Child Caregiver Interaction in Institutional Homes

The Implementation of the MISC Program in SOS Children's Villages, Ethiopia

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This study is aimed at finding out whether the MISC program has an impact of increasing mother-child mediational interaction in institutional homes. In order to fulfill this aim, two institutional homes were selected and 8 mothers from one institution were in the intervention group while a group of 9 mothers from the other institution served as the control group. Pre-tests were conducted to see the initial level of interaction as well as determine the equivalency of the two groups of mothers. A two-weeks training on the MISC, focusing on the five principles of Mediated Learning Experience, is given for mothers in the intervention group. After the passage of two months from the end of the training, post-tests were conducted for both the groups of mothers. The results indicated that the two groups of mothers, who had a relatively equivalent level of mediational interaction at the beginning of the study, showed remarkable variation in the post-intervention assessments, in favor of the intervention group.

Table of Contents

List of Tables

List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
HIV	Human Immunodeficiency Virus
ICDP	International Child Development Program
IQ	Intelligence Quotient
MISC	Mediational Interaction for Sensitizing Caregivers
MLE	Mediated Learning Experience
OMI	Observation for Meditational Intervention
SCM	Structural Cognitive Modifiability
UNAIDS	Joint United Nations Program on Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
WHO	World Health Organization
ZPD	Zone of Proximal Development

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> *For though the fig-tree shall not blossom, neither shall fruit be in the vines; the labor of the olive shall fail, and the fields shall yield no food; the flock shall be cut off from the fold, and there shall be no herd in the stalls; Yet I will rejoice in the LORD, I will exult in the God of my salvation. God, the Lord, is my strength, and He maketh my feet like hinds' feet, and He maketh me to walk upon my high places.*

1. Background of the Study

For an optimal growth and development, children need a loving and secured environment. Their physical, psychosocial and emotional needs need to be properly fulfilled for the development of the child as a well adjusted and sociable human being. One of the most important mechanisms through which these efforts of meeting the needs of the child are accomplished is the mother-child interaction. The purpose of this interaction varies, ranging from satisfaction of physiological needs to the more complicated psychological, social and emotional needs.

Caregivers provide stimulating experiences and opportunities from an early age, helping the child to explore and understand the world around them (Rye, 2001). A secured, loving and accepting relationship with a caregiver provides the child with a platform for their intellectual and psycho-emotional development. These children can satisfy their curiosity, explore their surrounding environment and relate to others (Klein, 2001).

In many situations, however, the suitable child-caregiver interaction is hampered by environmental, social, economical and many other factors. One of such conditions which result in a lesser amount of child-caregiver interaction is the fact that the children are being raised in an institutional home. Institutional homes, in which children are locked away from social interactions with adults, and are mainly cared for their physical needs, usually result in behavioral and developmental deficits such as isolation and withdrawal, inability to concentrate, depression and craving for affection (Hundeide, 1991, Klein, 2001). Many institutional homes are usually characterized by social deprivation, which, in collaboration with lack of interaction and attention from caregivers, may result in delayed or hindered overall development of the children. In a study on children in orphanage in Iran, Hunt (1983 cited in WHO, 1997) found out that children in the orphanages show no interest in social interaction (no initiation of interaction with adults or other children). In general, these children showed lack of normal development in language, social and emotional skills.

1.1 The Orphan Problem in Ethiopia

The problem of being orphaned is one of the rapidly growing social challenges that many of the developing countries are facing. By the end of 2003, there were an estimated number of 123 million orphans below the age of 18 in 93 countries of Sub-Saharan Africa, Asia and Latin America and the Caribbean (UNICEF, 2005). When looking closer at the Sub-Saharan African countries, there were 43 million orphaned children which account to 12.3 percent of all children in the region (UNAIDS, UNICEF, & USAID, 2004). The percentage of orphaned children in the Sub-Saharan African countries is projected to be around 12.5 in the year 2010, showing an increase of 0.2 since 2003 (UNICEF, 2005).

Ethiopia is one of the hardest hit countries with this problem of being orphaned. By 2006, there were an estimated number of 4.6 million orphaned children in the country (UNICEF, 2008). In just one year, the number of orphaned children was estimated to have reached around 6 million (UNICEF, 2007). The percentage of orphaned children from the total child population by the end of 2003 was estimated to be 10-14 percent (UNAIDS, UNICEF, & USAID, 2004).

One of the major reasons that contributed for this large number of orphaned children and projected high rates for the future is the AIDS pandemic. In just two years, from 2001 to 2003, the global number of orphaned children due to AIDS increased from 11.5 to 15 million (ibid). These international trends are also reflected in the Ethiopian context. The Federal Ministry of Health/National HIV/AIDS Prevention and Control Office (2005) reported that there were around 4.9 million orphaned children in the country by 2005, of which 744,000 are AIDS orphans. This number of AIDS orphans is estimated to have reached 1 million by the end of 2007 (UNICEF, 2007). Other contributing factors for the high number of the orphaned children are war, famine and natural and human made disasters.

1.2 SOS Children's Villages, Ethiopia

Ethiopia has been experiencing cyclic drought and famine which comes around every 10 years, with the worst in recent times experienced in 1974. It was during this year that SOS-Kinderdorf International first started operating in Ethiopia. When the country finally recovered from the blow, there were thousands of children that were left orphaned and abandoned in the country. It was during this time that SOS-Kinderdorf International opened the first Children's Village at Mekele, in the northern part of the country, a place particularly affected by the famine. In 1979 and 1981two more Villages were established in Harar and Addis Ababa respectively. The last Village was built in Gode, south eastern part of the country, in response to the recent drought that hit the country in the year 2000 (SOS-Kinderdorf International, 2008)

Currently, SOS-Kinderdorf International has 6 Villages in the country that are coordinated under the SOS-National Coordination Office. In almost all of the villages there are 15 homes organized as a natural family unit in which a maximum number of 10 children are living with their mother. In all of the 6 Villages, an institutional structure which resembles a natural family unit, where each mother is responsible to "her own children and home" is used. Each Village is headed by a Village Director. This study is conducted in two of the SOS Villages, namely, SOS Addis Ababa Village and SOS Awasa Village. The Addis Ababa Village is found in the capital, Addis Ababa, while the Awasa Village is found in Awasa, around 280 km south of Addis Ababa.

1.3 Research Problem

As indicated in the projections, the number of orphaned and abandoned children in the country is increasing. Unlike the growing number of orphaned children, it is only a fraction of these children that get the chance to be admitted into institutional homes. Even though these children get the chance of being admitted into an institution, the

conditions in some of these institutions, as mentioned above and discussed in detail in literature review part, may not be suitable to foster a secure, loving and accepting relationship that the children need for a healthy intellectual and psycho-emotional development. As a result of this, many of these children in institutional homes may be deprived of an essential component in their psycho-emotional development, namely adult mediation and interaction.

The purpose of this study is to try out a mediational interaction program, the Mediational Intervention for Sensitizing Caregivers (MISC) program developed by Professor Pnina Klein (Hundeide, 1991), designed to sensitize caregivers in using interaction with the child to foster the child's psycho-emotional and intellectual development. The research question of the study is:

> *To what extent does the MISC intervention program improve caregiver meditational interaction with young children between 3 ½ to 4 ½ years of age in settings of institutional homes?*

1.4 Organization of the Thesis

This thesis is organized in five chapters. The first chapter, background of the study, presents the research problem in relation to the orphan problem of Ethiopia. It also gives short background information on the institutional home where the study is conducted. The second chapter is sub- divided into two parts. The first part of the second chapter deals with the theoretical background of the MISC program, the intervention program used in the study, as well as discussions on the MISC program. In the second sub-part of the second chapter, findings of research that used the MISC intervention program and research findings that shade light on the situation of children in institutional homes are presented.

