9</sup>

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<sup>8</sup> A very comprehensive description of the SOUTELE Instruments appears in An Evaluative Study of Project IMPACT-Part II. published by INNOTECH Research Division.

<sup>9</sup> The description is taken from the NETC brochure on the Philippine Educational Placement Test.

This is an instrument prepared by the National Education Testing Center of the Ministry of Education and Culture. It consists of two sets, namely the Academic Achievement Test and the Assessment Kit-Programmed Test.

For purposes of this research activity, only the first set - the Academic Achievement Test was used.

The purely academic portion of the test is intended for administration to those who would like to go back to school in order to complete formal schooling. It can be used to provide a basis for adjusting the level of educational attainment achieved by a population as indicated by the grade or year of schooling.

The test covers three subject areas: Communication Arts in English, Communication Arts in Pilipino, and Mathematics. The test for each subject area contains, in a sequential manner, basic learning skills required for the grade/year level.

a. Communication Arts (English)

The test attempts to assess the students' verbal knowledge, abilities and skills - among which are knowledge of correct usage, identifying errors in grammar, punctuation, capitalization, spelling, letter writing, understanding what one reads, ability to organize ideas logically, extent of one's vocabulary, and ability to communicate effectively.

b. Communication Arts (Pilipino)

The test measures more or less the same abilities, knowledge and skills measured by Communication Arts Tests in English. It is not, however, the literal translation in Pilipino of the English tests.

c. Mathematics

This test measures the ability to deal with situations involving numbers. It also attempts to assess skills in using mathematical processes in solving problems, applying basic algebra and geometry principles in solving problems, reading and interpreting graphs and scales, and comparing quantities.

The tests in the three subject areas are contained in three separate booklets. Separate answer sheets are provided for the examinees. The tests are of the multiple-choice type with four choices.

The three tests were scheduled for one whole day. Standard time limits were strictly followed.

The tests were administered by representatives from National Education Testing Center of the Ministry of Education and Culture in all the three sites using the manual for test administration. The tests in the three sites were administered in a span of one week with one day interval for the testing in Naga and Lapu-lapu and with three-days interval between the testing in Lapu-lapu and Sapang Palay.

The test papers were scored and the results translated to standard scores by the University of the Philippines Computer Center.

3. Student's Data Sheet.<sup>10</sup>

This was prepared specifically for this study and was used to gather such data as occupation of parents, the teacher-grades of the student for the preceding and the current curriculum years.

4. Interview Schedule for Dropouts.

This instrument was designed to gather data on the following: the grade level completed prior to leaving school, information on work experience, reasons for leaving school, the subject's exposure to mass media, and information on pre-and-on-the-job-training.

5. The Self-Concept Questionnaires.

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<sup>10</sup> Except for the SOUTELE Tests and the Philippine Educational Placement Test, the instruments for this project are all included in Appendix B of this report.

Two sets of questionnaires were prepared specifically for this research study: (1) the Student's Self-Report Questionnaire and (2) the Worker's Self-Report Questionnaire.

These instruments were designed to measure each subject's self-concept as reflected by his perception of his physical presentation, his interaction with his environment, his interaction with his peers, and his interaction with his teachers or superiors. This instrument is an adaptation of Echard's Self-Report for the Measurement of Self-Concept in Educational Setting<sup>11</sup> in so far as the four components of the subject's self-concept were concerned. The items in each of the four headings were, however, geared toward measuring the expected affective outcomes of the IMPACT Learning System.

These instruments were tried out before they were finalized. The main objective of the tryout was to determine the reliability of the items in the scale and the internal consistency of the scale. The instruments for the students were tried out among 49 Grade V pupils, 42 Grade VI pupils, 61 first year students, 53 second year students and 47 third year students in one of the local universities which serves the middle and lower social classes in the community. These

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<sup>11</sup>Pamela Echard, "Design and Evaluation of an Observation Schedule and Self-Report for the Measurement of Self-Concept in Educational Setting". American Educational Research Association, April 1976.

groups did not include the students who were administered by the final version of the instrument.

#### 6. The Attitude Questionnaire.<sup>12</sup>

In order to obtain data on the attitude of the IMPACT graduates, an Attitude Questionnaire was devised. The content was based on the Table of Specifications for the Attitude Inventory in the SOUTELE Instruments.

The draft form of the attitude questionnaire was tried out on the same pupils and students who were asked to answer the self-concept questionnaires. Then it was revised on the basis of the feedback from the tryout, and from the feedback from the consultants who were requested to critique the instruments.<sup>13</sup>

#### C. The Manual for Data Gathering.

To ensure that the data would be gathered under similar conditions, a manual for the field workers was devised. It

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<sup>12</sup>Please see Appendix B for the Table of Specifications and the Questionnaire.

<sup>13</sup>The Self-Concept Questionnaire, the Attitude Questionnaires, the Student's Data Sheet, and the Interview Schedule for Dropouts were referred to Mr. Peter Thompson, the INNOTECH Consultant, and to Dr. Shaeldon Shaeffer, programme officer of the Social Sciences Division of IDRC, Ottawa, for them to pass judgement on and to suggest ways of improving them.



included instructions on how to administer the different instruments and translations of the questions for the respondents in Cebuano and in Tagalog.

The field workers in the three sites were given specific instructions on how to go about the data gathering activity using this manual.<sup>14</sup>

D. Analysis of Data.

The SOUTELE data on Mental Ability of the subjects and on the other individual characteristics of the subjects were obtained from the file of the INNOTECH Research Division.

The test papers on the Academic Achievement Test in the Philippine Educational Placement Tests were scored and the results were given their equivalent standard scores by the University of the Philippines Computer Center. A copy of the print out of the standard scores and their corresponding grade equivalents was received from the Center.

All data gathered from the field and the data received from the UP Computer Center and from the INNOTECH Research Division were recorded in the students' index cards. Each subject has an index card and all information and data obtained were entered in the subject's index card.

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<sup>14</sup> Please refer to Appendix B.

In the analysis of the data, the following statistical tests were used:

1. t-test for correlated means<sup>15</sup>

This statistical test was used in the comparison of the achievement of the IMPACT and the Non-IMPACT secondary students and also of school leavers. Specifically, it was used in the treatment of the results of the Academic Achievement Tests for both the secondary students and the school leavers, the comparison of the teachers' grades of the secondary IMPACT and Non-IMPACT students, and the comparison of the self-concept and attitude data of the same groups.

The formula is:

$$\sigma_{d_m} = \sqrt{\left(\sigma_{m_1}^2 + \sigma_{m_2}^2\right) \left(1 - r_{xy}^2\right)}$$

The  $r_{xy}$  is the correlation between mental ability and achievement, or sex and achievement, or age and achievement, or socioeconomic status and achievement.

2. t-test for un-correlated means<sup>16</sup>

This was used for the comparison of the mean scores in

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<sup>15</sup>Garret. Statistics in Psychology and Education. (Vakils, Feffer and Simons Private Ltd.) pp. 226-232.

<sup>16</sup>Guilford. Fundamental Statistics in Psychology and Education. (Tokyo: McGraw Hill, Inc., 1973), p. 151.

the Mental Ability Test.

The formula is:

$$\sigma_{d_m} = \sqrt{\sigma_{m_1}^2 + \sigma_{m_2}^2}$$

3. Coefficient of correlation using the scattergram for groups whose N is 30 or more.<sup>17</sup>

This measure was used to establish correlation between mental ability and achievement of the subjects.

$$r_{xy} = \frac{\frac{\sum x'y'}{N} - (M_{x'}M_{y'})}{\sigma_{x'} \sigma_{y'}}$$

where  $x'$  = the deviations of coded values for X

$y'$  = the deviations of coded values for Y

$M_{x'}$  = the mean of the coded values of X

$\sigma_{x'}$  = the standard deviation of the coded values  
of X

$M_{y'}$  = the mean of the coded values of Y

$\sigma_{y'}$  = the standard deviation of the coded values  
of Y.

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<sup>17</sup>Ibid., p. 89.

4. Coefficient of correlation calculated from original measurements where N was less than 30.<sup>18</sup>

This was used to compute the coefficient of correlation between achievement and mental ability of the IMPACT and the Non-IMPACT groups where the number of cases was less than 30 as in the case of the first year subjects and the out-of-school subjects, and for the self-concept and the attitude measures.

$$r_{xy} = \frac{NEXY - (EX)(EY)}{\sqrt{[NEX^2 - (EX)^2][NEY^2 - (EY)^2]}}$$

5. Chi square and the coefficient of contingency.<sup>19</sup>

These measures were used to determine correlation between age or socioeconomic status, and the students'/leavers' scores in the academic achievement tests in English, Pilipino, and in Math.

$$\chi^2 = \sum \left[ \frac{(f_o - f_e)^2}{f_e} \right]$$

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}}$$

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<sup>18</sup>Guilford, *Ibid.*, p. 25.

<sup>19</sup>Kerlinger, Foundations in Behavioral Research. (New York: Holt, Rinehart and Winston, 1973), p. 171.

t. The point biserial correlation<sup>20</sup>

This measure was used to determine the relationship between sex and the achievement of the IMPACT and Non-IMPACT subjects in English, Pilipino, or Math.

$$r_{pbi} = \frac{M_p - M_q}{\sigma_t} \sqrt{pq}$$

where:

$M_p$  = mean of x values for the higher group in  
the dichotomy (boys / girls)

$M_q$  = mean of the x values for the lower group  
(boys/girls)

$\sigma_t$  = standard deviation of the total sample in  
the achievement test

p = proportion of boys/girls in the higher group

q = proportion of boys/girls in the lower group

7. The Kuder-Richardson Formula No. 20<sup>21</sup>

This was used to determine the internal consistency of the measures in the Self-Concept and the Attitude Questionnaires. The formula is:

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<sup>20</sup>Guilford, p. 298.

<sup>21</sup>Guilford, p. 416.

$$r_{tt} = \left( \frac{n}{n-1} \right) \left( \frac{\overline{T_t^2} - pq}{\sigma_t^2} \right)$$

where  $n$  = number of items in the test

$p$  = proportion passing an item

$q = 1 - p$

$\sigma^2$  = square of the standard deviation of scores

#### 8. Significance of the difference between two percents

$$SE_{\%} = \overline{\sigma_P} = \sqrt{\frac{PQ}{N}}$$

where

$P$  = percent of occurrence of observed behavior

$Q = 1 - P$

$N$  = size of the sample

SE of the difference between  $P_1$  and  $P_2$

$$\overline{\sigma_{D\%}} = \overline{\sigma_{P_1}} - P_2 = \sqrt{\sigma_{P_1}^2 + \sigma_{P_2}^2}$$

or

$$= \sqrt{PQ \left[ \frac{1}{N_1} + \frac{1}{N_2} \right]}$$

where

$$P = \frac{N_1 P_1 + N_2 P_2}{N_1 + N_2}$$

$Q = 1 - P$

where

$P$  is the pooled estimate of  $P$

#### IV. DEFINITIONS OF THE VARIABLES

The variables used in the study are given their operational definitions in this section.

Individual Characteristics of the Subjects. The subject's individual characteristics are indicated by sex, age, and mental ability level.

Age refers to the subject's chronological age in March 1981.

Considering that the Filipino child starts formal schooling at age 7, the following age brackets were established for each curriculum year with March 1981 as the particular point in time.

	First Year	Second Year	Third Year
Overage (O)	Above 14.5	Above 15.5	Above 16.5
Normal Age (N)	13.5 to 14.5	14.5 to 15.5	15.5 to 16.5
Underage (U)	Below 13.5	Below 14.5	Below 15.5

Mental Ability is indicated by the subject's score in the non-verbal mental ability test which he took during the first administration of the SOUTELE instruments in October 1979, when he was either in Level V or VI in IMPACT or Grade V or VI in Non-IMPACT schools. The subjects are categorized

on the basis of their scores in relation to the group means.<sup>22</sup>

	Grade V	Grade VI
High	50 and above	55 and above
Average	35 to 49	40 to 54
Low	34 and below	39 and below

Socioeconomic Factors: Three factors were taken into consideration when categorizing the subjects on the basis of socioeconomic status (SES). These were the parents' educational attainment, and the combined monthly income of the family which were obtained from the SOUTELE Information Sheet; and the parents' occupation which was obtained during the follow-up period.

The following income brackets with the corresponding points were used in this study:

<u>Income Bracket</u>	<u>Points</u>
Above ₱2,500	8
₱2,000 - 2,499	7
1,800 - 1,999	6
1,500 - 1,799	5

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<sup>22</sup>INNOTECH Research Division. An Evaluative Study of Project IMPACT - Part I, page 60.



<u>Income Bracket</u>	<u>Points</u>
₱1,000 - ₱1,499	4
800 - 999	3
500 - 799	2
Below ₱250 - ₱499	1

The following categories for parents' education and their corresponding points were also used as basis for establishing the subject's socioeconomic status:

<u>Educational Level</u>	<u>Points</u>
Some college or specialized post secondary training	6
Complete secondary	5
Incomplete secondary	4
Complete primary/elementary	3
Incomplete primary/elementary	2
No schooling	1

In the parents' occupation, the scales established by the Ministry of Labor were used and the following points were given for each scale.<sup>23</sup>

<u>Scales</u>	<u>Points</u>
Scale 1: Professional Practitioners	12

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Please see Appendix C for the specific jobs for each scale.

Scale 2: Government High Officials, Directors, Managers, Officers of the Military	11
Scale 3: Skilled Business Technicians	10
Scale 4: Business Employees	9
Scale 5: Skilled Mining Technicians	8
Scale 6: Skilled Transportation Employees	7
Scale 7: Skilled Labor for Factory	6
Scale 8: Farmers, Fisherman, Loggers	5
Scale 9: Skilled Manual Labor	4
Scale 10: Workers in Public Service Agencies	3
Scale 11: Common Laborers	2
Scale 12: Workers Seeking Employment	1

On the basis of the points adopted for the indicators of socioeconomic status (SES), each subject had a composite score. To set up the categories for the socioeconomic status, the mean (8.54) and the standard deviation (3.5) were used to plot the five SES categories. The total research population of 1,383 are distributed thus on the five categories:

<u>SES Categories</u>	<u>Range</u>	<u>Frequency</u>	<u>Percentage</u>
Lower-High	13.79-17.28	25	2
Upper-Middle	10.29-13.78	425	31
Lower-Middle	6.79-10.28	682	49
Upper-Low	3.29- 6.78	210	15
Lower-Low	Below 3.28	42	3

For purposes of analysis, since the frequencies for the two extreme categories were very small, the five categories were reduced to three, combining Lower-High and Upper-Middle as Upper-Middle, Upper-Lower and Lower-Low or as Low. Thus the three categories are: Upper-Middle, Lower-Middle and Low.

Post School Experiences: This refers to the types of jobs of the dropouts from the time they left school until the time they took the literacy and numeracy retention tests and the Self-Report Questionnaire.

Achievement: The achievement of the students who have continued on to the secondary and of the school leavers was indicated by the cumulative grades given by the teachers in English, Filipino and Math for each curriculum year in the case of the in-school subjects and by their scores in English, Filipino, and Math in the Philippine Educational Placement Test administered by representatives of the National Educational Testing Center of the Ministry of Education and Culture in December 1980.

Attitudes: Some research activities were directed at determining the extent to which the subjects, both the IMPACT and the Non-IMPACT students, have acquired the desirable attitudes "towards cooperation with one's family and fellowmen;

toward work and community and material development, and not least of all toward continued learning and toward the development of ethical, spiritual and moral values."<sup>24</sup> Statements were presented to the subjects for them to react to and thus reveal the presence or absence of the desired attitude. The construct is therefore, indicated by the responses of the subjects to the statements presented to them.

Self-Concept: This refers to the subjects' judgment of themselves on the basis of their physical presentation, their interaction with their environment, with their peers and with their teachers.

Their physical presentation includes posture, physical appearance, energy, voice, volume and speech, and attention span. Their interaction with their environment includes their responses to the learning tasks, the learning materials and the learning areas. Their interaction with peers concerns their responses to their classmates in group activities. Finally their interaction with their teachers involves their responses to discussions with teachers, to teacher-directed activities, and to their assessment of the teacher-pupil climate.

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<sup>23</sup>See Appendix A.

A questionnaire was devised to measure the subjects' self-concept. This consisted of statements to which the subjects reacted to by giving their agreement, non-agreement, or uncertainty about the matter, and thus reveal their assessment of themselves.<sup>25</sup>

This construct is indicated by the scores of the respondents in the Self-Report Questionnaire.

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<sup>25</sup>See Appendix B.

## CHAPTER II

### THE COGNITIVE OUTCOMES

In March 1981, the IMPACT Field Coordinator in Naga informed the IMPACT local office that Project IMPACT had its golden harvest!<sup>1</sup> Among the graduating secondary students in the different high schools in Naga, the IMPACT students topped them all!

1. In Balirong Barangay High School, the first five honor students are all products of the IMPACT schools.

2. In Pangdan Barangay High School, the first four honor graduates are products of the IMPACT schools.

3. In Naga Provincial High School, the fifth honor graduate was a product of the IMPACT school who finished the elementary in only five years, instead of six.

4. Among the first ten senior students in the Naga Provincial Secondary School who passed the 1980 National College Entrance Examination, the first, the second, the fifth, the seventh, and the ninth were graduates from the IMPACT schools, while the rest were graduates from the conventional schools.

This type of report was not the first of its kind. Ever since the IMPACT graduates studied in the secondary

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<sup>1</sup> Please see Appendix F for the names of the students.

schools, teachers have given unsolicited comments on the performance of the IMPACT graduates. Thus this study sought to come up with statistical evidence on the indicators of the cognitive outcomes of the IMPACT learning system.

The data obtained are presented in this chapter relative to the research hypotheses on cognitive outcomes.

Hypothesis 1. Do students who participated in the IMPACT schools show achievement levels significantly different from the achievement levels of students who participated in conventional programs?

Two sets of data are presented to answer this question. The first set includes the comparison of the standard scores of the secondary IMPACT and Non-IMPACT students who took the Academic Achievement Tests of the Philippine Educational Placement Tests (PEPT). The second set of data includes the comparison of teacher grades obtained by the students in the secondary level.

A. Comparison of the Standard Scores in the Academic Achievement Tests in the PEPT.

The IMPACT and the Non-IMPACT students in each curriculum year were matched on the basis of their means and standard deviation in the Mental Ability Test of the SOUTELE Tests which they took in February-March 1978.

Table IV

Comparison of the Achievement Level in the Academic Achievement Tests of the IMPACT and Non-IMPACT Students in the First Year of the Secondary Level

MAT Data						
	IMPACT		Non-IMPACT			
N	17		21			
M	40.47		38			
SD	9.26		9.88			
$\sigma_m$	2.25		2.16			
DM			2.47			
$\sigma_{d_m}$			3.11			
t			.79			
Achievement Data						
	English		Pilipino		Math	
	IM	NI	IM	NI	IM	NI
N	17	21	17	21	17	21
M	43.88	43.66	44.65	45.9	46.8	48.09
SD	6.59	8.97	7.43	9.82	5.89	9.82
$\sigma_m$	1.6	1.96	1.8	2.15	1.43	2.15
$r_{xy}$		.3056		.43		.3941
DM		.22		1.25		1.29
$\sigma_{d_m}$		2.4		2.53		2.37
t		.092		.49		.54

IM = IMPACT

NI = Non-IMPACT

$r_{xy}$  = correlation coefficient of MAT and Achievement Tests



The data in Table IV show that the first year IMPACT and the Non-IMPACT secondary students are comparable in terms of their scores in the Mental Ability Test. The differences between their mean scores in the achievement tests in English, Pilipino and Math are also statistically comparable.

Table V

Comparison of the Achievement Levels in the Academic Achievement Tests of the IMPACT and the Non-IMPACT Students in the Second Year in the Secondary Level

MAT Data						
	IMPACT		Non-IMPACT			
N	167		153			
M	46.46		44.22			
SD	11.42		11.22			
$\sigma_m$	.88		.97			
DM			2.24			
$\sigma_{d_m}$			1.30			
t			1.72			
Achievement Data						
	English		Pilipino		Math	
	IM	NI	IM	NI	IM	NI
N	167	153	167	153	167	153
M	52	46.12	52	50.75	48.92	43.34
SD	8.62	8.86	10.51	11.13	11.04	9.8
$\sigma_m$	.67	.72	.81	.90	.86	.79
$r_{xy}$	.4609		.5024		.2554	
DM	5.88		1.25		5.58	
$\sigma_{d_m}$	.87		1.04		1.12	
t	6.75**		1.20		4.98**	

\* = t is significant at .05      \*\* = t is significant at .01

The second year IMPACT and Non-IMPACT secondary students have statistically comparable means *and standard deviation* in the Mental Ability Tests as shown in Table V. The differences of the means <sup>of the 2 groups</sup> in the achievement tests in English and Mathematics are statistically significant at .01 level, *both* in favor of the IMPACT students. The difference between the means in the achievement test in Pilipino while in favor of IMPACT is not statistically significant, however.

Table VI

Comparison of the Achievement Levels in the Academic Achievement Tests of the IMPACT and the Non-IMPACT Students in the Third Year in the Secondary Level

MAT Data						
	IMPACT		Non-IMPACT			
N	112		95			
M	50.74		47.75			
SD	13.4		12.2			
$\sigma_m$	1.27		1.25			
DM			2.99			
$\sigma_{d_m}$			1.78			
t			1.68			
Achievement Data						
	English		Pilipino		Math	
	IM	NI	IM	NI	IM	NI
N	112	95	112	95	112	95
M	52.76	47	53.87	47	49.41	47
SD	10.94	10.45	10.82	12.7	15.42	14.72
$\sigma_m$	1.03	1.07	1.03	1.3	1.46	1.5
$r_{xy}$	.4846		.4509		.2177	
DM	5.76		6.87		2.41	
$\sigma_{d_m}$	1.3		1.48		2.04	
t	4.43**		4.64**		1.18	

\* significant at .05

\*\* significant at .01

The data presented in Table VI show that the mean scores in the Mental Ability Test of the third year IMPACT and Non-IMPACT secondary students are not statistically different. But the differences in their mean scores in English and Pilipino achievement tests both in favor of IMPACT students are statistically significant at the .01 level. The difference in the mean scores in Math is not statistically significant.