The third chapter deals with the research design and methodological aspects of the study. In this chapter, issues pertaining to the research design, sampling procedure, methods of data collection and analysis, and issues of validity and reliability are

discussed. In the fourth chapter, a presentation of the findings of the study is made; more general findings are presented first, followed by more specific findings. In the fifth chapter, a discussion of the findings of the study is made in relation to the theoretical framework and research findings cited in the study. Observation Mediational Intervention (OMI), onto which the observation video recordings are coded, raw scores from the OMI and some examples of mother-child interactions from the observations are presented in the appendices section.

In this thesis, research reports and other reference materials produced by Ethiopian researchers and writers are cited by using the first names of the researcher or writer. Naming system in most of the European and North American countries where the majority of the reference materials come from is substantially different from the Ethiopian naming system. In the case of an Ethiopian name, the person's name is written followed by the father and the grandfather. Therefore, the first name, which is the writer's own name is used to site the reference material. Because of this, some Ethiopian Researchers' names may appear different than what appears in many books and journals, but they can be cross referenced with the names given in the reference list.

2. Theoretical Framework and Review of Literature

It is a common knowledge that all the dimensions of human development depends on two interacting factors, heredity and environment. Accordingly, the child's overall development is aided by the interaction of these two factors. Even though the child's heredity can hardly be influenced, there are various ways of enhancing the intellectual as well as psycho-emotional development of the child through environmental means. One of the most crucial aspects of the environment that can greatly influence the child's development are the caregivers. Caregivers can provide stimulating experiences and opportunities, from an early age, helping children to explore and understand the world around them (Rye, 2001).

In many situations, however, the suitable child-caregiver interaction is hampered by environmental, social, economical and many other factors. These conditions will make it hard for the caregivers to create a supportive and suitable environment for the child's psycho-emotional and intellectual development. In spite of such lack of supportive environment during early childhood, there is a possibility of making up for the early losses in intellectual development if the child gets supportive environment at some latter period (Rye, 2001).

In this part of the research report, the theoretical background of the Mediational Intervention for Sensitizing Caregivers (MISC), which is used in the research as the intervention program, is presented. First, the theory of MLE is discussed in detail, followed by a short discussion of the theoretical framework of Mediated Learning Experience (MLE) itself. Following this, the MISC program is discussed with regard to its objectives, unique features and principles. Finally, research findings on the implimentation of the MISC program and on the conditions of children in institutional homes will be presented.

2.1 Mediated Learning Experiences

Cognitive development in children takes place as a function of the interaction of the two important factors in development, heredity and environment. In relation to the interaction of the child and the environment, Feuerstein (2006, p1) made the following claim:

> *"Cognitive development occurs through an individual-environment interaction. This interaction is affected by certain characteristics of the organism (such as heredity, and maturation) and qualities of the environment (education opportunities, socio-economic status, cultural experience). Interaction between the organism and environment may occur: (a) as a direct learning experience, through direct exposure to stimulation, and (b) through a mediated learning experience that requires the presence and activity of a human being to filter, select, interpret, and elaborate that which has been experienced."*

In the case of direct learning, learning occurs through a direct interaction between the learner and some environmental learning factor (i.e. books, laboratories, etc.). On the other hand, mediated learning takes place by having the mediator intercede between the learner and environmental factors. The purpose of the mediator is to help the learner interact more productively with learning materials and then interpret their response and, if necessary, modify their responses to increase their understanding (Klein 1996).

Feuerstein and Feuerstein (1991) define MLE as a quality of interaction between the organism and its environment. Tzuriel (1991) further described MLE as an interactional process in which the caregiver puts herself in between the child and the environment and mediate a set of stimuli by affecting its frequency, order, intensity and context. The theory of MLE introduces a new concept about the process of learning, a new component to the traditional behavioral and cognitive learning theories. Feuerstein (cited in Noguez, 2002, p6) used the following diagram to make a comparison between mediated learning and direct learning.

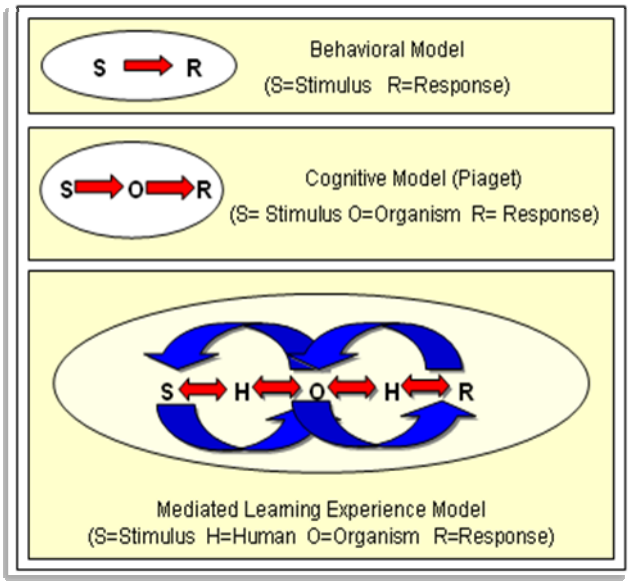

Figure 1. Models of learning

As figure 1 indicates, the behavioral and the cognitive models of learning represent the direct model of learning in that there is no mediational process between the child (O) and the environment (S). On the other hand, mediated learning involve a 'human mediator' (H) between the child (O) and the environment (S). The Human mediator intervenes in the learning process by placing themselves between the learner and the stimulus and between the learner and the response. The human mediator selects, changes, amplifies and interprets both the stimuli that come to the learner and the learner's responses towards these environmental stimuli.

As Hundeide (1991) described the mediational process, the mediator interprets and prepares experiences for the child, so that the child builds up strategies for how to focus, observe and differentiate according to a shared system of cultural meanings and values. With this mediational process, the child goes beyond the immediate experience and connects past and present experiences with expectations for the future. In other words, the mediator selects some of the stimuli that are most appropriate and then frames, filters, schedules and presents them to the child. In addition to cognitive structural changes, the child acquires behavior and learning sets, which in turn become important ingredients of the child's capacity to become

modified through direct exposure to stimuli (Feuerstein, et.al, 1980, cited in Edna 2003).

2.1.1 Principles of Mediated Learning Experience

Feuerstein (Feuerstein et al. , 1995 cited in Tzuriel, 1999, p 111) suggested 13 criteria of MLE, of which 3 are considered as necessary and sufficient for an interaction to be classified as MLE. Tzuriel (1999) explains that these three criteria, which are responsible for the individual's cognitive modifiability, are considered universal and can be found in all races, ethnic group or socioeconomic strata. He also suggests that as long as these three universal criteria are present, mediation does not depend on the modality of language or content.

Feuerstein also considers interactions to be mediational when they promote higher mental functioning in the child (Lidz, 2002). These three major criteria are intentionality and reciprocity, mediation of meaning and transcendence. The other 10 criteria were regarded to be task dependent, strongly related with culture reflecting variations in cognitive styles, motivation, type or content of skill mastered and the structure of knowledge (Tzuriel, 1999). Various writers (Klein, 1996, Rye, 2001, Hundeide, 1991, Lidz, 1991) include the first two of the ten task dependent criteria with the 3 major MLE criteria and forwarded 5 principles for MLE.

Following, a brief discussion of the five criteria of MLE is presented. In different literature (Hundeide, 1991, Klein 2001, Falik, 2006, Collins, 2001) , these criterions are given various names, like principles, parameters, components and critical attributes. In this research paper, the term principle is used primarily, with some usage of term components. A discussion of the five principles, focusing, mediation of meaning, transcendence, mediation of feelings of competence and mediation of regulation of behavior, is presented below.