B. The Comparison of Achievement Through Teacher Grades.

The following three tables present the comparison of the achievement levels of the IMPACT and the Non-IMPACT secondary students in terms of teachers' grades in English, Pilipino and Mathematics. Again, the students are matched on the basis of their mean scores in the Mental Ability Test of the SOUTELE Tests. The obtained coefficients of correlation show the correlation between Mental Ability scores and teachers' grades in English, Pilipino or Math.

It may be mentioned at this point that not all the first year students who had data on teacher grades took the Academic Achievement Tests, and not all the second and third year students who took the Academic Achievement Tests had data on teacher grades.

Table VII

Comparison of the Achievement Levels in Terms of the Teacher Grades of the IMPACT and the Non-IMPACT Students in the First Year of the Secondary Level

MAT Data						
	IMPACT		Non-IMPACT			
N	24		22			
M	39		35.98			
SD	9.47		9.02			
$\zeta_m$	1.94		1.93			
DM			3.02			
$\zeta_{d_m}$			2.73			
t			1.1			
Achievement Data in Terms of Teacher Grades						
	English		Pilipino		Math	
	IM	NI	IM	NI	IM	NI
N	24	22	24	22	24	22
M	76.8	76.64	76.9	75.52	76.53	77
SD	2.83	3.62	2.64	1.49	3.39	3.34
$\zeta_m$	.58	.77	.54	.32	.69	.69
$r_{xy}$		.3068		.3415		.2444
DM		.16		1.38		.47
$\zeta_{d_m}$		.92		.59		.95
t		.17		2.33*		.49

\*\* significant at .01

\* significant at .05

The data in Table VII show that the first year IMPACT and Non-IMPACT secondary students obtained mean scores in the Mental Ability Test which are not significantly different. The comparison of the means of the teacher grades in English, Pilipino and Math show that the IMPACT and Non-IMPACT first year secondary students are statistically comparable in their levels of achievement in English and Mathematics, but the difference in mean scores in Pilipino in favor of the IMPACT group is statistically significant at the .05 level.

Table VIII

Comparison of the Achievement Levels in Terms of Teacher Grades of the IMPACT and the Non-IMPACT Students in the Second Year of the Secondary Level

MAT Data						
	IMPACT		Non-IMPACT			
N	149		125			
M	46.26		43.45			
SD	11.98		12.87			
$\sigma_m$	.98		1.15			
DM			2.81			
$\sigma_{d_m}$			1.51			
t			1.86			
Achievement Data in Terms of Teacher Grades						
	English		Pilipino		Math	
	IM	NI	IM	NI	IM	NI
N	149	125	149	125	149	125
M	78.5	78.48	79.25	78.98	78.03	78
SD	3.34	2.05	2.95	3.32	3.4	3.96
$\sigma_m$	.27	.18	.24	.30	.28	.36
$r_{xy}$		.5993		.4251		.3648
DM		.02		.27		.03
$\sigma_{d_m}$		.26		.35		.43
t		.077		.77		.069

The second year IMPACT and Non-IMPACT students are statistically comparable in terms of their mean scores in the Mental Ability Test, as they are shown in Table VIII. When they are compared on the basis of grades obtained in English, Pilipino and Mathematics in the secondary level, they also come out statistically comparable.

Table IX

Comparison of the Achievement Levels in Terms of Teacher Grades of the IMPACT and the Non-IMPACT Students in the Third Year of the Secondary Level

MAT Data						
	IMPACT		Non-IMPACT			
N	86		76			
M	50.88		48.38			
SD	12.84		12.93			
$\sigma_m$	1.39		1.48			
DM			2.5			
$\sigma_{d_m}$			2.03			
t			1.23			
Achievement Data in Terms of Teacher Grades						
	English		Pilipino		Math	
	IM	NI	IM	NI	IM	NI
N	86	76	86	76	86	76
M	79.3	78.87	80.18	78.84	79.35	78
SD	3.39	3.65	3.32	3.65	3.55	2.1
$\sigma_m$	.37	.42	.36	.42	.38	.24
$r_{xy}$	.3096		.34		.3106	
DM	.43		1.34		1.35	
$\sigma_{d_m}$	.54		.53		.43	
t	.79		2.53*		3.13**	

\* significant at .05 level

\*\* significant at .05



Table IX shows that the third year IMPACT and Non-IMPACT students are statistically comparable in terms of their mean scores in the Mental Ability Test. Comparing them in terms of teacher grades, the difference between the means of their teacher grades in Filipino and in Mathematics <sup>both in favor of the IMPACT groups</sup> are significant at the .05 and the .01 levels respectively; but the difference between the mean teacher grades in English is not statistically significant.

To summarize the data pertinent to the first hypothesis raised in the study, these are presented in the summary tables below.

Table X

Summarized Data on the Relative Achievement of IMPACT and Non-IMPACT Students in English, Filipino and Mathematics Based on the Results of the Academic Achievement Tests

	N	M	SD	$\sigma_m$	DM	$\sigma_{d_m}$	t
<b>English</b>							
First Year							
IMPACT	17	43.88	6.59	1.6	-.22	2.40	.092
Non-IMPACT							
Second Year							
IMPACT	167	52	8.62	.67	5.88	.87	6.75**
Non-IMPACT	153	46.12	8.86	.72			
Third Year							
IMPACT	112	52.76	10.94	1.03	5.76	1.3	4.43**
Non-IMPACT	95	47	10.45	1.07			
<b>Filipino</b>							
First Year							
IMPACT	17	44.65	7.43	1.8	1.25	2.53	.49
Non-IMPACT	21	45.9	9.82	2.15			
Second Year							
IMPACT	167	52	10.51	.81	1.25	1.04	1.20
Non-IMPACT	153	50.75	11.13	.90			
Third Year							
IMPACT	112	53.87	10.82	1.03	6.87	1.48	4.64**
Non-IMPACT	95	47	12.7	1.3			
<b>Mathematics</b>							
First Year							
IMPACT	17	46.8	5.89	1.43	1.29	2.37	.54
Non-IMPACT	21	48.09	9.82	2.15			
Second Year							
IMPACT	167	48.92	11.04	.86	5.58	1.12	4.98**
Non-IMPACT	153	43.34	9.8	.79			
Third Year							
IMPACT	112	49.41	15.42	1.46	2.41	2.04	1.18
Non-IMPACT	95	47	14.72	1.5			

\*\* significant at .01

\* significant at .05

The data contained in Table X show that in the Academic Achievement Tests:

1. The mean differences in English, Pilipino and Math of the IMPACT and Non-IMPACT students in the first year of the secondary level are not statistically significant;
2. The mean differences in English and Mathematics of the IMPACT and the Non-IMPACT students in the second year of the secondary level, are significant at the .01 level in favor of IMPACT students, but the mean difference in Pilipino <sup>while also in favor of IMPACT students</sup> is not statistically significant;
3. The mean differences in English and in Pilipino of the IMPACT and Non-IMPACT students in the third year of the secondary level are significant at the .01 level in favor of IMPACT students but the mean difference in Mathematics is not significant.

Table XI

Summarized Data on the Relative Achievement of IMPACT and Non-IMPACT Students in English, Pilipino, and Mathematics Based on the Teacher Grades

	N	M	SD	$\sigma_m$	DM	$\sigma_m$	t
<b>English</b>							
First Year							
IMPACT	24	76.8	2.83	.58	.16	.92	.17
Non-IMPACT	22	76.64	3.62	.77			
Second Year							
IMPACT	149	78.5	3.34	.27	.02	.26	.077
Non-IMPACT	125	78.48	2.05	.18			
Third Year							
IMPACT	86	79.3	3.39	.37	.43	.54	.79
Non-IMPACT	76	78.87	3.65	.42			
<b>Pilipino</b>							
First Year							
IMPACT	24	76.9	2.64	.54	1.38	.59	2.33*
Non-IMPACT	22	75.52	1.49	.32			
Second Year							
IMPACT	149	79.25	2.95	.24	.27	.35	.77
Non-IMPACT	125	78.98	3.32	.30			
Third Year							
IMPACT	86	80.18	3.32	.36	1.34	.53	2.53*
Non-IMPACT	75	78.84	3.65	.42			
<b>Math</b>							
First Year							
IMPACT	24	76.53	3.39	.69	.47	.95	.49
Non-IMPACT	22	77	3.24	.69			
Second Year							
IMPACT	149	78.03	3.4	.28	.03	.43	.069
Non-IMPACT	125	78	3.96	.36			
Third Year							
IMPACT	36	79.35	3.55	.38	1.35	.43	3.13**
Non-IMPACT	76	78	2.1	.24			

\* significant at .05

\*\* significant at .01

The summarized data presented in Table XI show that the mean differences in the teacher grades in English, Filipino, and Mathematics of the IMPACT and the Non-IMPACT students in the first, second and third years in the secondary level are not statistically significant except for the difference in Filipino for the second year and the third year

which are both significant at .05 level, in favor of IMPACT students, and for the difference in Mathematics for the third year <sup>also in favor of impact students</sup> which is significant at the .01 level.

Hypothesis 2. Are there differential cognitive outcomes depending on the mental ability shown by the IMPACT and the Non-IMPACT students?

To answer the question, the IMPACT and Non-IMPACT subjects were categorized by mental ability levels, such as high mental ability (HMA), average mental ability (AMA), and low mental ability (LMA). Then the mean scores of the corresponding categories of the IMPACT and the Non-IMPACT students are compared. The coefficient of correlation for mental ability and achievement in terms of the results of the Academic Achievement Tests in English, Filipino and Mathematics is used for the t-test for two correlated means. The data are presented in the succeeding tables by curriculum year and by subject area.

Table XII

Comparison of the Achievement Levels in the Academic Achievement Tests in English, Pilipino and Mathematics of the First Year Secondary IMPACT and Non-IMPACT Students Classified by Mental Ability Levels

	N	M	SD	$\sigma_m$	$r_{xy}$	DM	$\sigma_{d_m}$	t
English					.3056			
AMA								
IMPACT	12	44.67	6.16	1.77		.87	2.45	.36
Non-IMPACT	10	43.8	5.9	1.88				
LMA								
IMPACT	4	38.5	3.2	1.6		.78	1.8	.43
Non-IMPACT	7	39.28	2.7	1.02				
Pilipino					.43			
AMA								
IMPACT	12	44.58	5.06	1.46		1.62	2.71	.59
Non-IMPACT	10	46.2	8.3	2.53				
LMA								
IMPACT	4	44.25	12.79	6.39		4.25	7.14	.59
Non-IMPACT	7	40	12.34	4.66				
Mathematics					.3941			
AMA								
IMPACT	12	48.73	5.33	1.54		1.27	2.61	.48
Non-IMPACT	10	50	7.56	2.39				
LMA								
IMPACT	4	41.34	1.54	.77		.48	2.15	.22
Non-IMPACT	7	40.86	3.72	1.1				

There are only two mental ability categories for the IMPACT and the Non-IMPACT students in the first year of the secondary. These are the average mental ability group and the low mental ability group. A comparison of the mean standard scores in English, Pilipino and Math of the IMPACT and the Non-IMPACT ability group show that the differences between means for all the groups are not statistically significant.

Table XIII

Comparison of the Achievement Levels in the Academic Achievement Tests in English, Pilipino, and Mathematics of the Second Year Secondary IMPACT and Non-IMPACT Students Classified By Mental Ability Levels

	N	M	SD	$\sigma_m$	$r_{xy}$	DM	$\sigma_{d_m}$	t
English					.4609			
HMA								
IMPACT	30	50.84	9.4	1.72				
Non-IMPACT	29	51.17	8.48	1.57		.33	2.06	.16
AMA								
IMPACT	60	46.8	7.83	1.0				
Non-IMPACT	65	47.5	8.63	1.07		.7	1.29	.54
LMA								
IMPACT	29	42.31	6.5	1.2				
Non-IMPACT	29	43	6.82	1.27		.69	1.55	.44
Pilipino					.5024			
HMA								
IMPACT	30	59.58	9.7	1.77				
Non-IMPACT	29	62.1	10.46	1.94		2.52	2.27	1.11
AMA								
IMPACT	60	52.47	8.64	1.12				
Non-IMPACT	65	54.34	9.17	1.14		1.87	1.38	1.35
LMA								
IMPACT	29	46.38	9.98	1.85				
Non-IMPACT	29	44.16	8.54	1.59		2.22	2.10	1.05
Mathematics					.2584			
HMA								
IMPACT	30	52.55	9.11	1.66				
Non-IMPACT	29	53.86	10.33	1.92		1.31	2.45	.53
AMA								
IMPACT	60	47.49	9.05	1.17				
Non-IMPACT	65	48.63	7.32	.90		1.14	1.42	.80
LMA								
IMPACT	29	43.85	9.92	1.84				
Non-IMPACT	29	45.42	8.5	1.58		1.57	2.34	.67



The IMPACT and Non-IMPACT students in the second year of the secondary level were grouped on the basis of mental ability and the mean scores in the Academic Achievement Tests in English, Pilipino and Math of the paired categories were tested for significance. As the t-ratios in Table XIII show, the differences for all the different ability groups in the three subject areas, are all statistically insignificant.

Table XIV

Comparison of the Achievement Levels in the Academic Achievement Tests in English, Filipino, and Mathematics of the Third Year Secondary IMPACT and Non-IMPACT Students Classified by Mental Ability Levels

	N	M	SD	$\sigma_m$	$r_{xy}$	DM	$\sigma_{d_m}$	t
English					.4846			
HMA								
IMPACT	30	58.34	9.68	1.77		.16	2.18	.07
Non-IMPACT	28	58.18	9.28	1.76				
AMA								
IMPACT	42	47	7.64	1.18				
Non-IMPACT	42	51.17	5.7	.88		4.17	1.29	3.23**
LMA								
IMPACT	16	46.18	9.18	2.29		5.74	2.28	2.52*
Non-IMPACT	23	40.44	5.95	1.25				
Pilipino					.4509			
HMA								
IMPACT	30	59.5	21.84	3.99				
Non-IMPACT	28	60.67	17.46	3.3		1.17	4.62	.25
AMA								
IMPACT	42	52.28	9.48	1.46				
Non-IMPACT	42	54.24	9.97	1.54		1.96	1.89	1.03
LMA								
IMPACT	16	53.19	8.81	2.2		12.54	2.47	5.07**
Non-IMPACT	23	40.65	8.04	1.68				
Mathematics					.2177			
HMA								
IMPACT	30	55.04	14.82	2.7				
Non-IMPACT	28	55.46	10.9	2.06		.42	3.31	.13
AMA								
IMPACT	42	48.45	13.2	2.04				
Non-IMPACT	42	51.43	12.18	1.88		2.98	2.7	1.10
LMA								
IMPACT	16	43.13	14.38	3.59		1.96	3.91	.50
Non-IMPACT	23	41.17	8.6	1.8				

\* significant at .05

\*\* significant at .01

The comparisons of the results of the Academic Achievement Tests in English, Pilipino, and Mathematics for the third year IMPACT and Non-IMPACT secondary students show that the differences are significant at .05 level in English for the low mental ability group; and at .01 level in English for the average mental ability group, and in Pilipino for the low mental ability group.

To summarize the comparisons of achievement on the basis of mental ability groups of the IMPACT and the Non-IMPACT secondary students:

1. There are no significant differences in the achievement levels in the Academic Achievement Tests in English, Pilipino and Math between similar mental ability groups of the IMPACT and the Non-IMPACT students in the first year of the secondary;

2. There are no significant differences in the achievement levels in the Academic Achievement Tests in English, Pilipino and Math between similar mental ability groups of the IMPACT and Non-IMPACT students in the second year of the secondary level;

3. There are significant differences in the achievement levels in the Academic Achievement Tests in English for the average and the low mental ability groups and in Pilipino for the low mental ability group of the IMPACT and the Non-

IMPACT students in the third year, in English and Pilipino results are in favor of IMPACT for IMA but for AMA in English, results are in favor of Non-IMPACT; there are no significant differences between the high mental ability groups in English, Pilipino and Mathematics; between the average mental ability groups in Pilipino and Math; and between the low mental ability groups in Mathematics.

On the whole, there are no differential achievement outcomes depending on the mental ability levels of the IMPACT and the Non-IMPACT students in the secondary level.

Hypothesis 3. Are there differential cognitive outcomes depending on the sex of the IMPACT and the Non-IMPACT students?

In order to come up with statistical data in answer to this hypothesis, the IMPACT and the Non-IMPACT students were compared in their standard scores in the Academic Achievement Tests in English, Pilipino and Mathematics. Comparison used the t-test for correlated means and standard deviations. The coefficient of correlation between sex and achievement was used in the computations. The data are presented in the succeeding table.

Table XV

Comparison of the Achievement Levels in the Academic Achievement Tests in English, Filipino, and Mathematics of the First Year Secondary IMPACT and Non-IMPACT Students Classified by Sex

	N	M	SD	$\sigma_m$	$r_{xy}$	DM	$\sigma_{d_m}$	t
English					.1666			
Boys								
IMPACT	10	39.5	4.8	1.52				
Non-IMPACT	12	41.42	5.37	1.55		1.92	2.14	.89
Girls								
IMPACT	9	46.23	4.3	1.44		3.35	2.23	1.50
Non-IMPACT	8	42.88	4.96	1.75				
Pilipino					.1689			
Boys								
IMPACT	10	44.5	9.95	3.15		.08	3.75	.02
Non-IMPACT	12	44.42	7.46	2.15				
Girls								
IMPACT	9	45.67	4.3	1.44				
Non-IMPACT	8	47.12	6.68	2.36		1.45	2.72	.53
Mathematics					.0894			
Boys								
IMPACT	10	43.78	4.17	1.32				
Non-IMPACT	12	46.62	8.1	2.34		2.84	2.67	1.06
Girls								
IMPACT	7	47.72	6.74	2.25		.60	3.24	.19
Non-IMPACT	8	47.12	6.68	2.36				

The comparison of the mean scores of the IMPACT and the Non-IMPACT students in the first year of the secondary in the Academic Achievement Tests, in English, Filipino and Math on basis of sex shows that:

1. There are no significant differences in the mean scores of the girls in the IMPACT and the Non-IMPACT groups in English, Pilipino, and Mathematics;

2. There are no significant differences in the mean scores of the boys in the IMPACT and the Non-IMPACT groups in English, Pilipino and Mathematics.

Table XVI

Comparison of the Achievement Levels in the Academic Achievement Tests in English, Pilipino, and Mathematics of the Second Year Secondary IMPACT and Non-IMPACT Students Classified by Sex

	N	M	SD	$\sigma_m$	$r_{xy}$	DM	$\sigma_{d_m}$	t
English					.3848			
Boys								
IMPACT	87	46.1	9.19	.99		.75	1.29	.58
Non-IMPACT	72	45.35	8.42	.99				
Girls								
IMPACT	73	50.25	9.82	1.15		3.16	1.36	2.32*
Non-IMPACT	74	47.09	8.0	.93				
Pilipino					.0963			
Boys								
IMPACT	87	51.66	10.82	1.16		2.78	1.71	1.62
Non-IMPACT	72	48.88	10.76	1.27				
Girls								
IMPACT	73	55.82	10.38	1.22		4.2	1.66	2.53*
Non-IMPACT	74	51.62	9.83	1.15				
Mathematics					.1917			
Boys								
IMPACT	83	48.39	3.26	.36		4.39	1.06	1.31
Non-IMPACT	72	47	8.59	1.02				
Girls								
IMPACT	71	49.45	11.38	1.35		.01	1.62	.006
Non-IMPACT	74	46.44	8.15	.95				

\* significant at .05

\*\* significant at .01

The comparison of the mean scores of the second year boys and girls in IMPACT with the mean scores of the second year boys and girls in Non-IMPACT shows that:

1. The IMPACT girls have significantly higher mean scores than the Non-IMPACT girls in English and in Pilipino, but they have comparable mean score with the Non-IMPACT girls in Math.

2. The second year IMPACT boys and the second year Non-IMPACT boys have comparable mean scores in English, Pilipino, and mathematics.

Table XVII

Comparison of the Achievement Levels in the Academic Achievement Tests in English, Filipino, and Mathematics of the Third Year Secondary IMPACT and Non-IMPACT Students Classified by Sex

	N	M	SD	$\sigma_m$	$r_{xy}$	DM	$\sigma_{d_m}$	t
English					.168			
Boys								
IMPACT	43	51.28	9.78	1.49		3.66	2.15	1.7
Non-IMPACT	44	47.62	10.63	1.6				
Girls								
IMPACT	65	53	11.18	1.39		1.55	1.98	.78
Non-IMPACT	65	51.45	11.76	1.46				
Pilipino					.2886			
Boys								
IMPACT	43	52.83	16.39	2.49		4.74	3.05	1.55
Non-IMPACT	44	48.09	13.3	2.0				
Girls								
IMPACT	65	58.68	11.0	1.37		2.4	1.84	1.30
Non-IMPACT	65	56.28	10.82	1.35				
Mathematics					.0519			
Boys								
IMPACT	43	48.25	16.72	2.55		.04	3.23	.012
Non-IMPACT	44	48.29	13.33	2.0				
Girls								
IMPACT	65	49.82	13.93	1.73		.34	2.51	.14
Non-IMPACT	65	49.48	14.72	1.83				

The comparison of the mean scores of the third year boys and girls of IMPACT and of the third year boys and girls of Non-IMPACT in the Academic Achievement Tests in English, Filipino, and Mathematics shows that:



1. The IMPACT boys and the Non-IMPACT boys have comparable mean scores in English, Pilipino, and Mathematics;

2. The IMPACT girls and the Non-IMPACT girls have comparable mean scores in English, Pilipino, and Mathematics.

To summarize the comparison data on achievement on the basis of sex:

1. The IMPACT girls have significantly higher mean score in one comparison out of three in English, in favor of the second year IMPACT girls;

2. The IMPACT girls have significantly higher mean score in one comparison out of three in Pilipino, in favor of the second year IMPACT girls;

3. The IMPACT girls have comparable mean scores with the Non-IMPACT girls in all three comparisons in Mathematics;

4. The IMPACT boys have comparable mean scores with the Non-IMPACT boys in all three comparisons in English;

5. The IMPACT boys have comparable mean scores with the Non-IMPACT boys in all three comparisons in Pilipino;

6. The IMPACT boys have comparable mean scores with the Non-IMPACT boys in all three comparisons in Mathematics.

Hypothesis 4. Are there differential cognitive outcomes depending on the age level of the IMPACT and the Non-

IMPACT students?

To come up with data to answer the research question, the IMPACT and the Non-IMPACT students in the second, and third years in the secondary level were categorized into three groups on the basis of age. The categories are: Normal age (NA), Underage (UA), and Overage (OA). The first year IMPACT and Non-IMPACT students are all overaged because they dropped out-of-school in a year or two. So no comparison is made for them on the basis of age levels. The comparison of the mean scores took into consideration the contingency coefficient for age and achievement in English, Pilipino and Math as indicated by the students' standard score in the Academic Achievement Tests. The data are given in the succeeding tables.

Table XVIII

Comparison of the Achievement Levels in the Academic Achievement Tests in English, Filipino, and Mathematics of the Second Year IMPACT and Non-IMPACT Students Classified by Age Levels

	N	M	SD	$\sigma_m$	$r_{xy}$	DM	$\sigma_{d_m}$	t
English					.19			
NA								
IMPACT	48	47.13	7.3	1.05				
Non-IMPACT	50	47.68	8.7	1.23		.55	1.59	.34
UA								
IMPACT	35	49.49	9.66	1.63		5.12	1.99	2.57*
Non-IMPACT	33	44.37	6.98	1.22				
OA								
IMPACT	25	47.4	7.32	1.47		1.72	2.07	.83
Non-IMPACT	32	45.68	8.57	1.52				
Pilipino					.29			
NA								
IMPACT	48	53.11	8.67	1.25		.15	1.89	.079
Non-IMPACT	50	52.96	10.78	1.53				
UA								
IMPACT	35	54	10.43	1.76		4.21	2.91	1.44
Non-IMPACT	33	49.79	14.3	2.49				
OA								
IMPACT	25	55.92	8.58	1.72		8.47	2.26	3.74**
Non-IMPACT	32	47.45	9.23	1.63				
Mathematics					.27			
NA								
IMPACT	46	48.09	9.02	1.33				
Non-IMPACT	50	50.13	9.69	1.37		2.04	1.83	1.11
UA								
IMPACT	35	49.8	13.49	2.28		4.13	2.52	1.63
Non-IMPACT	33	45.67	7.4	1.29				
OA								
IMPACT	25	47.92	8.48	1.69				
Non-IMPACT	32	48.08	9.58	1.69		.16	2.30	.07

\*\* significant at .01 level

The comparison of the mean scores of the age groups of the second year IMPACT and of the corresponding age groups of second year Non-IMPACT shows that:

1. The Underage IMPACT group has a significantly higher mean score than the Underage Non-IMPACT group, in English:

2. The Overage IMPACT group has a significantly higher mean score than the Overage Non-IMPACT group in Pilipino; but the two corresponding age groups have comparable mean scores in English and Mathematics;

3. The Normal Age IMPACT group has comparable mean scores with the Normal age Non-IMPACT group in English, Pilipino, and Mathematics.

Table XIX

Comparison of the Achievement Levels in the Academic Achievement Tests in English, Pilipino, and Mathematics of the Third Year Secondary IMPACT and Non-IMPACT Students Classified By Age Levels

	N	M	SD	$\sigma_m$	$r_{xy}$	DM	$\sigma_{d_m}$	t
English					.39			
NA								
IMPACT	40	49.13	8.78	1.39				
Non-IMPACT	40	49.65	10.08	1.59		.52	1.94	.27
UA						4.7	1.84	2.55*
IMPACT	45	56.44	8.59	1.28				
Non-IMPACT	42	51.74	9.97	1.54				
OA						6.1	3.24	1.88
IMPACT	18	47.67	7.57	1.78				
Non-IMPACT	14	41.57	11.37	3.04				
Pilipino					.31			
NA								
IMPACT	40	54.18	10.67	1.69		1.3	2.31	.01
Non-IMPACT	42	52.88	11.39	1.76				
UA						6.3	2.26	2.78**
IMPACT	45	59.18	10.75	1.6				
Non-IMPACT	42	52.88	11.39	1.76				
OA						.12	4.22	.028
IMPACT	18	52.95	11.23	2.65				
Non-IMPACT	14	53.07	13.37	3.57				
Mathematics					.31			
NA								
IMPACT	40	44.28	16.67	2.64				
Non-IMPACT	40	47.65	15.3	2.42		3.37	3.4	.99
UA						2.57	2.54	1.01
IMPACT	45	54.45	9.2	1.37				
Non-IMPACT	42	51.88	14.85	2.29				
OA						3.16	4.23	.74
IMPACT	18	46.95	10.99	2.59				
Non-IMPACT	14	43.79	13.57	3.63				

\* significant at .05

\*\* significant at .01

The comparison of the mean scores of the three age groups of third year IMPACT and of the corresponding age groups of third year Non-IMPACT shows that:

1. The Underage IMPACT groups have significantly higher mean scores than the Underage Non-IMPACT groups in English and Filipino, but both groups have comparable mean scores in Math;

2. The Overage IMPACT groups have comparable mean scores with the Overage Non-IMPACT groups in all three areas;

3. The Normal Age groups of IMPACT and Non-IMPACT students have comparable mean scores in English, Filipino and Mathematics;

To summarize the comparisons of achievement levels on the basis of age levels:

1. The Underage IMPACT groups have significantly higher mean scores in the two comparisons in English;

2. The Underage IMPACT groups have significantly higher mean score in the one comparison in Filipino;

3. The Underage IMPACT groups have comparable mean scores with the Underage Non-IMPACT groups in all the three comparisons in Math;

4. The Normal Age IMPACT groups have comparable mean scores with the Normal Age Non-IMPACT groups in all the three

subject areas in English, Filipino and Math.

5. The Overage IMPACT groups have comparable mean scores with the Overage Non-IMPACT groups in all three comparisons in English;

6. The Overage IMPACT groups have significantly higher mean score than the Overage Non-IMPACT groups in one comparison out of three in Filipino;

7. The Overage IMPACT groups have comparable mean scores with the Overage Non-IMPACT groups in three comparisons in Math.

Hypothesis 5: Are there differential cognitive outcomes depending on the socioeconomic status of the IMPACT and the Non-IMPACT students?

The IMPACT and the Non-IMPACT students in the three curriculum years in the secondary level were grouped into three categories on the basis of their socioeconomic status. Then the mean scores of the corresponding socioeconomic status groups of the IMPACT and the Non-IMPACT students were compared for differences. The comparison took into consideration the contingency coefficient for achievement and socioeconomic status. The categories are Upper-Middle (UM), Lower-Middle (LM), and Low (L). The data are presented in the succeeding tables.

Comparison of the Achievement Levels in the Academic Achievement Tests in English, Pilipino, and Mathematics of the First Year Secondary IMPACT and Non-IMPACT Students Classified by Socioeconomic Status

	N	M	SD	$\sigma_m$	$r_{xy}$	DM	$\sigma_a_m$	t
English					.41			
LM								
IMPACT	3	45	7.2	4.16		3.14	5.02	.62
Non-IMPACT	4	41.86	7.23	3.62				
L								
IMPACT	10	43.65	6.36	2.02		.87	2.27	.38
Non-IMPACT	9	42.78	4.49	1.47				
Pilipino					.44			
LM								
IMPACT	3	44.34	8.22	4.75		3.34	4.59	.72
Non-IMPACT	4	41	3.8	1.9				
L								
IMPACT	10	45.84	7.4	2.34				
Non-IMPACT	9	49.23	9.16	3.05		3.39	3.45	.98
Mathematics					.23			
LM								
IMPACT	3	44.34	5.09	2.93				
Non-IMPACT	4	47.5	8.4	4.2		3.16	4.98	.63
L								
IMPACT	10	46.36	5.97	1.89				
Non-IMPACT	9	47.56	7.11	2.37		1.2	2.95	.41

There are only two socioeconomic status categories for the first year IMPACT and Non-IMPACT students. A comparison of the mean scores of similar categories of the IMPACT and the Non-IMPACT groups shows that the differences between the categories in the three subject areas are all statistically not significant.

However, the obtained statistics are not conclusive considering the smallness of the sample.



Table XXI

Comparison of the Achievement Levels in the Academic Achievement Tests in English, Filipino, and Mathematics of the Second Year Secondary IMPACT and Non-IMPACT Students Classified by Socioeconomic Status

	N	M	SD	$\sigma_m$	$r_{xy}$	DM	$\sigma_{d_m}$	t
English					.32			
UM								
IMPACT	5	50.65	10.51	4.69		1.31	7.42	.17
Non-IMPACT	3	49.34	10.86	6.28				
LM								
IMPACT	68	50.96	9.7	1.18		2.89	1.33	2.17*
Non-IMPACT	68	48.07	6.42	.78				
L								
IMPACT	58	44.85	7.04	.93		.19	1.32	.14
Non-IMPACT	60	45.04	8.02	1.04				
Filipino					.28			
UM								
IMPACT	5	50.24	9.52	4.25		8.24	4.54	1.81
Non-IMPACT	3	42	3.63	2.09				
LM								
IMPACT	68	55.75	11.49	1.39		3.46	1.83	1.89
Non-IMPACT	68	52.29	10.81	1.31				
L								
IMPACT	58	50.85	10.48	1.38		1.63	1.83	.89
Non-IMPACT	60	49.22	10.19	1.32				
Mathematics					.25			
UM								
IMPACT	5	49.7	14.09	6.29		2.36	9.72	.24
Non-IMPACT	3	47.34	13.54	7.83				
LM								
IMPACT	68	51.12	12.91	1.56		1.52	6.12	.24
Non-IMPACT	68	49.6	10.14	1.23				
L								
IMPACT	55	47.6	11.46	1.5				
Non-IMPACT	60	47.65	8.0	1.03		.05	1.76	.02

\* significant at .05

The comparisons of the mean scores of the second year IMPACT and the Non-IMPACT socioeconomic status categories show that:

1. The Upper-Middle IMPACT group has comparable mean scores with the Upper-Middle Non-IMPACT group in English, Pilipino, and Math;
2. The Lower-Middle IMPACT group has significantly higher mean scores in English but not in Math, and Pilipino;
3. The Low IMPACT group compares equally with the Non-IMPACT group in the mean scores in all the three subject areas.

Table XXII

Comparison of the Achievement Levels in the Academic Achievement Tests in English, Filipino, and Mathematics of the Third Year Secondary IMPACT and Non-IMPACT Students Classified by Socioeconomic Status

	N	M	SD	$\sigma_m$	$r_{xy}$	DM	$\sigma_{d_m}$	t
English					.45			
UM								
IMPACT	14	61	9.28	2.48				
Non-IMPACT	10	62.1	8.32	2.64		1.1	3.23	.34
LM								
IMPACT	44	53.1	11.3	1.7				
Non-IMPACT	42	53.4	12.72	1.96		.3	2.31	.21
L								
IMPACT	56	49.25	9.25	1.24		4.38	1.48	2.95**
Non-IMPACT	52	44.87	7.97	1.10				
Pilipino					.37			
UM								
IMPACT	14	59.5	9.17	2.45		1.6	3.02	.52
Non-IMPACT	10	57.9	14.37	2.22				
LM								
IMPACT	44	59.35	12.39	1.87		1.06	2.32	.45
Non-IMPACT	42	58.29	10.73	1.66				
L								
IMPACT	56	52.69	10.68	1.43		4.19	1.95	2.15*
Non-IMPACT	51	48.5	11.11	1.54				
Mathematics					.38			
UM								
IMPACT	14	55.07	14.22	3.8				
Non-IMPACT	10	59.5	16.94	5.36		4.43	6.07	.72
LM								
IMPACT	44	53.65	16.65	2.5		1.36	2.95	.46
Non-IMPACT	42	52.29	12.9	1.99				
L								
IMPACT	56	47.66	13.91	1.86		3.88	2.33	1.66
Non-IMPACT	52	43.78	12.31	1.7				

\* significant at .05

\*\* significant at .01

Comparisons of the mean scores of the third year IMPACT and the Non-IMPACT socioeconomic status categories show that:

1. The Upper Middle IMPACT group has comparable mean scores with the Non-IMPACT group in English, Filipino and Math;
2. The Lower Middle IMPACT group has comparable mean scores with the Non-IMPACT group in all the three subject areas;
3. The Low IMPACT group has significantly higher mean scores in English, and Filipino.

To summarize the data on the comparison of the achievement levels of the IMPACT and the Non-IMPACT groups on the basis of socioeconomic status:

1. The Upper Middle IMPACT groups compare equally with the Upper Middle Non-IMPACT groups in three comparisons in English, Filipino and Math.
2. The Lower-Middle IMPACT groups have a significantly higher mean score in one comparison, out of three, in English.
3. The Lower-Middle IMPACT group have a significantly higher mean score in one comparison, out of three, in Filipino.
4. The Lower-Middle IMPACT groups have mean scores which are statistically comparable with those of the Lower-Middle Non-IMPACT groups in all three comparisons in Mathematics.
5. The Low IMPACT groups have a significantly higher mean score in one comparison, out of three, in English;

6. The Low IMPACT groups have a significantly higher mean score in one comparison, out of three, in Filipino.

7. The Low IMPACT groups have comparable mean scores in all three comparisons, in Mathematics.

Hypothesis 6. Do leavers from the IMPACT program show achievement levels significantly different from the achievement of the leavers from the conventional programs?

To answer this research question the IMPACT leavers and the Non-IMPACT leavers who took the Academic Achievement Tests in the Philippine Educational Placement Tests were matched on the basis of their means and standard deviations in the Mental Ability Test which they took before they left school in February-March 1978. The leavers were further grouped on the basis of the grade level completed before they left school. Although some of the IMPACT leavers had one or two years in the secondary before they left school, they could not be presented here for comparison for lack of counterpart among the Non-IMPACT leavers.

The succeeding tables present the comparison of the achievement of the IMPACT and the Non-IMPACT leavers.

Table XXIII

Comparison of the Achievement Levels in the Academic Achievement Tests of the IMPACT and the Non-IMPACT Leavers Who Completed Level V or Grade V

MAT Data						
	IMPACT		Non-IMPACT			
N	8		8			
M	40.125		37.25			
SD	7.93		7.54			
m	2.8		2.67			
DM			2.88			
d <sub>m</sub>			3.86			
t			.75			
Achievement Data						
	English		Pilipino		Math	
	IM	NI	IM	NI	IM	NI
M	40	39.78	40.25	38.38	41.63	34.75
SD	4.9	4.36	5.14	4.71	3.97	5.43
m	1.73	1.54	1.82	1.66	1.4	1.92
r <sub>xy</sub>	.23		.2407		.25	
DM	.22		1.87		6.88	
d <sub>m</sub>	2.25		2.39		2.30	
t	.09		.78		2.99**	

\*\*significant at .01

The data for the Level 5 IMPACT and Grade 5 Non-IMPACT leavers show that the two groups are statistically comparable in terms of their mental ability score.

The comparison of their achievement in the Academic Achievement Tests shows that both groups are comparable in English and in Filipino, but the IMPACT group achieved significantly higher in Math than the Non-IMPACT leavers did. The difference is significant at .01 level.

The comparison of the achievement level of the IMPACT and the Non-IMPACT subjects who left school after completion of Level VI or Grade VI is presented in the succeeding table.

Table XXIV

Comparison of the Achievement Levels in the Academic Achievement Tests of the IMPACT and the Non-IMPACT Leavers Who Completed Level VI or Grade VI

MAT Data						
	IMPACT		Non-IMPACT			
N	8		13			
M	43.63		39.42			
SD	5.48		9.25			
$\sigma_m$	1.94		2.67			
DM			4.21			
$\sigma_{d_m}$			3.3			
t			1.28			
Achievement Data						
	English		Pilipino		Math	
	IM	NI	IM	NI	IM	NI
M	40.3	39	41.4	31.5	10.43	10.62
SD	11.46	13.9	15.8	15.42	2.06	3.48
$\sigma_m$	4.04	3.86	5.58	4.28	.78	.97
$r_{xy}$	.23		.2407		.25	
DM	1.3		9.9		.19	
$\sigma_{d_m}$	5.43		6.82		1.20	
t	.24		1.45		.16	



The Level VI IMPACT leavers and the Grade VI Non-IMPACT leavers are also comparable in terms of their mental ability test scores. Both groups achieved equally in all the three subject areas in the Academic Achievement Tests as shown by the t-ratios in the above table.

Hypothesis 7: Are there differential cognitive outcomes depending on the mental ability shown by the IMPACT and the Non-IMPACT leavers?

No data could be given in answer to this hypothesis because the IMPACT and the Non-IMPACT leavers who took the Academic Achievement Tests all fall under the Average Mental Ability Category. Therefore, no comparison of achievement could be made on the basis of the mental ability categories.

Hypothesis 8: Are there differential cognitive outcomes depending on the sex of the IMPACT and the Non-IMPACT leavers?

In order to provide the answer to the question, the Level V or Grade V and the Level VI or Grade VI IMPACT and Non-IMPACT leavers were combined so as to have adequate sample on the basis of the sex categories.

The comparison of the outcomes are given in the succeeding table.

Table XXV

Comparison of the Achievement Levels of the IMPACT  
and the Non-IMPACT Leavers Classified by Sex

Categories	N	M	SD	$\bar{C}_m$	$r_{xy}$	DM	$\bar{C}_{d_m}$	t
English					.3036			
Boys								
IMPACT	5	39.6	2.73	1.22		.1	3.25	.03
Non-IMPACT	2	39.5	4.5	3.19				
Girls								
IMPACT	11	42.73	5.69	1.72		3.73	1.9	1.96*
Non-IMPACT	18	39	4.29	1.01				
Pilipino					.3251			
Boys								
IMPACT	5	38.8	6.66	2.97		3.8	3.65	1.04
Non-IMPACT	2	35	3.5	2.47				
Girls								
IMPACT	11	44.64	6.82	2.06		5.69	2.1	2.70**
Non-IMPACT	18	38.95	5.17	.83				
Mathematics					.5279			
Boys								
IMPACT	5	38.6	3.498	1.56		16.1	4.26	3.77**
Non-IMPACT	2	22.5	6.77	4.77				
Girls								
IMPACT	11	41.9	3.74	1.13		4.68	1.6	2.92**
Non-IMPACT	18	37.22	6.45	1.52				

\* Significant at .05      \*\* Significant at .01

The comparison of achievement levels of the IMPACT and the Non-IMPACT leavers shows that the IMPACT girls have significantly higher mean scores in English, Pilipino and Math; while the IMPACT boys have significantly higher mean score in Math; but both the IMPACT and the Non-IMPACT boys have comparable

mean scores in English and Pilipino.

The differences of the boys and the girls are all significant at .01 level, but in English, the difference in favor of IMPACT girls is significant at .05 level.

Hypothesis 9: Are there differential cognitive outcomes depending on the socioeconomic status of the IMPACT and the Non-IMPACT leavers?

No data could be presented in answer to this research question because the IMPACT and the Non-IMPACT leavers who took the Academic Achievement Tests all fall under the low socioeconomic status. Therefore, no comparison can be made on the basis of the socioeconomic status categories.

To summarize the comparative data on achievement of the IMPACT and the Non-IMPACT leavers:

1. The Level 5 IMPACT leavers have significantly higher mean score in Math than the Non-IMPACT group do; but both groups have comparable mean scores in English and Pilipino;
2. The Level 6 IMPACT leavers have comparable mean scores with the Grade 6 Non-IMPACT leavers in all the three subject areas;
3. The IMPACT boys have significantly higher mean score in Math than the Non-IMPACT boys do, but they are equally comparable in English and Pilipino;
4. The IMPACT girls have significantly higher mean scores in English, Pilipino and Math than the Non-IMPACT girls do;

5. No comparison of achievement could be done on the basis of mental ability level and of their socioeconomic status for the reason that the leavers from both group fall under only one category for mental ability, and for socioeconomic status.

What do parents say about their children's cognitive learning in the IMPACT schools?

Here are the comments on pupil achievement obtained from random interview of parents of IMPACT children in the three Philippine sites:

"There is progress in the academic achievement of my children who transferred from Rosaurc Elementary School in Tondo, Metro Manila. The written work of my children is greatly improved."

"Project IMPACT improves the skills and enriches the knowledge of the children. If the child has inborn talents, he is very much improved in Project IMPACT."

"My children have learned much in IMPACT. When they come home I hear them speak English. Even if their English is not straight English, this is a sign that they are using what they learn."

"When my son Renato came to the IMPACT school, he could not read, but now I'm thankful that he can read in English and in Filipino and can be a good programmed teacher."

"IMPACT is better than the conventional system. Learning here is more advanced. My children are well equipped with skills and knowledge needed in later learning."

"I have observed that my Level 5 and Level 1 children are much better than my children who have not studied in the IMPACT school."

"My child in IMPACT is better than my children who have studied in Manila. My Level 1 child can now read well while the other two can't read well."

"My son, Wilfredo is more advanced in his learning compared to my other child studying in a traditional school."

"My son, Luciano can understand his lessons faster than his older brother who is not studying in IMPACT."

"My child who is studying in IMPACT is better than my other child who is not studying in IMPACT. He can read faster and better than his brother who is not studying in IMPACT."

These parents have pointed out that cognitive learning for their children in IMPACT has been more pronounced than for their other children who did not have the chance to study in the IMPACT school. In particular, they pointed out better literacy skills as shown by their ability to speak, to read, and to understand what they read. However, some parents though realizing the tangible positive effects of

the new system on the acquisition of the literacy skills still would want them to learn not from the modules or from programmed teachers but directly from the professional teachers, as shown by the following quotes:

"I don't like that programmed teachers will teach my child because it has a very great difference than the real teachers."

"My child who is studying in IMPACT has learned from his modules but his progress is slow because the module cannot talk. It is true that the module is good but it is good to have a teacher to explain the lesson. There are children who cannot learn if they cannot hear the explanation of the lesson."

"My daughter who is studying in IMPACT has learned many things. But her progress is slow because the modules, especially in Social Studies and Math are very difficult."

"My child in IMPACT sometimes finds difficulty in the module. He cannot solve the problems that need two or three steps because he cannot understand the module. He can understand this if the teacher will explain to him."

These parents still cling to the old thinking that children learn better only from professional teachers who decide what these children should learn, when, and how they should learn such things.

Lucita, who used to serve as IS Aide in one of the Learning Centers in Naga enrolled herself in the first year of the secondary level in 1979. At the end of the school year 1979-1980 she took the placement exam administered by representatives of the Ministry of Education and Culture. Her score in the exam showed that she was qualified for college level. When asked how she did it she replied that her having to read the modules in her role as IS Aide had really helped her in the test and in her lessons in the secondary level.