The principle of focusing is a combination of two sub-principles, intentionality and reciprocity. It is the mediator's effort to focus the child's attention on something in

the surrounding environment, with a certain level of reciprocity from the side of the child by giving his/her attention to the mediator's behavior (Klein, 1996). The principle of focusing is comprised of two components, intentionality and reciprocity.

Klein & Feuerstein (1985 cited in Lidz, 1991) stated that MLE is a conscious, intentional act, not an accidental one, in which the mediator attempts a series of actions to reach the object of mediation. Intentionality transforms any interactive situation from accidental into a purposeful one. By constantly focusing on the child's state of attention, problem solving strategies, mistakes, and insights, the adult enriches the learning situation with a sense of purpose and intentionality" (Kozulin, 1998, cited in Collins 2001).

An effective MLE need to be reciprocal in the sense that both the child and mediator need to establish a positive connection of acceptance, trust and understanding (Collins, 2001). Klein also stated that reciprocity is achieved when the caregiver succeeded in winning the child's attention so that the child responds vocally, verbally or non-verbally to the adult's behavior. Reciprocity is connected to intentionality since some level of shared attention should be present for any kind of interaction (Klein, 2001).

In the principle of transcendence, the mediator goes beyond the immediate interaction and enriches the present experience by explaining, comparing, clarifying, adding new experiences, and storytelling. The mediator widens up the mediational interaction beyond the primary and elementary goals, giving the child opportunity to widen up and diversify cognitive and affective functions. This helps the child to gain a better understanding of the underlying framework for the concepts under consideration, allowing him to have a flexible thinking. Consequently, the child develops a personal learning strategy which is applicable in a variety of situations, allowing the connection of this learned strategy with novel situations (Feuerstein & Feuerstein, 1991, Greenberg, 2000 cited in Collins, 2001, Hundeide, 1991, Klein, 2001).

Mediation of meaning represents the energetic, affective, emotional power that will make it possible for the mediational interaction to overcome resistance on the part of the learner and thereby ensure that the stimuli mediated will indeed be experienced by the learner (Feuerstein, 1988, cited in Collins, 2001). Lack of meaning, on the other hand, will affect the amount, nature, and intensity of the interaction on both mediator and the mediatee (Feuerstein &Feuerstein, 1991). In every learning situation, it is important make sure that what the learner is learning is meaningful for him/her. Likewise, in MLE, the mediator needs to clearly convey that the mediated content is meaningful for the child.

The principle of feelings of competence is achieved when caregivers express satisfaction with the child's behavior, accompanied by explanation of why they are satisfied (Klein, 1996). It involves confirming (at a feeling level) abilities and skills, creating an optimistic belief in success, empowering confidence, task accomplishment, self reflections on abilities and achievements (Feuerstein & Feuerstein, 1991; Klein, 2001; Lidz, 1991; Hundeide, 1991). It is not the mere effort or achievement that is rewarded, but the whole mental process that lead to the success (Klein, 1996).

The principle of regulation of behavior involves helping the child to monitor his/her action in relation to the task requirements and goals that he/she set (Hundeide, 1991). It involves experiencing and modifying environments to provide self-monitoring, making adjustments in responses or perspectives, developing skills through active structuring; developing insight into needs, skills, past and future experiences. (Feuerstein & Feuerstein, 1991; Klein, 2001; Lidz, 1991; Hundeide, 1991).

2.2 Theoretical Framework of MLE

Mediation and mediational learning has a long history in the fields of education and psychology. Mediation was brought to the forefront of discussions in educational psychology and child development by Vygotsky and his theory of social cultural development. In this sub-part, a brief discussion on theoretical framework of MLE will be presented from Vygotsky's socio-cultural theory and Feuerstein's structural cognitive modifiability (SCM) theory.

Mediation has a central place in Vygotsky's ideology of intellectual development. In his developmental theory, Vygotsky (1978 cited in Hundeide 1996 p. 113) use the concept of mediation to refer to *"acquisition of cultural tools, such as the use of physical tools or symbolized tools…that latter become internalized as tools of thought- what were external interactions become internal operations"*.

Vygotsky indicates that intellectual skills are products of participation in activities in the social institutions of the culture in which the person is brought up (Edna, 2003). He distinguishes between two mental functions, lower or elementary functions (inherited, natural mental abilities), and higher mental functions (mental functions developed through social interaction). These higher mental functions are the results of mediation with the culture through the use of signs and tools. (Vygotsky, 1978). The importance of mediated learning and its application is reflected in Vygotsky's concept of Zone of Proximal Development (ZPD).

Vygotsky (1978, p.86) describes Zone of Proximal Development (ZPD) as *"the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers"*. He distinguishes between those abilities that are already attained and those that are not currently attained, but can be attained sometime in the future. Abilities that are already achieved are determined through independent problem solving whereas

abilities that are on the process of development can be determined with adult guidance or in collaboration with more capable peer. In short, ZPD is the gap between what a child can do by himself and what he can do with the help of someone else. The existence of ZPD in the child calls for the internalization process.

Vygotsky describes that higher mental functions developed through social interactions with significant people in a child's life, particularly parents. Through these social interactions, a child comes to learn aspects of the culture/society that affect the child's construction of her knowledge. The specific knowledge gained by a child through these interactions also represented the shared knowledge of a culture. This process is known as internalization. (John-Steiner & Mahn, 2006)

Vygotsky (1978) describes internalization as the internal reconstruction of an external operation. He further explains that the internationalization process occurs through a series of transformations; operations that represented external events are reconstructed and begin to occur internally, and the interpersonal relationship between the child and the caregiver is transformed into an intrapersonal one.

In his discussion of properties of mediated action, Wretsch (1998) seems a little skeptical about using the term internalization to refer to the process that is described above. He states the term internalization seems to indicate a transformation of activities which were previously external and become internal; which is not always the case since some mediated actions do not pass through this internalization process. Therefore, Wretsch prefers to use the term ‘Mastery’ whereas Bakhtin used the term ‘Appropriation’ with the sense of making something one’s own (Wretsch, 1998)

Structural Cognitive Modifiability (SCM)

Mediated Learning Experiences also has its base in the theory of Structural Cognitive Modifiability (SCM) suggested by Feuerstein and his colleagues. The structural cognitive modifiability (SCM) theory is based on the assumption that human organisms have the unique capacity of becoming modified in a variety of cognitive and emotional functions and to adapt to changing demands in life situations

(Feuerstein et.al 1979, 1980, 1985 cited in Tzuriel 1991). In other words, human beings have a capacity to modify their cognitive functioning when required to respond to changing demands of life situations.

The basic assumptions of SCM theory are that (a) the human organism is an open system amenable to cognitive changes that affect its functioning, and (b) cognitive modifiability is best explained by the MLE processes (Feuerstein, et.al 1980 cited in Tzuriel 1991). The following three points are described by Falik (2006) as major characteristics of SCM:

1. Children's behavior can be changed by modifying cognitive structures and these specific behavioral changes produce more universal ones.

2. Cognitive changes are dynamic, producing transformation in rhythm, frequency and quality of the behavior and make them more open for future changes

3. The experience of continued modification produces "self-perpetuation", projecting the acquired changes into the future.

2.3 Discussion on the Theoretical Framework of MLE

It has been conveyed that the child's intellectual development depends on two interacting factors; genetic and environmental factors. Genetic factors hardly have a chance of being modified in the course of development. On the other hand, environmental conditions can be modified and changed to enhance intellectual development of the child. Especially in the last two decades, numerous research findings indicated that babies immediately after birth are capable of sensing, perceiving and responding to environmental stimuli (Klein, 2001).