This chapter has presented the cognitive outcomes of the IMPACT learning system which show that:

1. In general, the IMPACT students and leavers performed equally with, if not better than, their counterpart in the Non-IMPACT students in the Academic Achievement Tests in English, Filipino, and Math, and in their classes as shown by their teacher-grades;
2. In particular, the data show that for these specific groups:
  - a. The IMPACT students achieved significantly higher mean scores in English and Filipino, and they achieved equally with the Non-IMPACT groups in Math;
  - b. Among the third year secondary students, the low mental ability groups achieved significantly

higher mean scores than their counterpart among the Non-IMPACT students in English and Pilipino;

c. In three comparisons out of nine, the Underage IMPACT students obtained significantly higher mean scores than their Underage counterpart, in English and Pilipino.

d. In two comparisons out of nine, the Low socioeconomic group obtained significantly higher mean score in English and Math than the Non-IMPACT students of the same socioeconomic status;

e. In five comparisons out of twelve, the IMPACT leavers obtained significantly higher mean scores in Math, English, and Pilipino;

3. Parents who were interviewed pointed out that their children who studied in the IMPACT schools achieved better literacy skills than their other children who studied in the conventional schools.

This particular group of findings tends to put some basic features of the IMPACT learning management system in better light:

1. That the IMPACT modules which have been written and produced by writers whose training and experience was that of classroom teachers, have served to deliver the objectives of elementary education as much as do the pro-



professional teachers, who stand before their class to teach daily;

2. That the learning modes such as programmed teaching by elder pupils and peer learning among elder pupils have been as effective as classroom instruction by professional teachers;

3. That the negative concern of some educators and parents about IMPACT's language program is not supported by the findings of the study;

4. That the teacher-pupil ratio of approximately 100 pupils to one professionally trained teacher does not militate against learner achievement.

Considering previous findings that the IMPACT system costs 50% less than the conventional system to operate, and these present findings on the performance of the IMPACT graduates and leavers, it is safe to say that IMPACT is as effective as the conventional system, if not better than; but is more economical than the conventional system.

Further refinement of the IMPACT modules particularly in terms of the strategies and the vocabulary levels used, and of the learning modes to emphasize more peer group learning, will result in much better cognitive performance of the learners.

## CHAPTER III

### THE NON-COGNITIVE OUTCOMES

"The chief contribution of experimental programs is not so much higher academic achievement as it is the development of desirable attitudes - the affective aspect of education that is largely neglected by conventional programs.<sup>1</sup>

Does the IMPACT learning system result in increased non-cognitive learning?

One of the teacher-advisers gave this comment on the IMPACT student in her class: "She explains her side when her attention is called." This comment implies that contrary to the culture's normative behavior pattern for children who must listen when criticized but who must never say anything in their defense, this particular student speaks out to explain her side.

Another teacher said of her IMPACT graduate, "She has shown good leadership, she knows how to handle her classmates."

An employee, when asked what characteristics of his worker he liked best, gave the following comment: "He is conscientious in his work, diligent and alert. That is why I like him."

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<sup>1</sup>Henry Clay Lindgren, Educational Psychology in the Classroom. 5th edition (New York: John Wiley and Sons, Inc., 1976), p. 292.

Still another teacher commented that the IMPACT graduates in her science class excelled the others. She said, "They do not like to copy the notes from the blackboard, they want to perform the experiment and observe what happens in the process."

Parents say that their children have achieved self-confidence.

"When my children were studying in Manila, they had inferiority complex, but now that they are in IMPACT school they're active and have no stage fright. I am really amazed with the programmed teacher who can make children learn."

"My children learned to become good teachers and know how to face people."

"Programmed teaching has made my daughter more confident and less shy."

Parents point out the development of independent study habits as one point in favor of IMPACT learning system.

"My daughter, Carmelina, is interested to study her lessons and will not wait for me to tell her to study."

"IMPACT's way of learning is good. Children learn to study by themselves."

"IMPACT makes my child more responsible. She studies her lessons without being told to do so."

When Florence<sup>e</sup> was asked whether she did not feel

uneasy during her first days in secondary school, considering that she was younger than most of them because she finished the elementary cycle in only five years instead of six years, she replied, "No, even if I am the smallest and the youngest, my classmates who are older and bigger than I am ask me to help them answer questions." When asked if she did not feel annoyed at having to help her classmates find the answers to their assignments, she immediately said, "No, I am used to being the programmed teacher and I like helping them."

Marcial, one of the IMPACT graduates studying in the secondary level said that he was very much amazed to find out that some of his classmates who were much older than he was, did not know how to read and they asked him to help them.

These above comments from teachers, parents and students confirm the conclusions arrived at by this researcher after a series of observations of the IMPACT graduates in classroom or school settings. These conclusions refer to the non-cognitive effects of the IMPACT learning system on the personality of the learners. These are the acquisition of self-confidence and the development of leadership qualities.

#### 1. Self-confidence.

The IMPACT graduates who are in the secondary schools

carry themselves about their daily tasks with a happy countenance, and they are usually among the first to raise hands to volunteer suggestions or their services on what may be done. They are not "afraid" to speak out in instances that require one to do so, they seem "outspoken" or rather "forward" in the context of cultural norms.

## 2. Leadership.

IMPACT graduates like Merofe, Gerry, and Mimie easily gain the spontaneous recognition as leaders by their classmates, and they do not brag about their ability. They take on the tacit assignment of responsibility as a matter of fact. They offer suggestions or directions on how an activity may best be carried out very spontaneously, too and they do not appear to be imposing on their classmates.

This study has also come up with quantitative data on the non-cognitive outcomes of the IMPACT learning system. The data concern the self-concept and the attitudes of the IMPACT and the Non-IMPACT students and school leavers as indicated by their responses to self-concept and attitude questionnaires.

But before presenting the data relative to the research questions on the non-cognitive outcomes, a discussion of the

reliability and validity checks for the instruments used is considered necessary. The responses obtained from the research sample were given values of 1 and 0; the expected response was given a value of 1, and all other responses were given zero value.

An item analysis was made for each item in the scales of the two instruments in order to come up with the mean, the standard deviation, and the item-to-scale correlation coefficient of every item, and the mean, the standard deviation and the internal consistency coefficients of the scales.<sup>2</sup> Furthermore, the items in the questionnaires were submitted to six judges to determine the content validity of the items in the scale.<sup>3</sup> The judges were told about the scales and their meanings and they were asked to classify the items under the different scales.

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<sup>2</sup>Sincere thanks and appreciation goes to Dr. Dali S. Naga of IKIP Rawamangun, Jakarta Timur who generously gave the program for the calculations on a micro computer.

<sup>3</sup>The judges were Miss Warkitri from Universiti Negeri Surakarta, Indonesia; Mrs. Ana Suparno from BP<sub>3</sub>K of the Ministry of Education in Jakarta; Dr. Nonglak Wiratchai of the Graduate School of Srinakharinwirot University in Thailand; Mrs. Ofelia Veniegas of SEAMEO INNOTECH, Quezon City; Mrs. Lesmes Avena, District Supervisor of Sapang Palay, San Jose del Monte Bulacan; and Mohd Hashim bin Mohd Salleh of Project INSPIRE in Penang, Malaysia.

## The Components of the Self-Concept Questionnaire

## Scale A: Physical Presentation

<u>Indicators</u>	<u>No. of Items</u>
1. physical appearance	1
2. energy	1
3. voice	1
4. voice volume of speech	1
5. attention span	1
6. posture	1

## Scale B: Interaction With Environment

<u>Indicators</u>	<u>No. of Items</u>
1. proper use of learning materials	2
2. ability to finish any assigned tasks well	2
3. obedience to rules and regulations	1
4. sense of responsibility for the cleanliness of his school	1
5. pride in one's work	1
6. willingness to try new ways of doing things	1

## Scale C: Interaction With Peers

<u>Indicators</u>	<u>No. of Items</u>
1. getting along with classmates	3
2. doing one's share in class	2
3. respect for differences with others	1

## Scale D: Interaction With Teachers

<u>Indicators</u>	<u>No. of Items</u>
1. absence of fear of teacher	2
2. active participation in class discussion	1
3. willingness to do things for the teacher	2
4. ability to understand the teacher's explanation or directions	2
5. ability to finish work with minimum assistance from the teacher	1
6. respect for teachers	1
7. teacher's attitude towards the pupil/student	1

## The Components of the Attitude Questionnaire

Scale A: Willingness to perform roles in the social, moral and economic development of the group(s) where the individual belongs.

<u>Indicators</u>	<u>No. of Items</u>
1. Accepts that laws and regulations contribute to group/community order	3
2. Decides to take an active role in the introduction of innovation that contributes to national development	3
3. Helps others in group work as well as in carrying out their individual tasks	3
4. Accepts systematic ways of planning and solving problems as a necessary support to economic development	3



Scale B: Willingness to perform manipulative work and similar responsibilities at home and in the community.

<u>Indicators</u>	<u>No. of Items</u>
1. Shows desire to perform one's task well	3
2. Shows willingness to cooperate with others in their tasks	3

Scale C: Judges moral issues, social and economic policies and practices in terms of public welfare.

<u>Indicators</u>	<u>No. of Items</u>
1. Believes that people live in harmony and peace because of interdependence	3
2. Believes that the Philippines is an equal of other nations/countries	2
3. Accepts that government exists to regulate people's activities	3
4. Recognizes that people's values about population affect economic development	3
5. Realizes that economic development is affected by several factors, such as technology	3

Scale D: Manifests a positive attitude to work independently.

<u>Indicators</u>	<u>No. of Items</u>
1. Believes that the individual should be ready to perform varied roles in the family or in the group	5

<u>Indicators</u>	<u>No. of Items</u>
2. Shows desire to perform any task to the best of one's ability	3
3. Shows initiative to work independently	5

The scales for the self-concept questionnaire were adapted from Echard's Self-Report for the Measurement of Self-Concept in Educational Setting but the indicators were based on the non-cognitive aspects that the IMPACT learning system has aimed to achieve in the learners. Meanwhile, the scales for the attitude questionnaire have been prepared by the SOUTELE group of the Ministry of Education and Culture as the table of specifications for the Attitude Inventory portion of the SOUTELE Tests. But the items were constructed by the researcher specifically for the use in this follow-up study.

For the validity check, the item is considered valid if at least two (2) of the judges assigned it to its proper places. For the reliability check, an item is good if it has an item to scale correlation of .30, an internal consistency coefficient of .60 and no choice has more than 85% of the respondents taking it.<sup>4</sup>

The results of the validity and reliability checks of

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<sup>3</sup>See Bibliography.

<sup>4</sup>This is based on the lecture of Dr. William Cummings who conducted the two-week Seminar on Measuring Non-Cognitive Aspects of Educational Processes sponsored by IDRC in Singapore from August 31-September 11, 1981.

the instruments are presented in Tables XXVI and XXVII.

Table XXVI

Data on the Validity and Reliability of the Self-Concept-Questionnaire

Scale and Item Nos.	$M_i$	$SD_i$	$r_i$	$P_i$	V	N	$M_s$	$SD_s$	$r_{tt}$
Scale A. Physical Presentation						203	2.66	1.25	.3039
1	.428	.49	.466	.43	6				
2	.416	.49	.463	.41	4				
3	.729	.444	.422	.73	5				
4	.532	.498	.398	.54	5				
5	.231	.42	.40	.23	6				
6	.328	.469	.482	.33	6				
Scale B. Interaction With Environment						203	5.147	1.89	.60
1	.80	.393	.527	.81	6				
2	.66	.47	.578	.66	6				
3	.694	.46	.566	.69	5				
4	.753	.43	.51	.75	6				
5	.574	.494	.559	.58	6				
6	.458	.498	.424	.46	6				
7	.768	.42	.545	.77	3				
8	.428	.494	.39	.43	6				
Scale C. Interaction With Peers						203	2.98	1.47	.40
1	.413	.492	.418	.41	6				
2	.566	.495	.545	.57	6				
3	.669	.470	.534	.67	6				
4	.389	.487	.358	.39	6				
5	.546	.497	.635	.54	5				
6	.413	.492	.504	.41	5				
Scale D. Interaction With Teachers						203	.481	1.86	.48
1	.541	.498	.381	.54	6				
2	.313	.464	.29	.32	6				
3	.443	.496	.293	.44	5				
4	.544	.498	.465	.55	6				
5	.527	.499	.448	.53	6				
6	.399	.489	.426	.40	6				
7	.482	.499	.469	.48	4				
8	.812	.39	.358	.81	6				
9	.541	.498	.514	.54	4				
10	.206	.405	.254	.21	4				

- $M_i$  = mean for item  
 $SD_i$  = standard deviation for item  
 $r_i$  = item-to-scale correlation coefficient  
 $M_s$  = mean of scale  
 $SD_s$  = standard deviation of scale  
 $r_{tt}$  = internal consistency coefficient obtained through  
 Kuder-Richardson formula #20  
 $V$  = number of judges assigning the items to the right scale  
 $P_i$  = proportion passing an item

The results of the data for the Self-Concept Questionnaire showed high item-to-scale correlation exceeding the mark of .30 except for Items 2, 3 and 10 of Scale D. These items are:

I AM AFRAID TO TALK TO MY TEACHERS ABOUT MY LESSONS AND THINGS IN SCHOOL.

The percentages for this item are 46 for 0 value and 54 for the 1 value.

I SELDOM ASK QUESTIONS DURING OUR DISCUSSION WITH THE TEACHER.

The percentages for the 0 and the 1 values 68 and 32, respectively.

I THINK MY TEACHERS LIKE ME.

The percentages are 79 for 0 value and 21 for the 1 value.

The internal consistency coefficients for Scale A, Scale

C, and Scale D do not reach the criterion of .60.

The items were correctly classified by most of the judges, the lowest being three (3) judges out of six.

In spite of the <sup>low</sup> r's the items were retained because of the validity indicators and the ability to discriminate among the respondents; not one of the items got more than 85% of the respondents choosing each item.

Table XXVII

Data on the Validity and Reliability of the Attitude  
Questionnaire

Scale and Items	$M_i$	$SD_i$	$r_i$	$P_i$	V	$M_s$	$SD_s$	$r_{tt}$	
Scale A						203	6.8	2.21	.49
2	.63	.48	.323	.63	6				
3	.386	.487	.437	.39	5				
4	.744	.436	.28	.76	3				
5	.357	.479	.40	.36	5				
6	.696	.459	.468	.77	3				
10	.738	.439	.467	.74	2				
11	.446	.497	.578	.45	2				
12	.619	.485	.368	.62	3				
13	.303	.459	.173	.31	2				
16	.642	.479	.484	.64	2				
17	.755	.429	.294	.76	3				
18	.398	.489	.365	.39	3				
Scale B						203	3.91	1.69	.61
1	.505	.499	.632	.51	3				
7	.547	.497	.639	.55	4				
8	.726	.445	.594	.73	4				
9	.595	.490	.563	.60	5				
14	.690	.462	.514	.69	4				
15	.845	.361	.567	.84	3				
Scale C						203	6.81	2.51	.51
19	.485	.499	.26	.49	6				
20	.183	.387	.107	.19	5				
21	.609	.487	.429	.61	4				
22	.508	.499	.484	.51	5				
23	.431	.495	.377	.44	3				
27	.568	.495	.457	.57	4				
28	.372	.483	.296	.37	5				
29	.609	.487	.395	.61	4				
30	.556	.496	.397	.56	5				
31	.485	.499	.356	.49	5				
35	.591	.491	.474	.59	3				
36	.485	.499	.374	.49	5				
37	.573	.494	.435	.57	6				
38	.331	.470	.343	.33	4				
Scale D						203	6.17	2.296	.444
24	.517	.499	.228	.52	3				
25	.378	.485	.434	.38	4				
26	.355	.478	.287	.36	5				
32	.556	.496	.378	.56	3				
33	.473	.499	.335	.47	4				
34	.325	.468	.215	.33	3				
39	.437	.496	.269	.44	3				
40	.715	.450	.478	.72	4				
41	.426	.494	.315	.43	3				
42	.402	.490	.421	.40	3				
43	.443	.496	.342	.44	5				
44	.591	.491	.461	.59	3				
45	.538	.498	.493	.54	4				

Scale A: Willingness to perform roles in the social, moral and economic development of the group.

Scale B: Willingness to perform manipulative work and similar responsibilities at home and in the community.

Scale C: Judges moral issues, social and economic policies and practices in terms of public welfare.

Scale D: Positive Attitude to Work Independently.

$M_i$  = mean of item

$SD_i$  = standard deviation of item

$r_i$  = item-to-scale correlation coefficient

$M_s$  = mean of scale

$SD_s$  = standard deviation of scale

$r_{tt}$  = internal consistency coefficient obtained through the Kuder-Richardson formula #20.

$P_i$  = proportion passing the item

$V$  = number of judges assigning the item to the scale correctly

The item-to-scale coefficients of correlation are mostly above the criteria of .30 except for Items 4, 13, and 17 of Scale A; Items 19, 20, and 28 of Scale C; Items 24, 26, and 34, of Scale D. These Items are:

Item 4: You are riding in a passenger jeepney. The

driver turns on the radio or the cassette player as the jeepney is in motion. You know that there is a law that prohibits playing the radio or the cassette player while the vehicle is in motion. What would you do?

- a. Do not mind it; it is none of your business.
- b. Report the driver to the authorities.
- c. Tell your neighbors and parents about it.

Percentage of Frequencies: 1 = 76%    0 = 24%

Item 13: You have planted tomatoes and onions in your backyard. But your plants are not healthy. What would you do?

- a. Pull them and throw them away.
- b. Put some horse manure into the soil.
- c. Ask your garden teacher why your plants are not healthy.

Percentage of Frequencies: 1 = 64%    0 = 36%

Item 17: You are seated in a passenger jeepney. You see an old woman carrying a big basket full of bananas. She climbs up the jeepney with great difficulty. What would you do?

- a. Ask the driver to help the old woman.
- b. Pity the old woman
- c. Get up and help the old woman with her basket.



Table XXIX  
Correlation Matrix for the Attitude Scales

	A	B	C	D
A		.47	.46	.38
B	.47		.37	.38
C	.46			.56
D	.38		.56	

At df 201 the obtained r's are all significant at .01 based on the tabled values of coefficient of correlation.

Hypothesis 10: Do students who participated in the IMPACT program show self-concepts significantly different from the self-concept of the students who participated in conventional programs?

The data for the IMPACT and the Non-IMPACT groups were analyzed to obtain the critical ratios of the differences between percentages of correct responses for each item, and the corresponding standard errors of the differences. The differences between means were tested for significance using to the t-test for correlated means, the r's <sup>indicating</sup> the correlation between mental ability test scores and the self-concept scores.

Table XXX

Comparison of the Data on the Self-Concept Report of IMPACT  
and Non-IMPACT Students

	Scale A		Scale B		Scale C		Scale D		Total	
	IM	NI	IM	NI	IM	NI	IM	NI	IM	NI
1st Year: $r_{xy} = .008$										
N	17	22	17	22	17	22	17	22	17	22
M	2.47	2.8	4.77	4.6	2.35	2.87	4.47	4.8	14.88	14.96
SD	1.13	1.14	1.89	2.38	1.17	2.26	1.73	1.9	4.66	4.89
$\delta_m$	.28	.24	.46	.51	.28	.48	.42	.41	1.13	1.04
DM		.33		.17		.52		.33		.08
$\delta d_m$		.37		.69		.56		.59		1.53
$t^m$		.89		.25		.93		.56		.05
CR	1		0		0		2			0
$r_{tt}$									.79	.69
2nd Year: $r_{xy} = .23$										
N	161	86	161	86	161	86	161	86	161	86
M	2.8	2.54	4.84	4.81	2.96	2.68	4.96	5.15	15.56	15.18
SD	1.2	1.36	1.82	1.84	1.31	1.27	1.79	2.13	4.48	4.45
$\delta_m$	.095	.147	.15	.19	.11	.14	.14	.23	1.09	.95
DM		.26		.03		.28		.19		.38
$\delta d_m$		.17		.24		.17		.26		1.41
$t^m$		1.53		.13		1.65		.73		.27
CR	3		3		1		5			0
$r_{tt}$									.65	.74
3rd Year: $r_{xy} = .27$										
N	112	139	112	139	112	139	112	139	112	139
M	2.97	2.66	5.5	5.44	3.18	3.19	5.2	4.52	16.79	15.86
SD	1.26	1.18	1.37	1.67	1.49	1.45	1.98	1.83	3.96	4.03
$\delta_m$	.12	.10	.13	.14	.14	.13	.19	.16	.96	.86
DM		.31		.06		.01		.68		.93
$\delta d_m$		.15		.18		.18		.24		1.24
$t^m$		2.06*		.34		.05		2.83**		.75
CR	1		2		0		4			0
$r_{tt}$									.65	.64

CR refers to the number of items which showed significant critical ratios in the comparison of percentages of IMPACT and Non-IMPACT students obtaining the expected response.

The means of the IMPACT and the Non-IMPACT students in the first year, second year and third year secondary in the four scales and in the over-all total were compared for significance of difference using the t-test for correlated groups, <sup>representing</sup> the  $r_s$  correlation between the learner's scores in the mental ability test and their scores in the self-concept measures. The t-tests showed the following:

1. The mean differences in the four scales and in the total scores for the first year IMPACT and Non-IMPACT students are not statistically significant.
2. The mean differences in the four scales and in the total scores of the second year IMPACT and Non-IMPACT secondary students are not statistically significant.
3. The mean differences in Scales B and C and in the total scores of the IMPACT and the Non-IMPACT third year students are not statistically significant; however, the mean differences for Scales A and D are statistically significant at the .05 and .01 levels, respectively, in favor of the IMPACT students.

The comparison of the percentages of the frequencies of the IMPACT and Non-IMPACT students obtaining the expected responses, either agreement in the case of positive statements,

or disagreement for negative statements, show the following:

A. For the First Year Students.

1. One of the six items in Scale A has a critical ratio which is significant at the .05 level in favor of the IMPACT group. This item is:

My voice is usually pleasant to hear.

	%	$\bar{c}_p$	$\bar{c}_{dp}$	CR
IM	48	10.9	13.77	2.32
NI	16	8.41		

2. Two items in Scale D have critical ratios significant at .05 level and .01 level, respectively, all in favor of the IMPACT students. These items are:

I usually understand when my teacher explains things to me.

	%	$\bar{c}_p$	$\bar{c}_{dp}$	CR
IM	76	9.3	14.63	2.32
NI	42	11.33		

I can usually finish my work without so much help my teachers.

	%	$\bar{c}_p$	$\bar{c}_{dp}$	CR
IM	68	10.7	14.58	2.67
NI	29	9.9		

B. For the Second Year Students.

1. Three items in Scale A have critical ratios all significant at .01, .05 and .01 levels, respectively, in favor of the IMPACT learners.

I try to speak clearly so that others can understand me.

	%	$\bar{d}_p$	$\bar{d}_p$	CR
IM	89	2.88	5.19	3.08
NI	73	4.35		

I usually pay attention to whatever I do.

	%	$\bar{d}_p$	$\bar{d}_p$	CR
IM	65	4.39	6.56	2.43
NI	49	4.88		

My posture makes me feel awkward.

	%	$\bar{d}_p$	$\bar{d}_p$	CR
IM	39	4.49	6.0	3.0
NI	21	3.98		

2. Three items in Scale B have critical ratios significant at .01 level, all in favor of IMPACT.

I use books and equipment carefully.

	%	$\bar{d}_p$	$\bar{d}_p$	CR
IM	94	2.19	4.47	3.13
NI	80	3.9		

I obey rules and regulations of my school.

	%	$\bar{c}_p$	$\bar{c}_{dp}$	CR
IM	87	3.09	5.39	2.96
NI	71	4.42		

I do not usually return books and materials to their proper places.

	%	$\bar{c}_p$	$\bar{c}_{dp}$	CR
IM	77	3.88	6.16	2.75
NI	60	4.78		

3. One item in Scale C has a critical ratio significant at .01 level, in favor of the IMPACT group.

I always try to do my share of work in class.

	%	$\bar{c}_p$	$\bar{c}_{dp}$	CR
IM	75	3.98	6.27	3.19
NI	55	4.85		

4. Two items in Scale D have significant critical ratios, at .05 level, in favor of the Non-IMPACT group.

I seldom ask questions during discussion.

	%	$\bar{c}_p$	$\bar{c}_{dp}$	CR
IM	24	3.93	6.14	2.11
NI	37	4.71		

I am not happy and relaxed when my teachers are watching me.

	%	$\bar{c}_p$	$\bar{c}_{dp}$	CR
IM	46	4.59	6.62	2.11
NI	60	4.78		

5. Three items in Scale D have statistically significant critical ratios at .05 level in favor of the IMPACT group.

I like to do things that my teacher tells me to do.

	%	$\delta_p$	$\delta_{dp}$	CR
IM	73	4.08	6.29	2.06
NI	60	4.78		

I do not like to volunteer to do things for my teacher.

	%	$\delta_p$	$\delta_{dp}$	CR
IM	59	4.52	6.43	2.19
NI	45	4.57		

I respect my teachers.

	%	$\delta_p$	$\delta_{dp}$	CR
IM	97	1.57	4.06	3.69
NI	82	3.75		

### C. For the Third Year Students.

1. One item in Scale A has a statistically significant critical ratio, at .05 level, in favor of the IMPACT group.

I try to speak clearly so that others can understand me.

	%	$\delta_p$	$\delta_{dp}$	CR
IM	90	2.98	5.07	1.97
NI	80	4.1		

2. Two items in Scale B have critical ratios significant at .01 level, in favor of the IMPACT group.

I obey rules and regulations of my school.

	%	$\bar{c}_p$	$\bar{c}_{d_p}$	CR
IM	91	2.85	5.37	3.35
NI	73	4.55		

I try to do my best in my lessons and assignments.

	%	$\bar{c}_p$	$\bar{c}_{d_p}$	CR
IM	96	1.95	4.54	3.52
NI	80	4.10		

3. Four items in Scale D have critical ratios all significant at .05 level, in favor of the IMPACT group.

I usually understand when my teacher explains things to me.

	%	$\bar{c}_p$	$\bar{c}_{d_p}$	CR
IM	67	4.68	6.95	2.3
NI	51	3.13		

I can usually finish my work without so much help from my teacher.

	%	$\bar{c}_p$	$\bar{c}_{d_p}$	CR
IM	57	4.93	7.02	2.56
NI	39	5.0		

I respect my teacher.

	%	$\bar{c}_p$	$\bar{c}_{d_p}$	CR
IM	97	1.69	3.74	2.4
NI	88	3.33		



I do not like to volunteer to do things for my teacher.

	%	p	dp	CR
IM	56	4.94		
NI	41	5.05	7.07	2.12

The internal consistency coefficient for the obtained measures from both the IMPACT and the Non-IMPACT groups were obtained.

1. The first year IMPACT group has obtained a coefficient of .79, and the Non-IMPACT has .69.

2. The second year IMPACT and Non-IMPACT groups have obtained coefficients of .65 and .74, respectively.

3. The third year IMPACT and Non-IMPACT groups have obtained coefficient of .65 and .64, respectively.

To summarize, there were a few differences in the self-concept measures of the IMPACT and the Non-IMPACT groups. Except for two instances, the differences were in favor of the IMPACT groups.

Hypothesis 11. Do students who participated in the IMPACT program show attitudes significantly different from the attitudes of the students who participated in the conventional programs?

As was done with the self-concept data, the obtained

attitude measures for the IMPACT and the Non-IMPACT groups were subjected to comparison statistical analysis, namely; the t-test for correlated means, and the critical ratio test for differences between percentages. The internal consistency coefficient for the obtained measures for the different groups were also obtained.

The data are presented in the Table XXXI.

Table XXXI

Comparison of the Data Obtained from the Attitude Questionnaires of the IMPACT and the Non-IMPACT Secondary Questionnaires

	Scale A		Scale B		Scale C		Scale D		Totals	
	IM	NI	IM	NI	IM	NI	IM	NI	IM	NI
1st Year: $r_{xy} = .1856$										
N	10	19	10	19	10	19	10	19	10	19
M	9	6.16	4.9	3.79	7.6	8.47	6.6	7.1	28.1	25.5
SD	1.67	2.2	1.58	1.22	2.78	2.6	2.1	1.95	5.75	6.6
$r_m$	.53	.51	.50	.28	.88	.59	.67	.45	1.82	1.52
DM		2.84		1.11		.87		.5		2.6
$d_m$		.72		.56		1.03		.79		2.13
$t^m$		3.94**		1.98*		.84		.63		1.22
CR	4		3		1		1		0	
$r_{tt}$									.76	.77
2nd Year: $r_{xy} = .1696$										
N	180	146	180	146	180	146	180	146	180	146
M	6.76	6.51	3.79	3.91	6.47	6.6	5.63	6.05	22.66	23.08
SD	2.2	1.97	1.75	1.54	2.5	2.67	2.37	2.21	6.78	6.12
$r_m$	.17	.15	.13	.12	.19	.21	.18	.17	.51	.48
DM		.25		.12		.13		.42		.42
$d_m$		.22		.17		.28		.24		.70
$t^m$		1.14		.71		.46		1.75		.60
CR	1		0		1		0		0	
$r_{tt}$									.79	.82
3rd Year: $r_{xy} = .2635$										
N	133	113	133	113	133	113	133	113	133	113
M	7.15	7.59	4.34	4.34	7.16	7.69	6.07	5.91	25.9	24.75
SD	2.15	2.19	1.56	1.69	2.7	2.78	2.5	2.57	6.96	6.57
$r_m$	.19	.19	.15	.16	.24	.26	.22	.24	.61	.62
DM		.46		0		.53		.16		1.15
$d_m$		.25		.21		.34		.31		.83
$t^m$		1.84		0		1.56		.51		1.39
CR	2		0		2		4		0	
$r_{tt}$									.75	.83

The comparison of the mean scores for the four scales and the total scores in the attitude measures show the following:

1. There are significant differences in the mean scores of the first year IMPACT and Non-IMPACT students in Scales A and B which are significant at .01 level and .05 level, respectively, in favor of the IMPACT group; but the mean differences for Scales C and D and for the total scores are not statistically significant.

2. There are no significant differences in the mean scores of the second year IMPACT and Non-IMPACT students in Scales A to D and in the total scores.

3. There are no significant differences in the mean scores of the third year IMPACT and Non-IMPACT students in Scales A, B, C and D and in the total scores.

The comparison of the obtained frequencies for the expected responses through the critical ratio test of the differences between percentages show the following:

- A. For the First Year Students.

1. Three items in Scales A have obtained critical ratios significant at .01 level, in favor of the IMPACT group.

These were the items under the following indicators:

1. Accepts that laws and regulations contribute

to group order: One item

	%	$\sigma_p$	$\sigma_{dp}$	CR
IM	64	14.47	17.21	2.68
NI	18	9.31		

b. Helps others in group work as well as in carrying out their individual tasks: One item

	%	$\sigma_p$	$\sigma_{dp}$	CR
IM	91	3.62	14.72	3.39
NI	41	11.92		

c. Accepts systematic ways of planning and solving problems as necessary support to economic development: One Item

	%	$\sigma_p$	$\sigma_{dp}$	CR
IM	64	14.47	17.21	2.67
NI	18	9.31		

2. One item in Scale A has a critical ratio which is significant at .01 level, in favor of the Non-IMPACT group. This item falls under the indicator Helps others in group work as well as in carrying their individual tasks.

	%	$\sigma_p$	$\sigma_{dp}$	CR
IM	46	15.02	16.08	2.98
NI	94	5.75		

3. Three items in Scale B have critical ratios significant at .05 level, all in favor of the IMPACT group. These were items for the following scale indicators:

a. Shows desire to perform one's task well: 2 items

Item 1	%	$\delta_p$	$\delta_{d_p}$	CR
IM	82	11.58	16.75	2.08
NI	47	12.1		
Item 2	%	$\delta_p$	$\delta_{d_p}$	CR
IM	82	11.58	16.75	2.08
NI	47	12.1		

b. Shows willingness to cooperate with others: one item

	%	$\delta_p$	$\delta_{d_p}$	CR
IM	91	8.62	14.72	2.17
NI	59	11.92		

4. One item in Scale C has a critical ratio significant at .05 level in favor of the IMPACT group. This item falls under the indicator, recognizes that economic development is affected by several factors.

	%	$\delta_p$	$\delta_{d_p}$	CR
IM	64	14.47	17.79	2.24
NI	24	10.35		

5. One Item under the indicator shows initiative to work independently in Scale D has a critical ratio significant

at .05 level, in favor of the IMPACT group.

	%	$\zeta_p$	$\zeta_{d_p}$	CR
IM	73	13.38	19.24	2.24
NI	30	13.81		

B. For the Second Year Students

1. One item for scale indicator decides to take an active part in the introduction of innovation in Scale A has a critical ratio significant at .05 level in favor of the IMPACT group.

	%	$\zeta_p$	$\zeta_{d_p}$	CR
IM	43	3.72	4.98	2.2
NI	32	3.32		

2. One item for scale indicator realizes that economic development is affected by several factors in Scale C has a critical ratio which is significant at .01 level in favor of the IMPACT group.

	%	$\zeta_p$	$\zeta_{d_p}$	CR
IM	58	3.9	5.56	2.69
NI	43	3.96		

C. For the Third Year Students

1. One item under the scale indicator decides to take an active part in the introduction of innovation in Scale A has a critical ratio significant at .05 level in favor of the IMPACT group.

	%	$\hat{\sigma}_p$	$\hat{\sigma}_{d_p}$	CR
IM	81	3.57	5.66	2.29
NI	68	4.39		

2. One item for scale indicator helps others in group work as well as in carrying out the individual tasks in Scale A has a critical ratio significant at .05 level in favor of the IMPACT group.

	%	$\hat{\sigma}_p$	$\hat{\sigma}_{d_p}$	CR
IM	79	3.7	5.77	2.08
NI	67	4.43		

3. One item for scale indicator believes that people can live in harmony and peace because of interdependence in Scale C has a critical ratio significant at .05 level in favor of the IMPACT group.

	%	$\hat{\sigma}_p$	$\hat{\sigma}_{d_p}$	CR
IM	69	4.2	6.17	5.35
NI	36	4.52		

4. One item for scale indicator realizes that economic development is affected by several factors, in Scale C has a critical ratio which is significant at .05 level in favor of the IMPACT group.

	%	$\hat{\sigma}_p$	$\hat{\sigma}_{d_p}$	CR
IM	50	4.55	6.4	2.18
NI	36	4.52		



The obtained internal consistency coefficients for the different IMPACT and the Non-IMPACT groups are the following:

1. The first year IMPACT and Non-IMPACT measures on attitudes have internal consistency coefficients of .76 and .77, respectively.
2. The second year IMPACT and Non-IMPACT measures have coefficients of .79 and .82, respectively.
3. The third year IMPACT and Non-IMPACT attitude measures have coefficients of .75 and .83, respectively.

In summary, the obtained measures show some differences in attitudes shown by the IMPACT and the Non-IMPACT graduates. Only two of the instances for the significant differences are in favor of the Non-IMPACT groups.

Hypothesis 12: Do the leavers from the IMPACT program show self-concepts significantly different from the self-concepts of leavers from the conventional programs?

The data obtained from the self-concept reports of the IMPACT and Non-IMPACT leavers were also subjected to comparison statistics and to internal consistency analysis. The results are given in the succeeding table.

Table XXXII

Comparison of the Self-Concept Data of the  
IMPACT and Non-IMPACT Leavers

	Scale A		Scale B		Scale C		Scale D		Total Scores	
	IM	NI	IM	NI	IM	NI	IM	NI	IM	NI
$r_{xy} = .108$										
N	25	15	25	15	25	15	25	15	25	15
M	3.54	3.76	5.50	5.86	4.4	4.1	5.66	5.86	19.16	20
SD	.5	.73	.7	1.07	.63	.96	1.3	1.13	5.66	10.12
$\sigma_m$	.1	.19	.4	.28	.13	.25	.26	.29	1.14	2.67
DM		.22		.30		.30		.20		.84
$\sigma_{d_m}$		.21		.29		.28		.39		2.88
t		1.05		1.03		1.07		.51		.29
CR		2		0		0		1		0
$r_{tt}$									.84	.42

The comparison of the means for the four scales and for the total scores of the self-concept measures of the IMPACT and the Non-IMPACT leavers show that the differences between the two groups are not statistically significant.

The comparison of the percentage of frequencies of the expected responses showed significant differences for two items in Scale A and in one item in Scale D in favor of the IMPACT leavers. These items are:

My voice is usually pleasant to hear.

My posture makes me feel awkward.

I am not afraid to talk to my boss about my work.

The obtained coefficients of internal consistency are .84 for the IMPACT leavers and .42 for the Non-IMPACT leavers.

Therefore, there are a few differences in the self-concept of the IMPACT and the Non-IMPACT leavers.

Hypothesis 13: Do leavers from the IMPACT program give reasons for leaving school different from the reasons given by the Non-IMPACT leavers?

When asked why they left school, the IMPACT and the Non-IMPACT leavers gave one or two reasons for leaving school. The responses are presented in the succeeding table.

Table XXXIX  
Reasons for Leaving School

Reasons	IMPACT	Non-IMPACT
I. Economic Reasons		
1. Inability of parents to support further schooling	37.8%	32%
2. Need to help parents in their work	18.4%	19.5%
3. Need to work and earn a wage	7.8%	9%
II. School Related Factors		
1. Lack of interest in studies	22%	28.5%
2. Low grades	6.7%	3.5%
III. Other Factors		
1. Got married	4.8%	
2. Ill health	1.9%	1.7%

The IMPACT and the Non-IMPACT groups gave the same reasons for leaving school. Both gave economic reasons as the most common reason for leaving school. This coincides with the finding that all the leavers who were contacted during this study belonged to the Low socioeconomic status.

A greater percentage of the Non-IMPACT students gave lack of interest in studies as reason for leaving school.

Hypothesis 14: Do IMPACT leavers and the Non-IMPACT leavers have different types of post school experiences?

The data sheets for the out-of-school subjects who were contacted during the follow-up activities showed that only 16 IMPACT leavers and 15 Non-IMPACT leavers were employed at the time of the survey.

The 16 IMPACT subjects were composed of six girls and ten boys; the 15 Non-IMPACT subjects were made up of seven girls and eight boys.

When asked whether they had taken any job training all of them gave the negative response.

In fact most of the so-called "employed" out-of-school youths especially among the Non-IMPACT groups are engaged in small-farm activities and in home-based cottage industries. Here is a breakdown of the nature of employment of the out-of-school youth.

1. The Non-IMPACT Out-of-School Youth

- a. Two boys (13.3%) work as jeepney conductors in Lapu-lapu City;
- b. Six boys (40%) work on their parents' farms in the hills of Naga.
- c. The girls (46.6%) are engaged in some kind of "take home" contractual jobs such as crocheting gift items or stringing shells for souvenir items.

2. The IMPACT Out-of-School Youth

- a. One girl (6.25%) works as a nurse aide in a small hospital in Cebu City.
- b. Two girls (12.5%) work as house maids in a neighboring town.
- c. Two girls (12.5%) worked at a shellcraft factory as regular workers.
- d. One girl (6.25%) is employed as storekeeper.
- e. Two boys (12.5%) work as "helpers" in a construction set up in Metro Manila, and another one works as helper welder in Naga, Cebu.
- f. Two other boys (12.5%) work in a shellcraft factory while the other five boys (31.25%) hire themselves out as farm hands.

The employed IMPACT and Non-IMPACT leavers were both employed as common laborers at the time of the survey.

Hypothesis 15: Do parents of students from the IMPACT schools have positive perceptions of the IMPACT system in terms of achievement, study habits, personality development and self-discipline?

A total of twenty-seven parents of IMPACT pupils in Naga, Lapu-lapu City and Sapang Palay were interviewed during this study. Their comments may be summarized into two categories: those in favor of the IMPACT learning system and

those against.

A. Comments in Favor of IMPACT:

Parents have cited the following advantages that their children have derived from having studied in the IMPACT school:

1. better literacy skills.
2. better affective results, in terms of the acquisition of leadership traits and of overcoming inferiority complex and stage fright.
3. more cognitive learning.
4. independent study habits.
5. completion of elementary level in only five years instead of six years.

B. Comments Against IMPACT:

The parents' comments against IMPACT may be summarized thus:

1. Some parents do not believe that beginning children can learn from programmed teachers as much as they would from the teachers.
2. Some parents believe that there can be no better substitute for a teacher; not even a good module.
3. Some parents are worried about the seeming laxity in discipline in the classroom.
4. The parents of the slow learners complain against

the child's finishing the elementary cycle in more than the standard six years.

5. Some parents complain against the lack of children's opportunity to acquire speaking skills because they spend more time reading the modules.

The findings on the self-concept of the students and the school leavers in favor of the IMPACT groups and the observations made by parents, teachers and this researcher on the personality traits of the IMPACT students and leavers deserve explanation in the light of the IMPACT system.

In IMPACT, the basic group is the "family" which is composed of children of all age levels and which emphasizes sensitivity to the needs of the younger members of the family by the elder ones and respect for the elder members by the younger members of the group. In this set up, the interaction of the children in their learning activities is more horizontal than vertical as characterized by the pattern of interaction between the professional teacher and the pupils in the conventional program. Because of this horizontal interaction which happens all through the day, the children begin to lose the feeling of insecurity and sometimes of fear, which characterizes adult-children interaction in an authoritarian classroom setting, and then to gain the feeling of confidence and ease. After some time of exposure to this more



democratic atmosphere the child internalizes his feeling of confidence in himself and therefore he appears very much at ease.

Thus the teacher reports that the IMPACT learners appear active and alert, move about with ease and confidence, and the parents remark that their children have overcome the inferiority complex.

This feeling of confidence in himself makes the learner able to speak well of himself as when he reports I usually look nice in the clothes I wear., My voice is pleasant to hear. or to reason out with his teacher when his attention is called., appears outspoken, not in keeping with the Filipino society's normative behavior which is characterized by not talking back to elders when his attention is called, or not saying good things of himself to others because it is bad taste.

In this family grouping in IMPACT, the elders look after the younger members by serving as their programmed teacher. He spends an hour a day in the service of the younger members of his family and of the younger members of the other families. At times when the elder member is absent anyone among the younger ones steps forward to take the place of the programmed teacher. This explains why the IMPACT graduate is not bothered by his classmates in the secondary level who ask

him/her to help them in their assignments. This explains why the IMPACT graduate "knows how to handle his classmates in the secondary level. This explains why the IMPACT graduate gives a self-report such as I get along well with most of my classmates. I get along well with my co-workers., I always try to do my share of work.

In IMPACT, the child's progress is decided upon by the learner himself, not by the teacher as is in the conventional system. The child knows that it does not pay to bluff his way through the learning task because his progress to the next task depends on his performance in the task post test. Thus he develops a sense of responsibility in his studies and so he reports I usually finish whatever work is assigned to me., I can usually finish my work without so much help from my teacher. His employer reports that he is conscientious in his work, diligent and alert. Thus he has developed independent study habits and does not wait for his parents to tell him to study. His teacher reports that he shows interest in learning.

Whether the IMPACT learner is doing programmed teaching or peer learning, he knows he has to follow the steps for the task; he knows there is no short-cut to get to the end soon. He follows a pattern, a strategy that assures his mastery of the task. This has developed in him the awareness of the need to go by certain standards and so he reports Rules and

regulations are necessary for me to work well., I do my best at work., I use tools and equipment carefully, and I usually return tools and equipment to their proper places after use.

Learning in IMPACT is not confined to the module as some critics claim. The modules direct the learners to go out into the community and to utilize human, material, and institutional resources that are available in order for him to achieve his learning task. In this way he gains initiative and self-direction. So he reports I am not afraid to try new ways of doing things. His employer reports that he tries his best at new ways of accomplishing his work and he shows resourcefulness and creativity in group work.

In IMPACT, the learner does a lot of talking. He talks a lot when he performs his programmed teaching functions. He talks a lot with his peers as they discuss the items in the module. He also listens a lot when he program-teaches. He has to listen to the responses of his pupils. He has to listen to his peers as they discuss their lessons, so his teacher in the secondary reports that he speaks clearly for others to understand., and he himself reports that he understands when his teacher explains things to him. The IMPACT graduates have been exposed to the two way communication process, which enables them to use it to the advantage in their further schooling.

A number of researches have shown direct relationship

between self-concept and achievement. In this study, the findings have pointed to the fact that IMPACT graduates have shown better achievement and more positive self-concept than the Non-IMPACT graduates.