These developments initiated the exposure of the child to bombarding environmental stimuli, assuming that the young child will benefit from such stimulation through the skills that he already posses. This seems to represent the first of the two types of

interaction discussed by Feuerstein, in which the child directly interacts with environmental stimuli.

On the other hand, Mediated Learning Experience (MLE) tries to appropriate the type, level, magnitude, timing and other factors of the stimulus to the child so that the child can benefit best from the interaction with the environment. This process calls for the involvement of a third party, the caregiver (or the teacher at school or any other adult), in the interaction of the child and the environment.

Vygotsky's social mediational process in intellectual development and his idea of Zone of Proximal Development are central in MLE. What a child can do by oneself could be the result of either of the two kinds of interaction that Feuerstein distinguishes, in the sense that what the child can do now could be the result of his direct exposure to the stimulus, or could be the result of previous mediation from an adult. On the other hand, ZPD can only result from the involvement of an adult caregiver (or a more capable peer) between the environmental stimulus and the child.

The caregiver appropriates the type, level, magnitude, timing and other elements of the stimulus to the child, and the child's reaction and involvement in the mediational process can indicate what abilities he will be developing in the future. As stated by Feuerstein (Feuerstein et.al, 1980 cited in Edna, 2003) the outcomes of the mediational process are also applied latter in the direct interaction of the child with the environment.

After the ZPD is determined through the mediational process, the child needs to internalize the acquired knowledge. In this regard, Vygotsky's idea of internalization seems to connect to the mediation principle of transcendence. Through internalization a child takes ideas or strategies developed collaboratively with the mediator and make them his own to guide his thinking. The mediational process of transcendence broadens the immediate situation to other related situations and allows the child to develop a flexible thinking; then the child internalizes these new ways of thinking so that he can apply them in diversified situations.

It is clear that a certain level and kind of mediation exists in every culture. But this does not mean that every society has mediational practices that are effective in assisting the child to develop a flexible and independent thinking which he can use in a variety of life situations. As Hundeide (1996) comments on the existence of mediation in every culture, the big issue is not whether there is mediation in the culture or not, but how mediation take place in the specific culture.

Mediation in general facilitates the cognitive development of the child by filtering and streaming experiences into the child's interaction with the environment so that the child benefits best from the interaction. Especially in situations where the social, economical and political conditions of the society are at stake, the seemingly natural mediational processes are seriously hampered. In such situations, the implementation of tailor fit mediational programs, like the MISC, that utilize the ideas of MLE, can facilitate the intellectual and psycho-emotional development of the child.

2.4 Meditational Intervention for Sensitizing Caregivers (MISC)

The acronym MISC stands for both the process and the objective of an approach to early intervention. The objective of the intervention is More Intelligent and Sensitive Child whereas the process through which this objective is attained is Mediational Intervention for Sensitizing Caregivers (Klein & Rye, 2004). In this research report, MISC is primarily used to represent the process aspect of the acronym.

MISC is a sensitizing program for parents, educators or other caregivers to promote the use of mediation in their daily interactions with young children. It helps them to relate to the child in a way that enhances the child's cognitive, socio-emotional and moral development and prepare the child to benefit from future learning (Klein, 2001). The program is based on the theory of Structural Cognitive Modifiability (SCM) and Mediated Learning Experiences (MLE) (Fantu, 2001).

As discussed in the previous sub-part, the theory of structural cognitive modifiability (SCM) has its basis on the assumption that human organisms have the unique capacity of becoming modified in a variety of cognitive and emotional functions and to adapt to changing demands in life situations (Feuerstein et.al 1979, 1980, 1985 cited in Tzuriel 1991). On the other hand, MLE is described as an interactional process in which caregivers puts themselves in between the child and the environment and mediate a set of stimuli by affecting its frequency, order, intensity and context (Tzuriel, 1991).

Since MISC is focused on the quality of the interaction between children and caregivers, and not on the content, it is regarded to be a method to sensitize caregivers to the positive aspects of their already existing interactions and child rearing practices (Klein, 1996). Its focus on the quality of the interaction that already exists in the society makes it more applicable in a variety of cultural settings. The program helps the caregiver to see the positive aspects of her own interaction with the child, thus strengthening the caregiver's self confidence and trust in one's capacity and traditional knowledge of child rearing (Klein, 2001). As pointed out previously, a certain level of mediation already exists in each culture. The main focus of the MISC program, therefore, is to highlight and strengthen already existing mediational practices, and empower the caregivers to utilize them for the betterment of their interactions with their children.

2.4.1 Objectives of MISC

The principal objective of the MISC program is promoting a sound, facilitative adult-child relationship and to effect the child's dispositions to learn (Klein & Rye, 2004, p 344). Similarly, Fantu (2001) states that the overall objective of MISC is to help and assist caregivers to relate to their child in ways that enhance the child's cognitive and socio-emotional development and prepare the child to benefit most from both formal and informal learning opportunities. He also goes further and distinguished four specific objectives for the MISC program: (Fantu, 2001, p 135)

- Promote positive conceptions of the child, its potential for development and caregivers' role in promoting the child's development.
- Help caregivers identify and understand the process through which they affect the child's development.
- Improve quality of child-caregiver relationship by promoting understanding of the criteria of mediation to the caregiver through a participatory educational approach.
- Promote the child's cognitive and socio-emotional development.

On the other hand, Hundeide (1991, p 57) identified the following four overall objectives for the MISC program.

- Improving caregiver's conception of the child and its potential for development, and of her/himself as a competent caregiver.
- Raising caregiver's awareness to create a more sensitive emotional communication with the child by focusing on, interpreting and responding approvingly to the child's expressed signals and initiatives, thus promoting a healthy emotional attachment to the primary caregiver.
- Improving the quality of mediation through identification intensification and transfer of certain components of quality mediation from the already existing interactions with the child.
- Reactivating sound indigenous child rearing practices. This tends to follow the implementation of the above three objectives.

2.4.2 What is Different about MISC?

Theoretical and empirical developments in the fields of mediation, child development, attachment, and mediated learning experiences led to the formulation of many intervention programs during the seventies and the eighties. The new insights gained from these developments into important qualities of caregiver-child interaction were included in the early intervention programs. (Rye, 2001)

Most of these early intervention programs are structured and follow a more instructive approach, trying to teach caregivers new or better ways of interacting with their children (Rye, 2001). Most of the programs had specific recommendations for specific types of activities and even prescribed toys to be used at specific points in time in the interaction process (Hundeide, 1996). Rather than fostering the already existing mediational interactions and empowering caregivers, these programs introduced new ways of relating to the child that mothers had to adopt. This direct and instructive approach produced three main negative effects: dependency, alienation and feelings of inferiority on parents that participated in the programs (Hundeide, 1996, Klein, 2001, Rye, 2001).

With these lessons learned, the MISC program was developed to overcome the above mentioned challenges and negative outcomes of previous intervention programs. MISC does not require the use of certain content or material since it relies upon the already existing daily interactions and activities of the child and the mother. It simply sensitizes caregivers to the positive aspects of these existing interactions in their traditions of child rearing practices. This usage of existing positive aspects of interactions in the culture makes MISC more suitable to be applied in a variety of cultural settings and ethnic diversities (Klein, 2001, Hundeide, 1991).

In MISC, caregivers are helped to see aspects of their own interaction with the child, thus strengthening their self confidence and enforce their trust in their own capacity in their traditional knowledge of child rearing practices. This is particularly achieved by pointing out positive aspects in their interaction with their child. This, in turn,

leads parents to be more motivated and interested as they gain feelings of competence as caregivers (Klein, 2001).