The findings relative to the attitude measures show that the IMPACT graduates obtained attitude measures that were statistically comparable to the attitude measures of the Non-IMPACT graduates. In the IMPACT modules, only a minimum of affective domain has been achieved. However, the IMPACT modules can still be revised by the writers who have by now gained more insights into the value of the affective domain in the development of the human personality.

## CHAPTER IV

### SUMMARY OF FINDINGS AND RECOMMENDATIONS

#### I. SUMMARY OF FINDINGS ON COGNITIVE OUTCOMES

Hypothesis 1: Do students who participated in the IMPACT schools show achievement levels significantly different from the achievement levels of students who participated in conventional programs?

Students' achievement were shown by the students' scores in the Academic Achievement Tests of the Philippine Educational Placement Tests which were administered in December 1980; and by the students' grades in English, Pilipino and Math. The students were matched on the basis of their scores in the mental ability test which they took in February-March 1978.

The data on the results of the Academic Achievement Tests showed that:

1. The mean differences in English, Pilipino, and Math of the IMPACT and Non-IMPACT students in the first year of the secondary level, were not statistically significant. Therefore, the first year IMPACT students did not show achievement levels significantly different from the achievement levels of the Non-IMPACT students, as far as the results of the Academic Achievement Tests show.
2. The second year secondary IMPACT students obtained

significantly higher mean scores in English and Mathematics than the Non-IMPACT students did, but they obtained a statistically comparable mean score in Pilipino as the Non-IMPACT group did.

3. The third year secondary IMPACT students obtained significantly higher mean scores in English and Pilipino than the Non-IMPACT third year students did; but they compared equally with the Non-IMPACT group in Mathematics.

The data on students' grades in English, Pilipino and Mathematics show that:

1. The first year secondary IMPACT students showed statistically comparable achievement<sup>grades</sup> with the Non-IMPACT first year secondary students.
2. The second year secondary IMPACT students showed statistically comparable achievement<sup>grades</sup> with the Non-IMPACT second year secondary students.
3. The third year secondary IMPACT students showed a significantly higher achievement<sup>grades</sup> in Mathematics than the Non-IMPACT students, but they achieved comparable grades in English and Pilipino.

Hypothesis 2: Are there differential cognitive outcomes depending on the mental ability shown by the IMPACT and the Non-IMPACT students?

There were no differential achievement outcomes

depending on the mental ability levels of the IMPACT and the Non-IMPACT students in the secondary level.

Hypothesis 3: Are there different cognitive outcomes depending on the sex of the IMPACT and the Non-IMPACT students?

1. The IMPACT girls had significantly higher mean scores in two comparisons out of three in English.
2. The IMPACT girls had significantly higher mean scores in one comparison out of three in Pilipino.
3. The IMPACT girls had comparable mean scores with the Non-IMPACT girls in all three comparisons in Mathematics.
4. The IMPACT boys had significantly higher mean scores in one comparison out of three in English.
5. The IMPACT boys had significantly higher mean scores in one comparison out of three in Pilipino.
6. The IMPACT boys had comparable mean scores with the Non-IMPACT boys in two comparisons in Mathematics, but they had a significantly higher mean score in one comparison.

Hypothesis 4: Are there differential cognitive outcomes depending on the age level of the IMPACT and the Non-IMPACT students?

1. The Underage IMPACT group had significantly higher mean scores in the two comparisons in English.
2. The Underage IMPACT group had significantly higher mean

scores in the two comparison in Pilipino.

3. The Underage IMPACT group had significantly higher mean score in one comparison in Math.
4. The Normal age IMPACT group had comparable mean scores with the Normal age Non-IMPACT group in all the three subject areas in English, Pilipino and Math.
5. The Overage IMPACT group had significantly higher mean score than the Overage Non-IMPACT group in one comparison out of two in English.
6. The Overage IMPACT group had significantly higher mean score than the overaged Non-IMPACT group in Pilipino, and in one comparison out of two comparisons in Mathematics.

Hypothesis 5: Are there differential cognitive outcomes depending on the socioeconomic status of the IMPACT and the Non-IMPACT students?

1. The Upper-Middle IMPACT groups compared equally with the Upper-Middle Non-IMPACT groups in two comparisons in English.
2. The Upper-Middle IMPACT group had a significantly higher mean score in one comparison in Pilipino.
3. The Upper-Middle IMPACT group had comparable mean scores with the Upper-Middle Non-IMPACT groups in Mathematics.
4. The Lower-Middle IMPACT group had a significantly higher mean score in one comparison, out of three, in English.



5. The Lower-Middle IMPACT group had a significantly higher mean score in one comparison, out of three, in Pilipino.
6. The Lower-Middle IMPACT group had mean scores which were statistically comparable with those of the Lower-Middle Non-IMPACT groups in all three comparisons in Mathematics.
7. The Low IMPACT groups had a significantly higher mean score in one comparison out of three in English.
8. The Low IMPACT group had a significantly higher mean score in one comparison, out of three, in Pilipino.
9. The Low IMPACT group had a significantly higher mean score in one comparison out of three in Mathematics.

Hypothesis 6: Do leavers from the IMPACT program show achievement levels significantly different from the achievement levels of the leavers from the conventional programs?

1. The achievement of the IMPACT leavers who left school after completion of Level V is comparable with the achievement of the Non-IMPACT leavers who left school after completion of Grade V in English and Pilipino; but the IMPACT group achieved a significantly higher mean in Math than the Non-IMPACT leavers did.
2. The achievement of the IMPACT leavers who left school after completion of Level VI is comparable with the achievement of the Non-IMPACT leavers who left school after Grade VI, in all three subject areas.

Hypothesis 7: Are there differential cognitive outcomes depending on the mental ability shown by the IMPACT and the Non-IMPACT leavers?

No data could be given in answer to the research question because the IMPACT and the Non-IMPACT leavers who took the tests all fall under the average mental ability category. Therefore, no comparison of achievement could be made on the basis of mental ability.

Hypothesis 8: Are there differential cognitive outcomes depending on the sex of the IMPACT and the Non-IMPACT leavers?

1. The IMPACT girls among the leavers have significantly higher mean scores in English, Pilipino and Math.
2. The IMPACT boys among the leavers have significantly higher mean score in Math than the Non-IMPACT boys do; but they have comparable mean scores in English and Pilipino.

Hypothesis 9: Are there differential cognitive outcomes depending on the socioeconomic status of the IMPACT and the Non-IMPACT leavers?

No data could be presented in answer to this research question because the IMPACT and the Non-IMPACT leavers who took the Academic Achievement Tests all fall under the low

socioeconomic status. Thus, no comparison could be made.

## II. Summary of the Non-Cognitive Outcomes

Hypothesis 10: Do students who participated in the IMPACT program show self-concepts significantly different from the self-concepts of the students who participated in conventional program?

1. In the comparison of mean scores of the scales for the self-concept measures, two comparisons showed that the differences between the IMPACT and the Non-IMPACT third year students were statistically significant, in favor of the IMPACT students.

2. In the comparison of the percentages of frequencies of correct responses to the items in the questionnaire of the IMPACT and the Non-IMPACT students, these differences were noted:

a. The IMPACT and the Non-IMPACT first year students differed significantly in three items, all in favor of the IMPACT students.

b. The IMPACT and the Non-IMPACT second year students differed significantly in twelve (12) items - ten items in favor of the IMPACT group, and two in favor of the Non-IMPACT group.

c. The IMPACT and the Non-IMPACT third year students

differed significantly in seven items, all in favor of the IMPACT students.

Hypothesis 11: Do students who participated in IMPACT program show attitudes significantly different from the attitudes of the students who participated in the conventional programs?

1. In the comparison of the mean scores of the scales in the attitude questionnaire only one comparison, that of the first year secondary students in Scale A, showed significant difference between the IMPACT and the Non-IMPACT groups. All the other comparisons showed no significant differences in the attitude measures of the IMPACT and the Non-IMPACT group.

2. In the comparison of the percentages of the frequencies of the correct responses to the items in the attitude questionnaire of the IMPACT and the Non-IMPACT groups, the following differences were noted:

a. The IMPACT and the Non-IMPACT first year students differed significantly in nine (9) items - eight (8) in favor of the IMPACT group, and one in favor of the Non-IMPACT group.

b. The IMPACT and the Non-IMPACT second year students differed significantly in two items, in favor of the IMPACT group.

c. The IMPACT and the Non-IMPACT third year students differed significantly in eight (8) items - seven items in favor of the IMPACT group, and one item in favor of the Non-IMPACT group.

Hypothesis 12: Do the leavers from the IMPACT program show self-concepts significantly different from the self-concepts of leavers from the conventional program?

1. The comparison of the mean scores in the scales of the self-concept questionnaire showed no significant differences in the measures of the IMPACT and the Non-IMPACT leavers.

2. The comparison of the percentage of the frequencies of the correct responses of the IMPACT and the Non-IMPACT leavers showed significant differences in three items, all in favor of the IMPACT leavers.

Hypothesis 13: Do leavers from the IMPACT program give reasons for leaving school different from the reasons given by the Non-IMPACT leavers?

Both the IMPACT and the Non-IMPACT leavers gave similar reasons for leaving school. The first group of reasons for both groups are economic in nature. This is accented by the

fact that the leavers from both groups fall under the low socioeconomic status. Although both groups give lack of Interest in studies as one of the reasons, there were more Non-IMPACT leavers who gave this reason.

Hypothesis 14: Do IMPACT leavers and the Non-IMPACT leavers have different types of post school experiences?

The employed IMPACT and Non-IMPACT leavers were both employed as common laborers either on the farm, in some cottage industries, or in a small scale business enterprise.

Hypothesis 15: Do parents of students from the IMPACT schools have positive perceptions of the IMPACT system in terms of achievement, study habits, personality development, and self-discipline?

The parents who were interviewed for this study gave both positive perceptions and some disagreements with some components of the IMPACT learning system.

They were all appreciative of the improved literacy skills of their children, the acquisition of leadership traits and the overcoming of inferiority complex, more cognitive learning and independent study habits. However, they expressed disagreements on the use of elder pupils as programmed teachers, and the use of modules to teach the learners.

### III. CONCLUSIONS

1. The findings show that graduates of the IMPACT schools are equipped with the needed knowledge, skills and attitudes for further schooling, and that they compare equally with the graduates of the conventional schools as shown by the results of the different forms of evaluation on their performance or achievement, their self-concept, and their attitudes.

2. The IMPACT leavers compare equally with comparable Non-IMPACT leavers in achievement, self-concept, and in the nature of their post school experiences.

### IV. RECOMMENDATIONS

In view of the findings of the study, the following suggestions are offered:

1. The results of this research must be widely disseminated in order to dispel the doubts of the different sectors in the community on the efficiency of IMPACT learning system.

2. The IMPACT modules can still stand revisions for refinement of the strategies, for the toning down of the vocabulary level to ensure learner comprehension, and for the inclusion of more affective-laden activities.

3. The IMPACT learning management system can still stand more refinement through micro-level research studies conducted in the project sites.

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A P P E N D I C E S

## APPENDIX A

Republic of the Philippines  
Ministry of Education and Culture  
Central Visayas, Region VII

National Development Goals:

1. To achieve and maintain an accelerating rate of economic development and social progress;
2. To assure the maximum participation of all the people in the attainment and enjoyment of the benefits of such growth;
3. To strengthen national consciousness and promote desirable cultural values in a changing world. (P.D. 6-A, 1972)

Pledges:

- P - Peace and Order
- L - Land Reform
- E - Economic Development
- D - Development of Moral Values Through Educational Reform
- G - Government Reorganization
- E - Employment and Manpower Development
- S - Social Services

National Goals:

1. All Educational institutions shall be under the supervision of and subject to regulation by the State. The State shall establish and maintain a complete, adequate and integrated system of education relevant to the goals of national development.

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This copy was obtained from the Elementary Division of the Ministry of Education and Culture, Region VII, Cebu City and it is reproduced here.

2. The study of the Constitution shall be part of the curricula in all schools.
3. All educational institutions shall aim to inculcate love of country, teach the duties of citizenship, and develop moral character, personal discipline and scientific, technological and vocational efficiency.
4. The State shall maintain a system of free public elementary education and, in areas where finances permit, establish and maintain a system of free public education at least up to the secondary level.
5. At the option expressed in writing by the parents or guardians, and without cost to them and the government, religion shall be taught to their children or wards in public elementary and high schools as may be provided by law.
6. The State shall provide citizenship and vocational training to adult citizens and out-of-school youth. (P.D. Art. XV; Sec. 8)

National Educational Goals:

1. Provide for a broad general education that will assist each individual, in the peculiar ecology of his own society, to (1) attain his potential as a human being; (2) enhance the range and quality of individual and group participation in the basic functions of society; and (3) acquire the essential educational foundation for his development into a productive and versatile citizen.
2. Train the nation's manpower in the middle level skills required for national development.
3. Develop the high-level professions that will provide leadership for the nation, advance knowledge through research, and apply new knowledge for improving the quality of human life; and
4. Respond effectively to changing needs and conditions of the nation through a system of educational planning and evaluation. (P.D. G-A, 1972)

Minimum Learning Needs:

- a. Positive attitudes, toward cooperation with the desire to help one's family and fellowmen, toward work and community and national development, and not least of all toward continued learning and toward the development of ethical, spiritual and moral values. Such attitudes should find concrete expression in one's daily behavior - in the family and the community, work and in all learning environments.
- b. Functional literacy and numeracy, sufficient (i) to read with comprehension a national newspaper or magazine, useful agricultural, health, and other "how-to-do-it" bulletins, or manufacturers' instruction sheets; (ii) to write a legible letter to, for example, a friend or to a government bureau requesting information; and (iii) to handle important common computations - such as measurement of land and buildings, calculation of agricultural credit and rental rates on land.
- c. A scientific outlook and an elementary understanding of the processes of nature in the particular area, as they pertain, for example, to health and sanitation, to raising crops and animals, to nutrition, food storage and preparation, and to the environment and its protection.
- d. Functional knowledge and skills for raising a family and operating a household, including the essential elements of protecting family health, family planning where appropriate, good child care, nutrition and sanitation; cultural activities and recreation; care of the injured and sick; intelligent shopping and use of money; making clothes and other consumption goods, house-repairs and environmental improvements; growing and preserving food for family consumption.
- e. Functional knowledge and skills for earning a living, including not only the skills required for a particular local occupation, but also a knowledge of a variety of locally useful common skills for agriculture and non-farm use.
- f. Functional knowledge and skills for civic participation including some knowledge of national and local history and ideology, an understanding of one's society, awareness of government structure and functions; taxes and public expenditures; available social services; rights and obligations of individual citizens; principles, aims and

functioning of cooperatives and of local voluntary association. (Adapted from Philip H. Coombs, New Paths to Learning, New York: International Council for Educational Development, 1973, pp. 13-17)

Objectives of Elementary Education:

1. Inculcation of spiritual and civic values and the development of a good Filipino based on an abiding faith in God and genuine love of country.
2. Training of the young citizen in his rights, duties and responsibilities in a democratic society for active participation in a progressive and productive home and community life;
3. Development of basic understandings about Philippine culture, the desirable traditions and virtues of our people as essential requisites in attaining national consciousness and solidarity;
4. Teaching of basic health knowledge and the formation of desirable health habits and practices;
5. Development of functional literacy in the vernacular, in Filipino and English as basic tools for further learning; and
6. Acquisition of fundamental knowledge, attitudes, habits and skills in science, social studies, mathematics, arts and work education, and their intelligent application in appropriate life situations.

This foregoing restatement of objectives for elementary education is an implication of the specific objectives of Elementary Education promulgated by the Board of National Education in 1957. Revised Elementary Education Program, 1970.

APPENDIX B

DATA GATHERING INSTRUMENTS



STUDENT'S DATA SHEET

Please fill in each space with the information needed:

- I. Name of Student: \_\_\_\_\_ School: \_\_\_\_\_  
Year/Grade: \_\_\_\_\_ Adviser: \_\_\_\_\_  
Occupation of Father: \_\_\_\_\_  
Occupation of Mother: \_\_\_\_\_

II.

SUBJECTS	FIRST YEAR	SECOND YEAR	THIRD YEAR
English			
Pilipino			
Science			
Mathematics			
Social Studies			
Elective			
Practical Arts			
P.E./CAT/YCAP			

- III. Adviser's Ranking of the Student in Class in Terms of His Academic Performance: Please check the Category to which this student belongs:

- Outstanding : ( \_\_\_\_\_ )  
Very Satisfactory: ( \_\_\_\_\_ )  
Satisfactory : ( \_\_\_\_\_ )  
Unsatisfactory : ( \_\_\_\_\_ )

- IV. Please indicate the frequency of each of the following activities: If no data are available, please indicate the cause or reason.

1. No. of times student borrowed books/magazine from the library since June 1980: \_\_\_\_\_
2. No. of absences from June to date: \_\_\_\_\_
3. No. of times he/she did not submit homework: \_\_\_\_\_

INTERVIEW SCHEDULE FOR DROPOUTS

Name: \_\_\_\_\_ Civil Status: \_\_\_\_\_ Married  
 \_\_\_\_\_ Single

Occupation of Father: \_\_\_\_\_

Occupation of Mother: \_\_\_\_\_

I. When did you leave school? \_\_\_\_\_

What grade level were you when you left school? \_\_\_\_\_

II. Are you working now? Yes \_\_\_\_\_ No \_\_\_\_\_

How many months have you been working? \_\_\_\_\_

Where do you work? \_\_\_\_\_

III. Here are reasons for leaving school. Please put a check (/) before the item that refers to the reason why the student left school. If the reason for leaving school is not one of those, write it on the blank for others.

What were your reasons for leaving school?

A. School related factors:

- \_\_\_\_\_ 1. Low grades.  
 \_\_\_\_\_ 2. Lack of interest in studies.  
 \_\_\_\_\_ 3. No secondary school near residence.  
 \_\_\_\_\_ 4. Others (Specify) \_\_\_\_\_

B. Economic Problems:

- \_\_\_\_\_ 1. Need to work and earn a wage.  
 \_\_\_\_\_ 2. Need to help parents in their work.  
 \_\_\_\_\_ 3. Inability of parents to support further schooling.  
 \_\_\_\_\_ 4. Others (Specify) \_\_\_\_\_

## C. Other Factors:

\_\_\_\_\_ 1. Got married.

\_\_\_\_\_ 2. Ill health.

\_\_\_\_\_ 3. Others (Specify) \_\_\_\_\_

## IV. Mass Media Exposure:

## A. Does your family have:

1. comics Yes \_\_\_\_\_ No \_\_\_\_\_

2. newspapers Yes \_\_\_\_\_ No \_\_\_\_\_

3. magazines Yes \_\_\_\_\_ No \_\_\_\_\_

4. government pamphlets Yes \_\_\_\_\_ No \_\_\_\_\_

5. other reading materials Yes \_\_\_\_\_ No \_\_\_\_\_

B. Do you read these materials? Yes \_\_\_\_\_ No \_\_\_\_\_

C. How often do you read them?

Often \_\_\_\_\_ (Every day)

Regularly \_\_\_\_\_ (once or twice a week)

Rarely \_\_\_\_\_ (once a month)

D. Does the family own:

1. radio Yes \_\_\_\_\_ No \_\_\_\_\_

2. tv Yes \_\_\_\_\_ No \_\_\_\_\_

E. How often do you listen to the radio?

Often \_\_\_\_\_ (Every day)

Regularly \_\_\_\_\_ (once or twice a week)

Rarely \_\_\_\_\_ (once a month)

F. How often do you watch TV?

Often \_\_\_\_\_ (Every day)

Regularly \_\_\_\_\_ (Once or twice a week)

Rarely \_\_\_\_\_ (once a month)

## V. Training Experience:

- A. Do you know of any job training programs that have been offered in this district in the last one and a half (1½) years?

Yes \_\_\_\_\_ No \_\_\_\_\_

- B. Were you able to attend it?

Yes \_\_\_\_\_ No \_\_\_\_\_

- C. Why or why not? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- D. If yes, how long was the training period?

\_\_\_\_\_

- E. What kind of training did you have?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

THE STUDENT'S SELF-REPORT QUESTIONNAIRE

My dear Student:

Here is a short questionnaire for you to accomplish. It contains statements and under each item are three choices of Agree, Disagree and Not Sure. Read each statement carefully; if you think that the statement is right for you, encircle Agree; but if the statement is not right for you, encircle Disagree. If you do not know whether the statement is right for you or not, encircle Not Sure. Remember there are no right and wrong answers.

For example:

1. I like to play in the rain.  
                   Agree            Disagree            Not Sure
2. I do not like to ride a jeepney with stereo music.  
                   Agree            Disagree            Not Sure
3. I like to eat ripe mangoes.  
                   Agree            Disagree            Not Sure

BEGIN HERE:

- A. 1. I usually look nice in the clothes I wear.  
                   Agree            Disagree            Not Sure
2. I am often too tired to do my lessons.  
                   Agree            Disagree            Not Sure
3. I try to speak clearly so that others can understand me.  
                   Agree            Disagree            Not Sure
4. I usually pay attention to whatever I do.  
                   Agree            Disagree            Not Sure

5. My voice is usually pleasant to hear.  
Agree Disagree Not Sure
6. My posture makes me look awkward.  
Agree Disagree Not Sure
- B. 1. I use books and equipment carefully.  
Agree Disagree Not Sure
2. I do not usually return books and materials to their proper places after use.  
Agree Disagree Not Sure
3. I always try to finish whatever work is assigned to me.  
Agree Disagree Not Sure
4. Rules and regulations are necessary for my school.  
Agree Disagree Not Sure
5. Cleanliness of the school's surrounding is not my responsibility.  
Agree Disagree Not Sure
6. I am not proud of my work in school.  
Agree Disagree Not Sure
7. I try and do my best in my lessons and assignments.  
Agree Disagree Not Sure
8. I am not afraid to try new ways of doing things.  
Agree Disagree Not Sure
- C. 1. I get along well with most of my classmates.  
Agree Disagree Not Sure
2. I always try to do my share of work in class.  
Agree Disagree Not Sure

3. I do not like to help any of my classmates with his work in school.  
 Agree            Disagree            Not Sure
4. I usually like to work alone better than to work with my classmates.  
 Agree            Disagree            Not Sure
5. I do not like to make friends with those whose religion is different from mine.  
 Agree            Disagree            Not Sure
6. I usually want to strike my classmates who do not respect me or my things.  
 Agree            Disagree            Not Sure
- D. 1. I am not afraid to talk to my teachers about my lessons and about things in school.  
 Agree            Disagree            Not Sure
2. I seldom ask questions during our discussions with the teacher.  
 Agree            Disagree            Not Sure
3. I am not happy and relaxed when my teachers are watching me.  
 Agree            Disagree            Not Sure
4. I like to do things that my teacher tells me to do.  
 Agree            Disagree            Not Sure
5. I usually understand when my teachers explain things to me.  
 Agree            Disagree            Not Sure
6. I can usually finish my work without so much help from my teachers.  
 Agree            Disagree            Not Sure
7. I do not like to volunteer to do things for my teacher.  
 Agree            Disagree            Not Sure

8. I respect my teachers.  
Agree Disagree Not Sure
9. I usually understand the directions my teachers give me in class.  
Agree Disagree Not Sure
10. I think my teachers like me.  
Agree Disagree Not Sure



THE WORKER'S SELF-REPORT QUESTIONNAIRE

Please read each statement. If the statement says the right thing for you, encircle Agree; If the statement is not right for you, encircle Disagree. If you do not know whether the statement is right for you or not, encircle Not Sure.

For Example:

1. I like working in a big factory.  
     Agree       Disagree      Not Sure
2. I do not like to go home at once after my work.  
      Agree      Disagree      Not Sure
3. I enjoy working in a big city.  
     Agree      Disagree       Not Sure

BEGIN HERE:

- A. 1. I usually look nice in the clothes I wear.  
       Agree      Disagree      Not Sure
2. I frequently do not have enough energy and strength to do my work.  
       Agree      Disagree      Not Sure
3. I try to speak clearly so that others can understand me.  
       Agree      Disagree      Not Sure
4. I usually pay attention to whatever I am doing.  
       Agree      Disagree      Not Sure
5. My voice is usually pleasant to hear.  
       Agree      Disagree      Not Sure
6. My posture makes me look awkward.  
       Agree      Disagree      Not Sure

- B.
1. I use tools and equipment carefully.  
Agree            Disagree            Not Sure
  2. I do not usually return tools and equipment to their proper places after use.  
Agree            Disagree            Not Sure
  3. I always try to finish whatever work is assigned to me.  
Agree            Disagree            Not Sure
  4. Rules and regulations are necessary for me to work well.  
Agree            Disagree            Not Sure
  5. Cleanliness of our place of work is not my responsibility.  
Agree            Disagree            Not Sure
  6. I am not proud of my work.  
Agree            Disagree            Not Sure
  7. I try to do my best at work.  
Agree            Disagree            Not Sure
  8. I am not afraid to try new ways of doing my work.  
Agree            Disagree            Not Sure
- C.
1. I get along well with most of my co-workers.  
Agree            Disagree            Not Sure
  2. I always try to do my share of work.  
Agree            Disagree            Not Sure
  3. I do not like to help my co-workers with their own share of work.  
Agree            Disagree            Not Sure
  4. I usually like to work alone than to work with others.  
Agree            Disagree            Not Sure

5. I do not like to make friends with those whose religion is different from mine.  
 Agree            Disagree            Not Sure
6. I usually want to strike those who do not respect me or my things.  
 Agree            Disagree            Not Sure
- D.
1. I am afraid to talk to my boss about my work.  
 Agree            Disagree            Not Sure
2. I seldom ask questions about my work.  
 Agree            Disagree            Not Sure
3. I am not happy and relaxed when my boss is watching me.  
 Agree            Disagree            Not Sure
4. I like to do things that my boss tells me to do.  
 Agree            Disagree            Not Sure
5. I usually understand when my boss/superior explains things to me.  
 Agree            Disagree            Not Sure
6. I can usually finish my work without so much help from my boss/superior.  
 Agree            Disagree            Not Sure
7. I do not like to volunteer to do things for my boss.  
 Agree            Disagree            Not Sure
8. I respect my boss/superior.  
 Agree            Disagree            Not Sure
9. I usually understand the direction that my boss gives me.  
 Agree            Disagree            Not Sure
10. I think my boss/superior likes me.  
 Agree            Disagree            Not Sure

TABLE OF SPECIFICATIONS - ATTITUDE INVENTORY

<u>ATTITUDES</u>	<u>ITEMS</u>	<u>NO. OF ITEMS</u>
I. Manifests willingness to perform roles in the social, moral and economic development of the group(s) where the individual belongs.		
1. Accepts that laws and regulations contribute to group/community order	4, 10, 18	3
2. Decides to take an active role in the introduction of innovation that contributes to national development	11, 5, 16	3
3. Helps others in group work as well as in carrying out their individual tasks	2, 12, 17	3
4. Accepts systematic ways of planning and solving problems as a necessary support to economic development	3, 6, 13	3
II. Indicates willingness to perform manipulative work and similar responsibilities at home and in the community.		
1. Shows desire to perform one's task well	7, 8, 14	3
2. Shows willingness to cooperate with others in their tasks	1, 9, 15	3
III. Judges moral issues, social and economic policies and practices in terms of public welfare.		
1. Believes that people can live in harmony and peace because of interdependence	19, 27, 35	3

2.	Believes that the Philippines is an equal of other nations/countries	20, 28	2
3.	Accepts that government exists to regulate people's activities	21, 29, 36	3
4.	Recognizes that people's values about population affect economic development	22, 30, 37	3
5.	Realizes that economic development is affected by several factors	23, 31, 38	3
IV. Manifests a Positive Attitude to Work Independently.			
1.	Believes that the individual should be ready to perform varied roles in the family or in the group.	24, 32, 39 42, 45	5
2.	Shows desire to perform any task to the best of one's ability	25, 33, 40	3
3.	Shows initiative to work independently	26, 34, 41 43, 44	5

ATTITUDE QUESTIONNAIRE

## Test I. What Would You Do?

**DIRECTIONS:** We would like to know what you would do if you were in the situations given below. Read the description of each situation and then choose the one that tells what you would do and encircle the letter of the answer that you choose.

**EXAMPLES:**

1. The bell has rung for the class to end. You have not finished your test. What would you do?
  - a. Submit your paper.
  - b. Go on writing and just ignore the bell.
  - c. Ask your teacher to give you a few minutes more.
2. Your teacher gives you a spelling test. You do not know the correct answers. What would you do?
  - a. Look at your seatmate's answers and copy.
  - b. Write only what you can write correctly.
  - c. Open your notes to get the correct answers.

**BEGIN HERE:**

1. The leader of the Kabataang Barangay has invited all KB members to ask for donations for Operation Typhoon Victims on Saturdays and Sundays for two weeks. What would you do?
  - a. Watch the other members at work.
  - b. Go out and do your share in soliciting for donations.
  - c. Give your suggestions to the KB leader and then leave.
2. You are very busy trying to finish your project in Home Economics because your teacher has already asked you to submit it. Then one of your classmates comes to you for your help in her arithmetic homework. What would you do?
  - a. Tell her that you are sorry you cannot help her.
  - b. Tell her that you will help her as soon as you finish your project.
  - c. Tell her to ask someone to help her.

3. Your class wants to put up a project for the community such as building a compost pit for the community to use. But you need money to build the project. What would be the first thing you do?
  - a. Ask every member of the class to contribute an amount.
  - b. Invite everyone in the class to discuss ways of raising the money.
  - c. Approach the barangay leader and ask him to give you the money.
  
4. You are riding in a passenger jeepney. The driver turns on the radio or the cassette player as the jeepney is in motion. You know that there is a law that prohibits playing the radio or the cassette player while the vehicle is in motion. What would you do?
  - a. Do not mind it, it is not your business.
  - b. Report the driver to the authorities.
  - c. Tell your neighbors and parents about it.
  
5. A group of students are planning to hold a rally in front of a big store to protest the unlawful practice of paying the salesgirls less than the minimum wage. What would you do?
  - a. Join them and offer suggestions.
  - b. Stay away from them to keep you from trouble.
  - c. Report them to the teacher.
  
6. Your teacher-adviser has distributed your monthly report cards. You find out that your math teacher has given you a very low grade although you always got high scores in the tests. What would you do?
  - a. Cry over the low grade received.
  - b. Blame your math teacher for favoritism.
  - c. Approach your math teacher and ask him why you got low grades.

7. Your English teacher returns your formal theme with comments telling you to improve it. What would you do?
  - a. Show it to your mother and ask her to improve it.
  - b. Go to your teacher and ask her how you can improve it.
  - c. Rewrite the theme on another sheet without improving it and give it back to your teacher.
  
8. Your father and your mother are both working outside in a factory. You do not have servants to do the housework. So your mother has to do the housework as soon as she comes home. What would you do?
  - a. Ask your parents to hire a servant.
  - b. Ask your sisters and your brothers to help your mother.
  - c. Help your mother in the housework before and after school.
  
9. It is your elder sister's turn to prepare supper for the family. But this afternoon she does not come home early because her class is attending the review for the NCEE. What would you do?
  - a. Tell your parents about it.
  - b. Wait for your sister.
  - c. Prepare supper for the family.
  
10. Your classmates cheat during examination and they got high scores. Your teacher does not know about their cheating. What would you do?
  - a. Get angry with your classmates and quarrel with them.
  - b. Tell your parents about what your classmates do.
  - c. Tell your teacher about what your classmates who cheat.
  
11. Your parents have a habit of borrowing money from others in order to celebrate the town fiesta. What would you do?
  - a. Tell them that the habit is bad.
  - b. Do not say anything because you are yet young.
  - c. Ask them to buy a new pair of shoes for you with the borrowed money.



12. Your teacher has divided your class into five groups; each group is given a plot to cultivate and to plant with vegetables. Your group finished the work in one week. But your friends are still working on their plot. What would you do?
  - a. Tell them that they work very slowly.
  - b. Stay away from them.
  - c. Ask them how you could help them.
13. You have planted tomatoes and onions in your backyard. But your plants are not healthy. What would you do?
  - a. Pull them and throw them away.
  - b. Put horse manure into the soil.
  - c. Ask your garden teacher why your plants are not healthy.
14. When you come home from school, you find out that there is no water for cooking and for drinking. Your family fetches water from the artesian well. What would you do?
  - a. Wait for your parents to come home.
  - b. Ask your brother to fetch water as soon as he comes home.
  - c. Go and fetch water yourself.
15. Your teacher appointed you as leader for the group to clean the canal along the national road. What would you do?
  - a. Watch your members clean the canal.
  - b. Talk to the other leaders.
  - c. Help your group clean the canal.
16. The school principal is distributing evaluation sheets to the students. He asks the students to evaluate their teachers. What would you do?
  - a. Make the evaluation in order to please your teacher.
  - b. Refuse to make the evaluation.
  - c. Make the evaluation as honestly as you can.

17. You are seated in a passenger jeepney. You see an old woman carrying a big basket full of bananas. She climbs up the jeepney with great difficulty. What would you do?
- Ask the driver to help the old woman.
  - Pity the old woman.
  - Get up and help the old woman with her basket yourself.
18. Your neighbors have the habit of throwing dead rats into the middle of the street. What would you do?
- Tell them to get it from the street and bury it.
  - Do nothing about it.
  - Pick it up and bury it.

Test II. Do you Agree?

Here are statements about situations, things, and people in the community. We want to know what you think about these situations, things and people. Read each statement carefully and show what you think about each statement by encircling Agree, Disagree or Not Sure. Be sure to choose the answer that tells how you really feel and think about the statement. Remember: There are no right and wrong answers.

EXAMPLES:

- Vegetable gardening can be a source of family income.  
 Agree      Disagree      Not Sure
- Rich people do not have to work for a living.  
 Agree       Disagree      Not Sure
- Vitamins are necessary for the body.  
 Agree      Disagree       Not Sure

BEGIN HERE:

- The rich businessman does not need the assistance of the ordinary farmer.  
 Agree      Disagree      Not Sure

20. Our better quality native shoes and bags are just as good as better quality shoes and bags from Japan.
- Agree            Disagree            Not Sure
21. The tax drive of the BIR people is necessary for the support and maintenance of the country.
- Agree            Disagree            Not Sure
22. A poor family with three children is healthier and happier than a poor family with eight children.
- Agree            Disagree            Not Sure
23. People should learn to do things on their own initiative without being told and supervised.
- Agree            Disagree            Not Sure
24. Children of rich families do not have to do housework because they have maids at home.
- Agree            Disagree            Not Sure
25. It is better to exhibit one's work even if it is not perfect, rather than to borrow someone's work to present at the exhibit.
- Agree            Disagree            Not Sure
26. The father or the mother may work out the child's homework if it is difficult for the child.
- Agree            Disagree            Not Sure
27. Community progress can best be attained by group effort.
- Agree            Disagree            Not Sure
28. Filipino workers in other countries must be paid salaries equal to the salaries of Japanese, Americans or Germans working in the same office.
- Agree            Disagree            Not Sure

29. A jeepney driver can make a left-turn at the corner with No-Left-Turn sign if the traffic policeman is not looking in his direction.
- Agree            Disagree            Not Sure
30. Healthy and educated citizens are the country's wealth.
- Agree            Disagree            Not Sure
31. The use of modern machines results in bigger production and cheaper goods.
- Agree            Disagree            Not Sure
32. The school's emphasis on work education is intended to produce more useful productive citizens.
- Agree            Disagree            Not Sure
33. It is much better to become a good mechanic than to be an unsuccessful engineer.
- Agree            Disagree            Not Sure
34. It is better to work as a janitor in a business company than to serve as a secretary in the family's business.
- Agree            Disagree            Not Sure
35. Every citizen from 18 and above must exercise his right to vote freely.
- Agree            Disagree            Not Sure
36. One must have the courage to tell our local and national leaders about what is right and what is wrong in what they do for us.
- Agree            Disagree            Not Sure
37. An educated nation is necessary for economic progress.
- Agree            Disagree            Not Sure
38. Time wasted is riches wasted.
- Agree            Disagree            Not Sure

39. Boys do not have to learn to baby sit, to cook or to wash dishes but they must learn to repair broken chairs and tables.

Agree          Disagree          Not Sure

40. One must learn to work honestly in order to become successful.

Agree          Disagree          Not Sure

41. One should be ashamed that he has to work as a houseboy during the day so that he can go to school at night.

Agree          Disagree          Not Sure

42. Girls must not wait for their mothers to mend their torn dresses but they must mend them at once.

Agree          Disagree          Not Sure

43. One must not be afraid to say no to what is not good or right.

Agree          Disagree          Not Sure

44. One must always respect the opinion of others.

Agree          Disagree          Not Sure

45. Families with grown up children do not need servants.

Agree          Disagree          Not Sure

HOW TO USE THE INSTRUMENT FOR DATA GATHERING  
(For Cebuano-Speaking Subjects)

I. Interview Schedule for Dropouts:

1. The pupil's name may be written after the interview so that the subject will not be biased in his answers through his knowledge that he is identified.
2. Before asking the questions in the schedule assure the subject that his answers will not do him any harm. Say:

Kining among gipangutana kanimo usa kini ka bahin sa research nga gihimo karon alang sa pag-susi kun unsay rason nga dili makapadayon sa pag-eskuela ang ubang mga bata. Ayaw lamang pagpanuko sa paghatag sa hustong tubag kay dili man nganlan ang imong ngalan diha sa report. Busa ihatag lang ang labing tinuod nga tubag. Ania ang mga pangutana:

3. Read out the questions as they are worded in the interview schedule; then to ensure comprehension and thus to ensure correct response give the free translation in the native language.
  - I. Ngano nga miundang ka man sa pag-eskuela?
  - II. Kanus-a ka man mibiya sa pag-eskuela?
  - III. Unsa ka mang gradoha sa pagbiya nimo?
  - IV. Nagtrabaho ka ba karon? Pila na man ka bulan ikaw nga nagtrabaho? Kun ikaw nagtrabaho karon, hain man ikaw nagtrabaho?
  - V. Tubagon nato kining mosunod nga mga pangutana: (Read out the questions and if the respondent hesitates to give the answer give him the free translation for each question).
4. Thank the subject for his cooperation. Say:

Daghang Salamat sa Imong Pagtabang

5. Inform the subject that a test will be administered to him in November/December and that he will be given some cash for his transportation expenses to and from the school where the test will be given.
6. Write the subject's name after he has left.

## II. Student's Data Sheet:

1. This form will be filled out by you in cooperation with the subject's teacher-advisers. Arrange for a meeting with the adviser at his/her convenience.
2. The items in No. 1 will be easily filled up.
3. The information asked for in No. II may be taken from the student's Permanent Records. Get the student's final rating for each subject area for the preceding curriculum years and the student's latest grading period grade for the current curriculum year.
4. Request the Teacher-Adviser to accomplish No. III on the Ranking of the student.
5. The information in No. IV may be obtained from:
  - a. the library's records for No. 1
  - b. Form 1 or the attendance sheet for No. 2
  - c. the teacher's class record for No. 3

## III. The Student's/Worker's Self-Report Questionnaire:

1. The two questionnaires are parallel instruments. The worker's Self-Report Questionnaire is to be administered to the dropouts among our subjects; the Student's Self-Report Questionnaire is for those who are in school.
2. Have the subjects take the seats that are comfortable for them. Separate the IMPACT students from the Non-IMPACT students. Find out if the room is properly lighted; if it is not, request for another room. If you have to transfer to another room, give the subjects enough time to feel comfortable in their new seats before you proceed with the next instructions.

3. Ask if everyone has a pencil or pen. If someone does not have any, provide him/her with one of those that you have brought with you.
4. Tell them the purpose of this questionnaire. Say:

- a. Dili kini test ug wala kini ing right or wrong answers.
- b. Wala kini labut sa inyong grado; dili kamo gradehan sa inyong makuha niini.
- c. Ang inyong maestra dili makabasa sa inyong tubag kay amo man kining dad-on.
- d. Ang tuyo lamang niini mao ang pagpakisayod kon unsa ang inyong hunahuna mahitungod niining nia dinhi sa questionnaire.

5. Distribute the questionnaire. See to it that each one has a copy of his own.
6. Now tell the subjects that you will read the instructions aloud and that they read with you silently. Read the directions. To ensure comprehension say:

Basaha ang matag tudling. Kun ikaw makauyon sa gipasabot sa tudling, lingini ang Agree; kun ikaw dili uyon sa gipasabot sa tudling, lingini ang Disagree. Kun wala ka makaseguro, kun nahiuyon ba ikaw o wala, lingini ang Not Sure.

7. If everybody understands the directions, proceed to the examples. Say:

Basahon ta kining examples. No. 1: I like working in a big factory. Ang akong tubag mao ang Disagree kay dili man ako gusto nga motrabaho sa dako nga pabrika. Apan ikaw dili kinahanglan nga motubag sama sa akong tubag. Kay ikaw miuyon man, busa linginan mo ang Agree; o di ba wala ikaw makaseguro nga mouyon ka ba o dili, busa imong linginan ang Not Sure. Ang akong paglingin sa Disagree dinhi wala magpasabot nga kini mao ang hustong tubag. Sa giingon ko na, walay husto o sayop nga tubag.



No. 2: I do not like to go home at once after my work. Ang akong tubag Agree. Kinahanglan ba nga Agree usab ang imong tubag bisan ug dili ka uyon?

No. 3: I enjoy working in a big city. Ang akong tubag Not Sure kay dili man ko seguro kun gusto ba akong motrabaho sa dakong siyudad. Apan unsa may imong tubag? Ikaw? Ikaw? Ikaw?

8. Say:

Nakasabot naman kamo kun unsaon pagtubag ang matag tudling, magsugod na ta.

- a. Akong basan ang matag numero. Unya akong ihatag ang tubag sa Binisaya. Unya usbon ko na sabingbasa.
- b. Tubaga pingagi sa paglingin sa usa sa mga tubag. Maay lingini ang imong gusto nga tubag.

Andam na ba kamo? Sigi magsugod na kita.

9. Here are the translations:

- A.
  1. Angayan ko sa akong sinina.
  2. Kanunay akong kapuyan ug dili ako makatuon sa akong leksyon./ Kanunay akong kapuyan bisan padulong pa lang ako sa akong trabaho.
  3. Gitinguha ko nga maklaro ang akong sinultihan aron mahisabtan sa uban.
  4. Dili ako maglingalinga kon ako adunay pagabuhaton.
  5. Maayong paminawon ang akong sinultihan.
  6. Maayo ang akong pamarog.
- B.
  1. Makamao akong moamping sa libro ug ubang mga galamiton sa eskuelahan./ Makamao akong moamping sa mga galamiton sa akong trabaho.
  2. Dili ako makamaong mouli sa libro ug ubang galamiton didto sa akong gikuhaan inigkahuman ko ug gamit niini./ Dili ako makamaong mouli sa mga galamiton didto sa akong gikuhaan inigkahuman ko ug gamit niini.

3. Gitinguha ko gayong tapuson ang bisan unsang buluhaton nga gihatag kanako.
  4. Ang mga lagda ug tamdanan gikinahanglan gayud sa tulunggaan./ Ang mga lagda ug tamdanan gikinahanglan gayud sa akong maayong pagtrabaho.
  5. Ang paglimpyo sa akong tulunggaan dili ko katungdanan./ Ang paglimpyo sa akong gitrabahon dili ko katungdanan.
  6. Maulaw akong mopakita sa uban sa akong trabaho.
  7. Gitinguha ko gayud sa pagpakita sa kinamaayohan kong buhat sa akong leksyon ug sa mga sugo kanako.
  8. Dili ako mahadlok mosulay sa mga binag-ong paagi sa pagbuhat.
- C.
1. Ikagdait ko ang kadaghanan sa akong mga kauban sa tulunggaan./Ikagdait ko ang kadaghanan sa akong mga kauban sa trabaho.
  2. Gitinguha gayud nako ang pagtuman sa akong bahin sa mga buluhaton sa grupo.
  3. Dili ako gusto nga motabang kang bisan kinsa sa akong mga kauban sa klase o' trabaho.
  4. Mas gusto kong magbinugtong pagbuhat kay sa magbuhat uban sa kadaghanan.
  5. Dili ko gustong makighigala sa dili parehas nako ug relihiyon.
  6. Dali akong mogamit sa akong kusog kun dili mohatag ug hustong pagtamod kanako o' sa akong mga butang.
- D.
1. Dili ako matahang makig-estorya sa akong maestra/boss.
  2. Panagsa ra kaayo akong mangutana sa akong maestra sa panahon sa among discussion sa leksyon./Panagsa ra kaayo akong mangutana sa akong boss bahin sa akong gibuhad.
  3. Dili ako mahimutang kun ang akong maestra/boss anaa sa akong duol samtang nagbuhat ako.
  4. Gusto akong mobuhat sa ipabuhat kanako sa akong maestra/boss.
  5. Madali akong makasabot sa buot ipasabot kanako sa akong maestra/boss.
  6. Kasagaran makahuman ako sa trabaho nga wala magkinahanglan sa panabang sa akong maestra/boss.
  7. Dili ako gustong mohagad sa pagbuhat sa mga buluhaton alang sa akong maestra/boss.