2.4.3 Empirical Definitions of the Principles of MLE in MISC

The five basic principles of MLE have been discussed in the sub-part on MLE. Since these principles are central in the MISC intervention, it is important to empirically define them. Each of them are briefly described below in light of their empirical usage in the implementation in the MISC intervention program (Klein, 1996, Klein, 2001)

1. Focusing- Intentionality and Reciprocity- any parental act that appears to be directed towards achieving a change in the child's perception or response. Examples of this may include selecting, exaggerating, accentuating, scheduling, grouping, sequencing, or pacing stimuli. The behavior is considered reciprocal when the child in the interaction responds vocally, verbally or nonverbally.

2. Mediation of meaning- energetic, affective, emotional power that will make it possible for the mediational interaction to overcome resistance on the part of the learner and thereby ensure that the stimuli mediated will indeed be experienced by the learner

3. Transcendence- going beyond the immediate interaction/situation and enrich the present experience by explaining, comparing, clarifying, adding new experiences, and storytelling.

4. Mediation of feelings of competence: confirming (at a feeling level) abilities and skills, creating an optimistic belief in success, empowering confidence, task accomplishment, self reflections on abilities and achievements.

5. Mediation of regulation of behavior: modeling adult behaviors, or verbally suggest to the child to regulate his/her behavior according to the nature of the task prior to overt behaviors.

2.5 Researches on MISC

The MISC intervention program has been implemented in various countries including Israel, Sweden, Norway, Ethiopia, Sri Lanka, Indonesia and USA (Klein, 2001, Tirussew & Lakew et al. 1996, Hundeide, 1996, Klein 1996). The intervention program's focus on the quality of the interaction that already exists in the society makes it more applicable in a variety of cultural settings (Klein, 2001). In this part, an effort has been made to make a review of related researches conducted by implementing the MISC intervention program.

There are a limited number of researches conducted by implementing the MISC and looking for its possible effect in enhancing mother-child or caregiver-child mediational interaction, compared to literature on the development and theoretical framework of the MISC and MLE. This limited number of researches using MISC as an intervention program was observed in the search for literature that produced repeated results from few researches. In addition to this, there is lack of researches conducted by implementing the MISC in institutional homes for orphans (as of the awareness of the researcher), for this reason, much of the presented researches are conducted on dyads in natural home settings.

In a pilot study conducted as part of a bigger project of implementing MISC in a local community in Addis Ababa, Ethiopia, Tirussew, Lakew & their associates (Tirussew, Lakew & et al. 1996) found out that children in an institutional home, who were showing signs of depression and withdrawal from social interaction, became socially active and emotionally developed after their caregivers participated in the MISC program. In addition to this, the researchers reported that clear improvements in the

quality of mother-child interaction were observed (for dyads in natural home settings) following the mothers' participation in the MISC intervention program.

A follow-up study conducted by Fantu (2001, Klein & Rye, 2004), 6 years after the initial intervention, on the persistence of the outcomes of the intervention. This follow-up study revealed that mothers who participated in the intervention continued to show more mediational interaction with their children, as compared to mothers in the comparison group. In addition to this, mothers in the intervention group, after 6 years of the intervention, were more conscious and intentional in their interaction with their children, and their children were more responsive, as compared to the mothers and children in the comparison group. Fantu (2001) concluded that these findings suggest that the MISC intervention program had a long-lasting impact on the quality of mothers' mediational behavior in interactions with infants, toddlers and young children.

The initial intervention by Tirussew, Lakew & their associates (Tirussew, Lakew & et al. 1996), as well as the follow up study by Fantu indicate that the MISC early intervention enhanced the quality of mother-child mediational interaction, and produced a long lasting effect on mother child interaction in the Ethiopian cultural context, consequently promoted socio-emotional and academic performances of the children (Klein & Rye, 2004). Even though the study is focused on dyads in natural home settings, with dyads in the institution studied only for the pilot study, the findings of the initial intervention as well as the follow-up study can be used to convey the contribution of the MISC intervention program for the overall mother-child interaction in the Ethiopian cultural context. In addition to this, there is a report that concluded the results from the intervention in the orphanage in the pilot study produced similar results as that of results from the home-based intervention (Rye, 2001).

Chiswanda (1997) conducted a study to explore and describe the mediational interaction patterns of six hearing mothers and their deaf child in Zimbabwe. Her study had two phases; in the first phase, she explored the already existing

interactional behaviors among the dyads, and in the second phase she again explored the existing interactional behaviors after the implimentation of the MISC program. The results showed that compared to the pre intervention phase, mothers demonstrated mediational interaction behaviors more frequently in the post intervention phase. On the other hand, the statistical analysis indicated that the only significant increase in interaction occurred in the principle of transcendence or expansion, while the progress in the other four principles was not considered statistically significant. Chiswanda indicated that the results of her study "concur with the proposition of MISC, that when parents are sensitized to what they can do to affect their children's development, they will try to improve their ways of mediating to the child (Klein & Hundeide 1989, in Chiswanda, 1997).

In yet another study conducted on poor families from Indonesia, Hundeide (1996) implemented the MISC to improve the human care that infants and young children need for normal development and facilitate "cultural transition". After the "translation" of the MISC program into the Indonesian context, it was implemented in a community based manner. Hundeide reported that the analysis from videotaped observations indicated that the experimental group mothers showed a significantly greater increase in mediation of meaning in the post intervention assessment as compared to mothers in the control group. Mothers in the experimental group also showed slightly more increases in mediation of feelings of competence, whereas a decrease in the principle was observed among mothers in the control group.

A decrease in the principle of regulation of behavior was observed among mothers in the post intervention assessment, while no significant difference was noted on expansion/transcendence among the two groups. Hundeide argued that the reduction in regulation of the children's behavior is an expected outcome of the intervention program. In a typical authoritarian, low-mediational profile of interaction among parents and children such as in the Indonesian culture, reduction in the principle of regulation of behavior, which was fairly high before the intervention, is only expected from the intervention program (Hundeide, 1996).

Child Rearing Practices and Parental Expectations for Children in the Ethiopian Context- A Short Overview

It has been stated that mediational interaction exists in every culture, and that the issue for discussion is not whether its existence or not, rather how it takes place in the specific cultural context (Hundeide, 1996). For this reason, the cultural conceptions on child rearing practices as well as parental expectations from their children will exert an impact over the form of interaction that may prevail in the specific society. This makes it a necessity to look at child rearing practices and parental expectations from the child in the Ethiopian socio-cultural context.

The researches that were highlighted in previous parts have also tried to investigate the areas of focus in child rearing and expectations that parents have towards children in Ethiopia. For instance, Tirussew & Lakew (Tirussew & Lakew & et al., 1996) stated that mothers and caregivers (sampled from low socioeconomic and low level of educational backgrounds) identified appropriate feeding and hygiene as the most important responsibilities of parenting a child. In their analysis of the situation, Tirussew & Lakew concluded that “psychosocial component of childrearing (is) the most neglected aspect of child rearing practices in Ethiopia”, even among parents who are professionals (ibid, p103).

Fantu (2001), in the follow-up study of the study by Tirussew & Lakew, also assessed conception of mothers on child development and child rearing, as well as expectations from the child. These mothers were selected from the same local community as in the initial study; characterized by low socioeconomic and low level of educational profiles. In this assessment, Fantu found that mothers focus primarily on fulfillment of physical needs, and expect their children to be obedient, respectful and polite.

Even though these study findings may not represent the situation in the country, they can be generalized to many situations since conditions that were observed among the families studied also prevails in most parts of the country; most of the country’s population lives under poverty and literacy level is low. Generally, in the Ethiopian

cultural context, good manners, respect for elders, obedience and meekness are prescribed as behaviors of a “good child”. As Klein & Rye (2004) noted, despite the reported loving and physically close contact between mothers and infants in Ethiopia, infants are not viewed as partners in the interaction with adults. Children are viewed as passive recipients of care by parents, teachers and other caregivers, with little consideration for the children’s initiations or preferences (Tirussew & Lakew, 1996).