8. Kasagaran makasabot ako sa mga tugon nga ipasubay kanako sa akong maestra/boss.
9. Sa akong hunahuna nakauyon kanako ang akong maestra/boss.
10. If everybody has finished writing his answers, collect the papers, separating those of the IMPACT subjects from the Non-IMPACT subjects.
11. Then express sincere thanks to the subjects and to the teachers/employers.

IV. The Attitude Questionnaire:

1. This is intended for the students. Administer this after the interval of 15 minutes from the time the last subject submitted his Self-Report Questionnaire.
2. Ensure that the subjects are comfortably seated before you distribute copies of the questionnaire.
3. With each student holding his copy of the questionnaire tell the group to read the instruction silently as you read them aloud.
4. Then say:

You will answer this questionnaire by encircling Agree, Disagree, and Not Sure, like what you did with the Self-Report Questionnaire. Remember there are no right and wrong answers. You only have to indicate what you really think about each statement.

5. As soon as everybody has finished, collect the papers, separating the papers for the IMPACT students from those of the Non-IMPACT students.
6. Thank your subjects for their cooperation and the teachers/employers for their assistance.

V. Teacher-Advisers/Employers Checklist:

1. Consult your data on the whereabouts of the graduates to determine how many students have the same advisers or how many workers work for the same employers.
2. Prepare enough copies of the questionnaire for each adviser/employer.
3. Approach the teacher-advisers and employers with utmost courtesy.
4. Explain to them the purpose of our study. Say:

We are gathering data on the Self-Concept of students/workers. They have been asked to accomplish the questionnaires. And we are requesting you to fill out a parallel questionnaire to enable us to determine if the students/workers self-concept is similar to the teachers/employer's appraisal on the same points.

This research activity is a part of an international research activity which is done in cooperation with the Ministry of Education and Culture. The information that we gather from you will be very important to this research. Please accomplish this questionnaire at your own time and I'll come back for it at a future date which you suggest.

5. Check if the actual number of students/workers in his charge tallies with our records and leave them enough copies.
6. Always thank the teachers/employers for their cooperation.

NOTE: The field worker must not deviate from any of these instructions to ensure uniformity of the "testing conditions."

HOW TO USE THE INSTRUMENT FOR DATA GATHERING  
(For Tagalog-Speaking Subjects)

I. Interview Schedule for Dropouts:

1. The pupil's name may be written after the interview so that the subject will not be biased in his answers through his knowledge that he is identified.
2. Before asking the questions in the schedule assure the subject that his answers will not do him any harm. Say:

Ang mga tanong namin ay bahagi sa isang pananaliksik na ginagawa upang alamin ang mga dahilan kung bakit hindi makapagpatuloy sa pag-eskuwela ang ibang mga bata. Huwag kang mag-atubili sa pagbibigay sa wastong sagot dahil sa ang pangalan mo ay hindi babanggitin sa ulat. Narito ang mga tanong.

3. Read out the questions as they are worded in the interview schedule; then to ensure comprehension and thus to ensure correct response give the free translation in the native language.
  - I. Bakit ka huminto sa pag-aaral? (Pagpasok sa eskuwela?)
  - II. Kailan ka tumigil sa pag-aaral? Anong baitang ka nang ikaw'y huminto?
  - III. Nagtatrabaho ka ba ngayon? Ilang buwan ka nang nagtatrabaho? Kung nagtatrabaho ka, saan ka nagtatrabaho?
  - IV. Sagutin ang mga sumusunod sa mga tanong. (Read out the questions and if the respondent hesitates to give the correct answer, give him the free translation.)
4. Thank the subject for his cooperation. Say:

Maraming Salamat sa Iyong Pagtulong.

5. Inform the subject that a test will be administered to him in November/December and that he will be given some cash for his transportation expenses to and from the school where the test will be given.
6. Write the subject's name after he has left.

## II. Student's Data Sheet:

1. This form will be filled out by you in cooperation with the subjects' teacher-advisers. Arrange for a meeting with the adviser at his/her convenience.
2. The items in No. I will be easily filled up.
3. The information asked for in No. II may be taken from the student's Permanent Records. Get the student's final rating for each subject area for the preceding curriculum year and the student's latest grading-period grade for the current curriculum year.
4. Request the Teacher-Adviser to accomplish No. III on the ranking of the student.
5. The information in No. IV may be obtained from:
  - a. the library's records, for No. 1.
  - b. Form 1 or the attendance sheet for No. 2
  - c. the teacher's class record for No. 3

## III. The Student's/Worker's Self-Report Questionnaire:

1. The questionnaires are parallel instruments. The Worker's Self-Report Questionnaire is to be administered to the dropouts among our subjects; the Student's Self-Report Questionnaire is for those who are in school.
2. Have the subjects take the seats that are comfortable for them. Separate the IMPACT students from the Non-IMPACT students. Find out if the room is properly lighted; if it is not, request for another room. If you have to transfer to another room, give the subjects enough time to feel comfortable in their new seats before you proceed with the next instructions.

3. Ask if everyone has a pencil or pen. If someone does not have any, provide him/her with one of those that you have brought with you.
4. Tell them the purpose of this questionnaire. Say:

- a. Hindi ito pagsusulit kaya wala itong tama o maling sagot.
- b. Wala itong kinalaman sa inyong grado o marka, hindi kayo bibigyan ng marka dito.
- k. Hindi mababasa ng inyong mga guro ang inyong sagot dahil sa dadalhin namin ito.
- d. Ang layunin nito ay alamin lamang ang inyong kurukuro hinggil sa nilalaman nitong palatanganan (questionnaire).

5. Distribute the questionnaire. See to it that each one has a copy of his own.
6. Now tell the subjects that you will read the instructions aloud and that they read with you silently. Read the directions. To ensure comprehension say:

Basahin ang bawa't pangungusap. Kung sumasang-ayon ka sa ipinapahayag sa pangungusap, bilugan mo ang Agree; kung hindi ka sumasang-ayon sa ipinapahayag sa pangungusap, bilugan mo ang Disagree; kung hindi ka nakasisiguro kung sumasang-ayon ka ba o hindi, bilugan mo ang Not Sure.

7. If everybody understands the directions, proceed to the examples. Say:

Basahin natin itong mga halimbawa:

Blg. 1: I like working in a big factory. Ang aking sagot ay Disagree dahil sa ayaw kong magtrabaho sa isang malaking pagawaan. Ngunit hindi ka dapat sumagot nang tulad ng aking sagot; kung ikaw ay sumasang-ayon, bilugan mo ang Agree; kung hindi ka nakatitiyak kung sumasang-ayon ka ba o hindi, bilugan mo ang Not Sure. Ang paglagay ko ng bilog sa Disagree ay hindi nangangahulugang ito ang tamang sagot. Sa nasabi ko na, walang husto o maling sagot.

Blg. 2: I do not like to go home at once after my work. Ang aking sagot ay Agree. Kailangan bang Agree rin ang inyong sagot kahit na hindi ka sumasang-ayon?

Blg. 3: I enjoy working in a big city. Ang aking sagot ay Not Sure dahil sa hindi ako nakatitiyak kung ibig ko bang magtrabaho sa malaking siyudad. Ikaw ano ang iyong sagot? Ikaw? Ikaw? Ikaw?

8. Say:

Naintindihan na ninyo kung paano ang pag-sagot sa bawat pangungusap kaya magsimula na tayo.

- a. Basahin ko ang bawa't bilang. Ibibigay ko ang salin nito sa Pilipino. Pagkatapos babasahin ko li.
- b. Sagutin ang bawa't bilang sa pamamagitan ng pagbilog ng isa sa pinapipiliang sagot. Bilugan mo ang sagot na iyong napili.

Handa na ba kayo? Magsimula na tayo.

9. Here are the translations:

- A.
  1. Bagay sa akin ang aking damit.
  2. Lagi akong napapagod kaya hindi ako makapag-aral sa aking liksiyon./Lagi akong napapagod kahit papunta pa lang ako sa aking gawain.
  3. Pinagsisikapan kong maging maliwanag ang aking pagsasalita para maunawaan ng iba.
  4. Karaniwang ibinubuhos ko ang aking loob sa aking ginagawa.
  5. Ang aking tinig ay karaniwang magandang pakinggan.
  6. Ang tindig ko'y masagwang tingnan.
- B.
  1. Marunong akong mag-ingat sa aking aklat at iba pang kagamitan sa paaralan./Marunong akong mag-ingat sa mga kagamitan na aking ginagamit.
  2. Hindi ako marunong magsauli sa mga aklat na



aking ginamit sa lalagyan nito pagkatapos ko itong gamitin./Hindi ako marunong magsauli sa mga kagamitan sa lalagyan nito pagkatapos ko itong gamitin.

3. Pinagsisikapan kong tapusin ang ano mang gawain ipinagagawa sa akin.
  4. Higit kong gusto ang magtrabaho o gumawa nang nag-iisa, kaysa sa magtrabaho o gumagawa na kasama sa pangkat.
  5. Ayaw kong makipagkaibigan sa mga taong iba ang relihiyon sa akin.
  6. Karaniwa'y talagang gusto kong pagbuhatan ng kamay ang mga kaklase kong hindi gumagalang sa akin o sa aking mga gamit.
- D.
1. Hindi ako natatakot makipagsalitaan sa aking guro/boss tungkol sa aking mga gawain.
  2. Bihira akong nagtatanong sa guro sa oras ng pagtatalakayan sa aming liksiyon./Bihira akong nagtatanong sa aking boss tungkol sa aking gawain.
  3. Hindi ako mapapalagay sa aking ginagawa kung ang aking guro/boss ay nasa aking tabi.
  4. Gusto kong gumawa sa ipinagagawa sa akin ng aking guro/boss.
  5. Karaniwang naunawaan ko ang ipinaliliwanag sa akin ng aking guro/boss.
  6. Malimit kong natatapos ang aking gawain ng di na kailangan tulungan pa ang aking guro/boss.
  7. Ayaw kong magboluntaryo o umako sa paggawa ng gawain para sa aking guro/boss.
  8. Iginagalang ko ang aking guro/boss.
  9. Karaniwa'y naunawaan ko ang mga panutong ibinibigay sa akin ng guro sa loob ng klase.
  10. Sa pakiwari ko, nagugustuhan ako ng aking guro/boss.

#### IV. The Attitude Questionnaire:

1. This is intended for the students. Administer this after an interval of 15 minutes from the time the last subject submitted his Self-Report Questionnaire.
2. Ensure that the subjects are comfortably seated before you distribute copies of the questionnaire.

3. With each student holding his copy of the questionnaire tell the group to read the instructions silently as you read them aloud.
4. Then say:

You will answer this questionnaire by encircling Agree, Disagree, and Not Sure, like what you did with the Self-Report Questionnaire. Remember there are no right and wrong answers. You only have to indicate what you really think about each statement.

I will read each statement aloud while you read it silently. If anyone cannot understand a word, he can raise his hand so that I will explain it to everybody. Then I read the statement again and you encircle your answer.

5. As soon as everybody has finished, collect the papers, separating the papers for the IMPACT students from those of the Non-IMPACT students.
6. Thank your subjects for their cooperation and the teachers/employers for their assistance.

V. Teacher-Advisers/Employer's Checklist:

1. Consult our data on the whereabouts of graduates to determine how many students have the same advisers or how many workers work for the same employers.
2. Prepare enough copies of the questionnaire for each adviser and employer.
3. Approach the teacher-advisers and employers with utmost courtesy.
4. Explain to them the purpose of our study. Say:

We are gathering data on the self-concept of students/workers. They have been asked to accomplish the questionnaires. And we are requesting you to fill out a parallel questionnaire to enable us to determine if the students/worker's self-concept is similar to the teachers/employer's appraisal on the same points.

This research activity is a part of an international research activity which is done in cooperation with the Ministry of Education and Culture. The information that we gather from you will be very important to this research. Please accomplish this questionnaire at your own free time and I'll come back for it a future date which you suggest.

5. Check if the actual number of students/workers in his charge tallies with our records and leave them enough copies.
6. Always thank the teachers/employers for their cooperation.

NOTE: The field worker must not deviate from any of these instructions to ensure uniformity of the "testing conditions."

INTERVIEW SCHEDULE FOR PARENTS

What do you think about the IMPACT Schools with regards to:

a. Achievement \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. Self-discipline \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. Developing Personality Traits \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

d. Study habits \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## APPENDIX C

## PARENTS OCCUPATION\*

## Scale 1

(Architects, Engineers, Surveyors, Chemists, Pharmacists, Agricultural and Natural Scientists, Professors, Teachers, Doctors, Dentists, Nurses, Optometrists, Dieticians, and Nutritionists, Med Tech, Lawyers, Judges, Clergymen, Social Workers, Accountants, Economists, Sociologists, Psychologists, Statisticians, Historians, Writers)

## Scale 2

(Government Officials, Directors, Managers, Officers of the Military)

## Scale 3

(Bookkeepers, Accounting Clerks, Cashiers, Stenographers, Typists, Office Machine Operators, Clerical Workers)

## Scale 4

(Working Proprietors Wholesale and Retail, Insurance and Real Estate Agents, Traveling Salesmen, Shop Attendants.)

## Scale 5

(Miners, Quarrymen, Sand & Gravel Workers, Well Drillers, Mineral Treaters)

## Scale 6

(Deck Officers, Marine Engineers, Officers and Pilots, Drivers, Firemen, Traffic Supervisors, Conductors, Telegraph and Telephone Workers, Postmen, Messengers)

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\*Adapted from the Classification of the Ministry of Labor.

## Scale 7

(Spinners, Weavers, Knitters, Dyers, Tailors, Embroiderers, Footwear Makers, Furnacemen, Rollers, Drawers, Precision Instrument Mechanics, Toolmakers, Machinists, Plumbers, Welders, Platers, Electricians, Draftsmen and Technicians)

## Scale 8

(Farmers, Fishermen, Hunters, Loggers, Forest Rangers)

## Scale 9

(Carpenters, Cabinet Makers, Painters, Bricklayers, Mason, Construction Workers, Compositors, Pressmen, Engravers, Bookbinders, Potters, Kilnmen, Glass and Clay Workers, Bakers, Brewers, Millers, Chemical Workers, Tobacco Preparers, Tobacco Product Workers, Craftsmen, Photographic Darkroom Workers, Packers, Labellers, Equipment Operators, Soldiers)

## Scale 10

(Firefighters, Policemen, Guards, Housekeepers, Cooks, Maids, Waiters, Bartenders, Barbers, Hairdressers, Beauticians, Launderers, Dry Cleaners, Pressers, Athletes, Sportsmen, Photographers, Embalmers, Undertakers, Hospital and Clinic Attendants, Hostesses, Porters, Shoeshine Boys, Caddies, Pin Boys, Tennis Boys)

## Scale 11

(Common Laborers)

## Scale 12

(Workers Seeking Employment)

## APPENDIX D

TABLE OF SPECIFICATIONS FOR THE ATTITUDE INVENTORY-SOUTELE

<u>OBJECTIVES</u>	<u>NO. OF ITEMS</u>	<u>ITEM NUMBERS</u>
I. Manifests willingness to perform roles in the social, moral and economic development of the group(s) where the individual belongs		
1. Accepts that laws and regulations contribute to group/community order	5	1, 4, 5, 7, 15
2. Decides to take an active role in the perpetuation of customs and traditions	3	3, 9, 10
3. Helps others in group work as well as in carrying out their individual tasks	3	2, 6, 8
4. Accepts systematic ways of planning and solving problems as a necessary support to economic development	4	11, 12, 13, 14
II. Indicates willingness to perform manipulative work and similar responsibilities at home and in the community		
1. Shows desire to perform one's task well	6	19, 20, 21, 22, 27, 29
2. Shows willingness to cooperate with others in their tasks	5	16, 17, 23, 25, 26

3.	Practices systematic planning of activities and solving of problems	4	18, 24, 28, 30
III.	Judges moral issues, social and economic policies and practices in terms of public welfare		
1.	Believes that people can live in harmony and peace because of interdependence	5	2, 3, 5, 8, 9
2.	Accepts that government exists to regulate the people's activities	2	6, 7
3.	Recognizes that people's values about population affect economic development	2	1, 4
4.	Realizes that economic development is affected by several factors (like individual capacities as well as advanced technology in the society)	6	10, 11, 12, 13 14, 15
IV.	Manifests a positive attitude toward work		
1.	Believes that the individual should be ready to perform varied roles in the family or in the group	6	16, 20, 21, 22 24, 26
2.	Shows desire to perform any task to the best of one's ability	5	17, 19, 23, 25 28
3.	Shows initiative to work independently	4	18, 27, 29, 30



## APPENDIX E

## MEMORANDUM OF AGREEMENT

## I. Parties to the Agreement

- A. This is a Memorandum of Agreement between the Ministry of Education and Culture, Republic of the Philippines, or the First Party, and the SEAMEO Regional Center for Educational Innovation and Technology, hereinafter referred to as INNOTECH or the Second Party.
- B. In the signing of this Memorandum, the First Party is represented by the Deputy Minister of the Ministry of Education and Culture and the Second Party is represented by the Deputy Director of INNOTECH.

## II. Period of Agreement

This Agreement shall be effective from December 3 to 10 but may be reset with the consent of both parties. The tentative schedule of activities is as follows:

- |             |   |
|-------------|---|
| December 3  | Arrival in Cebu from Manila and courtesy call at the MEC Regional and Division Offices. |
| December 4  | Testing in Naga.  |
| December 5  | Sorting out papers used in Naga and preparing papers for Lapu-lapu City.                |
| December 6, | Testing in Lapu-lapu City.  |
| December 7  | Departure for Manila.   |
| December 10 | Testing for Sapang Palay.   |

## III. Title and Purpose

- A. The title of the Project for which the services of the NETC of the MEC has been requested is the INNOTECH Two-Year Follow-Up Study of the IMPACT and Non-IMPACT graduates and Dropouts for 1977-1978 and 1978-1979.

#### B. Purpose of the Project

The Follow-Up Study has been undertaken in order to come up with more empirical data on the performance of the IMPACT graduates and dropouts as compared with that of the Non-IMPACT graduates and dropouts in the comparable "control" schools.

#### IV. Type of Activity

INNOTECH requests for the administration of the Philippine Educational Placement Test for the research subjects, both the in-school and the out-of-school in Sapang Palay, Bulacan and in Naga and Lapu-lapu City, Cebu, by the staff of the National Educational Testing Center.

The subjects are the dropouts and the graduates of the IMPACT and the comparable Non-IMPACT schools for the school year 1977-1978 and 1978-1979. These in-school subjects are studying in the secondary schools in these three sites and the dropouts are either employed or just staying at home in these three communities.

A school will be designated as the testing place for each site.

#### V. Responsibilities of the Parties to this Agreement

##### A. INNOTECH Agrees to:

1. Provide the travel expenses and the per diem for the examiners;
2. Provide proctors to assist the examiners;
3. Prepare the physical facilities needed for the testing in cooperation with the secondary school administrators and teachers;
4. Undertake the scoring and analysis of the test results through the UP Computer Center;
5. Duly acknowledge the assistance of the MEC through the NETC in the final report of the study;

6. Provide the MEC, the NETC and the Offices of the Regional Directors and the Superintendents concerned with copies of the final report.
- B. The Ministry of Education and Culture agrees to:
1. Administer the test through the services of the staff of the National Educational Testing Center;
  2. Provide the MEC Regional Offices and the Offices of the Division Superintendents concerned and the NETC with copies of this Memorandum of Agreement for their advice on the intended activity;
  3. Allow the use of school sites for testing through the Offices of the Division Superintendents concerned.

In confirmation of this Memorandum of Agreement, we herewith affix our signatures.

Signed in Manila, Philippines  
this 20th of November, 1980.

SEAMEO Regional Center  
for Educational Innovation  
and Technology

The Ministry of Education  
and Culture, Republic of  
the Philippines

DR. SUTAN ZANTI ARBI  
Deputy Director

ATTY. HERMINEGILDO C. Dumlao  
Deputy Minister  
Ministry of Education & Culture

**Attachments:**

Xeroxed copy of the Project Proposal

## APPENDIX F

## NAGA IMPACT'S GOLDEN HARVEST FOR 1980-81

- A. Florence Ramirez who completed the elementary cycle in the IMPACT school graduated from the secondary level as honor graduate in Naga Provincial High School.
- B. The following IMPACT graduates for 1976-1977 completed their secondary in Balirong Barangay High School as honor students:
- |                      |   |                          |
|----------------------|---|--------------------------|
| 1. Lourdes Manayon   | - | Valedictorian            |
| 2. Marcial de Gracia | - | Salutatorian             |
| 3. Silvana Sanchez   | - | First Honorable Mention  |
| 4. Dina Pasculado    | - | Second Honorable Mention |
| 5. Panfilo Tolentino | - | Third Honorable Mention  |
- C. The honor students in Pangdan Barangay High School for school year 1980-1981 are IMPACT graduates for 1976-1977:
- |                       |   |                          |
|-----------------------|---|--------------------------|
| 1. Virgilio Alingaga  | - | Valedictorian            |
| 2. Normalina Bacus    | - | Salutatorian             |
| 3. Normalina Alingaga | - | First Honorable Mention  |
| 4. Doris Dakay        | - | Second Honorable Mention |
- D. The following is a list of the first ten graduates from the Naga Provincial High School who took the 1980 National College Entrance Examination administered by the Ministry of Education and Culture. The names with asterisks are

## products of the Naga IMPACT Schools.

	Names	Percentile Rank
1.	Abalo, Elisa	- 93*
2.	Ramirez, Florencia	- 91*
3.	Almadin, Emmanuel	- 90
4.	Alberto, Jaime	- 88
5.	Omambac, Gerardo	- 85*
6.	Abing, Reynaldo	- 85
	Cañete, Benjamin	- 85
	Navales, Ferdinand	- 85
7.	Bolo, Rosita	- 82*
8.	Genebraldo, Danilo	- 80
9.	Cabigas, Eugenio	- 78*
10.	Canoy, Amado	- 76
	Manubag, Ma. Consuelo	- 76