2.6 Children in Institutional Homes

In this part a brief discussion of the situation of children being raised in institutional homes with regard to the psycho-emotional and cognitive aspects of the child’s overall development will be presented. The discussion will also be made with special reference to interaction with caregivers.

Many researches conducted on children in institutional homes indicate that there are various deficits in the psycho-emotional and intellectual developments of the children (Sigal et.al, 2003, Wolins, 1970, Hundeide, 1991, Muhamedrahimov & Palmov et al., 2004, McVicker, 1982 cited in WHO 1997, Skeels, 1966 cited in Hundeide, 1991, Denis, 1973 cited in Cole, Cole & Lightfoot, 2005). Children who spend their early lives in orphanages may experience significant levels of deprivation (Cole, Cole & Lightfoot, 2005). Since early clinical observations and research demonstrated cognitive, affective, and social deficits resulting from institutional child care, orphanage care has fallen into disfavor in many industrialized countries. However, it is still prevalent in many other countries (Kerig, 1995; personal communication, cited in Sigal et.al, 2003).

Orphanage is often the only available way to care for orphans in countries troubled by war, natural disaster, poverty, and a disrupted or nonexistent social service system. It may become the only form of care in countries where AIDS is ravaging the adult population (Sigal et.al, 2003). As the debate is reopened on the role of orphanages as a means of caring for abandoned, abused, or neglected children even in first world

societies, knowledge of the long-term effects of different types of orphanage care could prove to be useful (McKenzie, 1999 & Wiener, 1998 cited in Sigal et.al, 2003).

The negative consequences of institutional living, particularly for those placed at birth or before the age of 6, are not surprising when viewed in the context of attachment theory (Sigal et.al, 2003). First proposed by Bowlby and empirically studied by Ainsworth, this theory holds that attachment is a basic human need beginning in infancy (Ainsworth, Blehar, Waters, and Wall, 1978). Based on Ainsworth's description of the concept, Schaffer (2006) defined attachment as *"a deep seated emotional tie that one individual forms with another, binding them together in space and enduring over time"*.

Bowlby believed that the earliest bonds formed by children with their caregivers have a tremendous impact that continues throughout life. The development of secure attachment is crucial to infant mental health as well as the quality of the child's future relationships (Osofsky & Fitzgerald, 2000 & Zeanah, 2000 cited in Cole, Cole & Lightfoot, 2005). Child personality development also requires certain quantitative and qualitative characteristics of socio-emotional environment that are adequate to his/her needs, so that a child has early on-going interaction with one or several constant, responsive, and warm adults (Muhamedrahimov & Palmov et al., 2004).

When this need for attachment is not properly fostered or is disrupted, lasting negative emotional and behavioral consequences follow. These negative consequences include anxiety (Bowlby, 1973), depression (Bowlby, 1980; Parker, 1994), difficulties in interpersonal relationships (Bowlby, 1969; Feeney & Noller, 1990; Hazan & Shaver, 1987; Sperling & Berman, 1994), and a broad range of physical illnesses (Kotler, Buzwell, Romeo, & Bowland, 1994) (all cited in Sigal et.al, 2003). In institutional homes, that are characterized by a low level of attachment and interaction between caretakers and the children, the above mentioned diverse negative outcomes are likely to occur.

For instance, in a recent study in an orphanage The Russian Federation by Muhamedrahimov & Palmov and their co-researchers (2004), the interactions of caregivers with young children was found to be unfavorable for the psycho-emotional and intellectual development of the children. Caregivers often do not talk and do not interact socially with the child; they have low responsiveness to children's signals, and the dyads show lack of initiations and reciprocal responses, and difficulties of attuning to each other's signals. Compared to natural mothers' behavior, caregivers in the institution were less verbally expressive, show less emotion and social initiations, are less sensitive, and there is less stimulation of children, who often are neglected. All these factors are risks to mental health and typical development (Muhamedrahimov & Palmov et al., 2004).

In this study, the results from observations conducted before the intervention showed crucial deficits of the caregivers with respect to their stability and consistency, as well as responsiveness and emotional availability. Instead, the caregivers focus attention on medical care, education, and daily routine caretaking (Muhamedrahimov & Palmov et al., 2004). This thought is shared by Hundeide (1991) who commented on the situation of many children in institutions by emphasizing that these children have been deprived the basic adult interaction and human contact in general, with focus only on their physical needs.

Following these findings from the baseline study, Muhamedrahimov & Palmov and their co-researchers (2004) implemented an institution-wide early intervention program which is aimed at giving each child an early experience of ongoing interaction with his/her own close and emotionally available adults. The intervention had two parts, training of caregivers and structural changes in the orphanage to promote family-like conditions for children. The results from the post intervention assessment indicated the following outcomes:

- Caregivers do not keep children in playpens and cribs, spend more time on floor with children, and initiate play with several children.

- Children show less indiscriminate friendliness, and more stranger anxiety, more social referencing, and greater likelihood of returning to the Primary Caregiver after contact with strangers. The children also display much less self-stimulation behavior.

- Improved social relations between children and caregivers, as indicated by warm and nurturing gestures from children and adults, more smiling and talking among peers and between adults and children, and increased reciprocal interactions.

The harmful effects of low levels of stimulation and human contact were illustrated in a study conducted by Wayne Dennis and his colleagues (1973, cited in Cole, Cole & Lightfoot, 2005) in an orphanage in Lebanon. The children, who were brought to the orphanage shortly after birth, got little attention and regard for their individual needs. Conditions in the Lebanese orphanage were similar as that of the orphanage described by Muhamedrahimov & Palmov and their co-researchers (2004) presented above. The babies are left to lie on their backs in their cribs all day and the toddlers to sit in small playpens with only a ball to play with.

Denis indicated that the harmful effects of this low level of stimulation and human contact were evident within a year. The children, who were normal at age 2 months (measured by an infant scale), developed intellectually with half the normal rate, as indicated by tests at the end of the first year. Later on, children who were adopted into families showed a remarkable recovery; children adopted before the age of 2 showed normal functioning when tested after 2 or 3 years. Children adopted between the ages of 2 to 6 years of age were only slightly retarded in their intellectual functioning. On the other hand, the girls who were transferred to another similar institution at age 6 were tested at 12 to 16 years of age, and were found to be so retarded intellectually that they would be unable to function in modern societies as measured by daily activities such as counting changes and telling time. The boys, on the other hand, who were transferred at the same age to an institution which provided

far more intellectual stimulation and more varied experiences showed a substantial recovery from their initial intellectual lag when tested at 10 to 14 years of age.

In another study more focused on the intellectual aspect of development, Skeels (1966, cited in Hundeide, 1991), took a group of 25 children evaluated as severely retarded that were raised in institutional homes for two years were grouped into two groups. The experimental group was transferred to another institution for older retarded girls and each retarded girl was given responsibility for “her own child”; while the control group remained in the original institution. A follow-up of the “adopted” children after two and a half years revealed that their functioning has improved significantly, showing an of average of 32 IQ points higher than the control group children; while the control group children who remained in the original institution showed a regression of 21 IQ points, compared to their baseline scores.

Furthermore, a follow up of the children after 20 years from the transfer revealed that the superiority of the children in the experimental group over children in the control group continued into adolescence. These differences were illustrated in completion of 12 years of schooling (and some college education) and independent living among the “adopted” children, compared to an average of 4th grade completion and complete reliance on governmental institutions for living among the children from the control group. These results clearly show ‘*how little it takes to provide the care needed for optimal development: the caregivers were, after all, retarded girls*’ (Hundeide, 1991 p 16).

In yet another study conducted on social deprivation in an orphanage in Iran by Hunt (1983, cited in WHO, 1997), children in the orphanage showed symptoms like gloomy expressions, failure to play with toys, lack of preoccupation either with things or people in their surroundings, lack of initiation for interaction with adults or other children, withdrawal, and lack of proper usage of language (at age 3 or above). The children were found to be retarded in all aspects of development; language, social, emotional as well as intellectual dimensions.

These interaction deprived children were compared to a group of children receiving early stimulation and social enrichment, who showed attributes such as being alert, high level of interaction with toys and other people around them, approach and show interest in adults and showing a normal level of language development. These differences among these two groups of children were striking. For instance the difference in terms of the IQ points between the two groups of children was 47 points or three standard deviations.

This dramatic difference was the result of a simple interactional program where caretakers were instructed to be responsive to the needs of the children as soon as they are expressed, show them love and play with them by adjusting the play according to their initiatives. In addition, caregivers were instructed to imitate the cooing and babbling sounds of the babies. This personal contact was made possible by decreasing the child-caregiver ration from 35:3 to 10:3. The caregivers developed a strong emotional attachment to their children, resulting in increased sensitivity to the children's needs and initiatives (McVicker Hunt 1991 cited in WHO, 1997).

It has been previously stated that the negative consequences of institutional living seems to be more prominent for children placed at birth or before the age of 6, than later placements (Sigal et.al, 2003). On the other hand, the findings of a study by Wolins (1970) suggest that there are no significant differences between early and late admitted children. Wolins conducted his study to see if early or late separation of children from their families and being raised in institutional homes necessarily result in psychological impairment. For this purpose, he selected a group of adolescents who were admitted to an institution below the age of 7, and compared them with adolescents who were admitted to an institution at a later age and adolescents raised in natural families.

These three groups of adolescents, selected from both Austria and the former Yugoslavia, were compared on intellectual performance, personality development, value acquisition, and problem behavior. The results indicated that there are no significant differences between early and later admitted adolescents, as well as

adolescents from natural families. These favorable outcomes for the early admitted adolescents were linked to the availability of affective ties to adults and older children (Wolins, 1970).

The research findings presented in this sub-part exclusively indicate that there is a need for a constant and on-going relationship with sensitive, responsive, and emotionally available adults for normal psych-emotional, social and intellectual development to occur. The evidences also indicates that availability of early affective interactional ties, as compared to the age of placement in institutional homes, dictates the overall development of children raised or being raised in institutional homes.

3. Research Design and Methodology

3.1 Quasi-Experimental Design

The study is set forth to implement the MISC program in institutional homes and see if it has a positive impact on the caregiver-child mediational interaction. Even though causal relationships between variables can be suggested by correlational and causal-comparative designs, experimental design is the most powerful quantitative research method for establishing cause and effect relationships between two or more variables (Gall, Gall & Borg, 2007). True experimental designs involve the random assignment or choosing of subjects to conditions and the study is conducted in such a manner that causal statements can be made about significant differences among the experimental conditions (Schweigert 1994). The random assignment of participants will usually result in the formulation of a control group with which the experimental group will be compared.

On the other hand, quasi-experimental design, a sub-type of experimental design, does not require the randomization of subjects into groups. Shadish, Cook and Campbell (2002, P 104) states that quasi-experiments are experiments that lack random assignment of units to conditions but that otherwise have similar purposes and structural attributes to randomized experiments. In this design, pre-existing groups can be used as participants in the two groups for the experiment (Cozby, 2007). Similarly, in this study, mothers that are currently working in two separate institutional homes for orphaned and vulnerable children are taken as the sites of the study.

Nevertheless, the advantage of using pre-existing groups in quasi experiments is gained at the expense of control; when what is provided from the environment is taken as it is without manipulation, what is given may include several important confounding variables (Kantowitz, Roedinger III & Elmes, 2005). These confounding

variables, and other extraneous variables in general, will influence the outcome of the result. In an experiment, it is essential to keep all of these extraneous variables constant in order to keep the outcomes of the result from being polluted. Through treating participants in the experiment identically, experimental control is achieved, and the only difference between the groups is the manipulated variable (Cozby, 2007).

The most prominent method of controlling extraneous variables is the process of randomization. Randomization ensures that all possible extraneous variables are evenly distributed among the experimental and the control groups, affecting each group equally (Cozby, 2007, Shadish, Cook and Campbell, 2002). On the other hand, it is very difficult to control extraneous variables in general and confounding variables in specific since the participants of the experiment cannot be assigned randomly to the various groups. In fact one of the important features of quasi-experimental designs is lack of direct control for extraneous or confounding variables through the use of randomization (Shadish, Cook and Campbell, 2002).

In line with this argument, Cozby (2007) notes that taking pre-existing groups as participant groups in the study may create a difference between the control and experimental groups since they are non-equivalent. This selection difference may become a confounding variable that provides an alternative explanation for the observed results. In practical terms, there may already be various differences among mothers in the two institutional homes; and these differences may serve as confounding variables, giving additional explanations why the variation is observed, if there is variation in the level of interaction among mothers in the two institutional homes.

One of the mechanisms to improve on the effort of eliminating the effect of the confounding variables in quasi-experimental designs is the involvement of pre and post tests. The pretest scores can be used to compare the two groups and decide if the two groups are relatively similar or have major differences at the baseline of the study. Shadish, Cook and Campbell (2002, p 136) supported the use of pretest in

quasi-experimental designs by stating that it highlights how the two groups initially differ and give an indication on which types of internal validity threats rather than others are operating. They further state that the smaller the initial difference on the pretest, there is less likelihood of strong initial selection biases on the pretest operating.

Going further on the issue of control, Shadish, Cook and Campbell (2002) identify three control principles for controlling confounding variables in quasi-experimental designs, of which one is the use of design elements. They suggested the use of multiple pretest observations or additional control groups to rule out alternative explanations for outcome. Though the use of multiple pretests or additional control groups was not possible for the time available for the study was only four months, design features aimed at attaining more control, namely the use of pretest and a control group, are included in the design.

The control group is used in this study to see if there is any development on the interactional level of mothers that occures naturally without the intervention variable. It is anticipated that no basic development will occure within the two month period between the pre and post-tests, but it is considered important to check if there is any development. On the other hand, the pretest is used to establish the relative equivalency of the two groups of participants on the level of interaction prior to the introduction of the treatment.

Among the various types of quasi-experimental designs, the one that uses a combination of control group and pre-test usage is the Nonequivalent Control Group Pretest-Posttest Design (Schweigert 1994, Cozby, 2007). While Nonequivalent Control Group Design, another variation of quasi-experimental design, involves the comparison of the sample in the experimental group with a sample in a control group drawn from a comparable- but not equivalent- population, the Nonequivalent Control Group Pretest-Posttest Design goes one step further and uses pretest scores to see if the two groups are relatively similar on the trait under consideration before the beginning of the study (ibid). To simplify the whole of the research design, the

following diagram is presented as a summary of the research process (Shadish, Cook and Campbell, 2002)

NR O X O

NR O O

NR indicates that assignment to either the treatment or control group is not randomized or controlled by the researcher (the groups are formed from pre-existing groups). Each O indicates an observation or measure on the participants, the first O indicating the pre-test and the second one the post-test, while the X indicates the implementation of the treatment or the MISC program to the experimental group. Separate lines are used to depict the two groups in the study, and the passage of time is indicated by moving from left to right.

3.2 Sample and Sampling method

The participants of the study are 17 mothers from SOS Children's Villages in Addis Ababa and Awasa, Ethiopia. These mothers are taken from pre-existing groups. As stated in the previous sub-part, when two pre-existing groups are selected to be subjects in the study, there is a risk of creating differences among the experimental and the control groups for which the outcome of the research could be attributed. These pre-existing differences may create a lot of confounding variables for the study (Cozby, 2007, Shadish, Cook and Campbell, 2002).

For the reason of reducing confounding variables, it is important to make the two groups of mothers to be selected for the study as equivalent as possible. In this study, an effort has been made with this regard to make the institutions that represent the pre-existing groups somehow similar in major characteristics that may affect the outcome of the study. For the purpose of making the institutions as similar as possible, homogeneous sampling, a specific sub-type of purposive sampling is used. Homogeneous sampling aims at selecting a sample of similar cases based on certain characteristics (Gall, Gall & Borg, 2007). Three characteristics are taken as criteria to

select the institutions for the study, these are the structure of family units in the institution, location of the institutions and previous trainings that the mothers received.

Since the focus of the study is on interaction among caregivers/mothers and their children, situations in which some level of family-like one-to-one interactions between the mothers and their children already exist were sought. As indicated in the literature review, the level of interaction between caregivers and children in big institutions, where each caregiver is not responsible to a fixed group of children, is very low (Muhamedrahimov & Palmov et al., 2004, Hunt, 1983 cited in WHO, 1997, Hundeide, 1991). For this reason, it is preferred to take participant mothers from institutions where institutional structures resemble a natural family unit in which each mother will be responsible for "her own home and children". Such institutional structure is assumed to provide a relatively better opportunity for mother-child interactions.

In addition to this, it is also considered essential to keep the two groups of mothers from close contact, so that the effects of the training may not be transferred to the mothers in the control group. To achieve this criterion, it is decided that the two groups will be formed in the two separate institutional homes, resulting in all participant mothers in one institution to be in the experimental group and those in the second institution in the control group.

Moreover, it is also considered essential to have institutional homes where there have not been trainings in relation to the MISC or other meditational interaction training programs (like the ICDP) to avoid possible interference of other factors from previous intervention programs. In order to meet the need to have two fairly similar institutional homes with regard to the structure of the family unit, and where the mothers in the experimental and control groups will not be in touch with one another, a decision to select two institutional homes run by the same governmental or non-governmental organization is made. Through the use of homogeneous purposive sampling, two SOS Children's Villages in Addis Ababa and Awasa that are under the

coordination of SOS-National Coordination Office are selected to be the sites for the research. These two villages seem to fulfill the criterions that are set for the selection of institutions to participate in the study.

After the selection of the institutions, the participant mothers are selected in collaboration with the Social Worker and Educational Officer of the two Villages. In this process, purposive sampling technique is used to select the mothers in both the institutions. The participant mothers are selected mainly on the basis of availability throughout the study period; and willingness and motivation to participate in the study were also considered in the selection process. Some of the mothers in both the Villages were on annual leave, so, the availability of the mothers throughout the period of the study is considered as the major selection criteria. On the other hand, since the mothers are very busy with the daily routines of the household management, and managing up to 10 children in the household, some of them were not willing to take on additional roles by participating in the study. Therefore, the willingness and motivation of the mothers are also considered as additional criterion for the selection of the mothers to participate in the study.

The selection of mothers based on their motivation and willingness to participate in the study could bring an influence on the results of the study, since the participant selection could be regarded biased. But on the other hand, if participant mothers selected are less motivated and not willing to participate in the study, the outcomes of the study will also be greatly influenced. In such cases, the drop-out rate of the study could also be high, which jeopardizes the whole research.

Purposive sampling is used as the sampling method, to select mothers to participate in the study. As Cozby (2007) notes, the ’purpose’ in purposive sampling is to obtain a sample of people who meet some pre-determined criterion. The criterion set before hand are used as guidelines to select mothers that suite the purpose of the study.

Through the use of purposive sampling, ten mothers are selected from SOS Addis Ababa Village and nine from Awasa Village, coming up with a total of nineteen

mothers to participate in the study. Two mothers, one from each Village, dropped out of the study for availability reasons (since they were on annual leave either on the baseline observation or the post intervention assessment). Then all selected mothers in Addis Ababa Village are assigned to the control group while mothers in the Awasa Village are assigned to the experimental group.

3.3 The Intervention

Meditational Intervention for Sensitizing Caregivers (MISC) is used as the intervention program for this study. A two-week training on MISC is given to the mothers in the experimental group (mothers in Awasa Village). The focus of the training is on the five criteria of Mediated Learning Experience (MLE), which is the base of MISC. The training is conducted as both group discussions as well as individual tutoring. The group training is conducted for about two to two and a half hours per day for ten days. The individual tutoring for the mothers is conducted after the group training sessions, on one to one basis in the homes of the mothers.

Since the time available for the study is limited to only 4 months, it is difficult to determine the long term effect of the intervention program on the psycho-emotional and intellectual development of the children. The focus in this study, therefore, is limited to whether the MISC program improves the level of meditational interaction that the mothers have with their child.

During the first three days, the training is focused on the overall introduction of the training, introduction of the MISC program, and discussion on the MLE concept. This is followed by a five day discussion of the five principles of MLE, taking one principle per day. Each of these training sessions start with the discussion and feedback of the practice tasks provided in the previous session. Similarly, the sessions end with the provision of another practice task for the principle that is discussed during the training session.

In the following day, the training starts with each of the mothers reporting on how they carried out the practice tasks with their child and the other mothers will discuss and give comments on how the mother used the principle in her daily interaction with her child. The last two days of the training were used for more practices based on the feedback provided in both the group discussions and individual tutoring and overall discussion on the five principles of MLE

3.4 Method of Data Collection

The data collection method used in this study is observation. Mothers in both the experimental and control groups are videotaped while they are interacting with the child in two daily activities. These daily activates are household chores and play. Household chores is selected since much emphasis is given to enable the children manage their daily life and prepare them for an independent life outside of the institution at the age of 16 (they spend 2 more years at adolescent homes outside of the institute and start to live by themselves at the age of 18, which is not the cultural trend in the country).

On the other hand the, activity of play is selected since the children with whom the mothers' interactions are observed are mainly found in the developmental stage of early childhood. The early childhood period, that range between 2 ½ to 6 years of age is what is also called the play years; a period when play is one of the most important activity for the physical, intellectual and psycho-emotional development of the child. These two activities, household chores and play, are selected based on a preliminary observation conducted in the Addis Ababa Village.

Therefore, a video recording of 10 minutes from each of the two activities is conducted for mothers in both the experimental and the control groups, for both the baseline and the post test assessments. The length of the video recording is limited to 10 minutes for the purpose of making the data generated more manageable for the

data analysis (discussed in the following sub-part). The observation through video recording produced a total of approximately 11 and half hours of video recording.

There were signs of subject reactivity on both the child and the mother in the preliminary observation conducted in the Addis Ababa Village. In other words, the existence of the researcher and the knowledge that they are being observed may have influenced the way that the child and the mother interact under normal circumstances. As Cozby (2007) commented on this issue, a potential problem in measuring behavior is reactivity; the awareness of being measured changes the individual's behavior. He also indicated that one of the ways to minimize reactivity is to allow time to individuals to become used to the presence of the observer or the video recording equipment.

Similarly, an effort to reduce subject reactivity, especially reactivity on the side of the children, is made in the observations. Before the beginning of each of the video recordings, the researcher tried to get acquainted with the children so that the children will fell more relaxed in the presence of a stranger (the researcher) and show a more natural behavior. In addition to this, the children were familiarized with the video recording equipment, as a mobile telephone (something that all the children are already familiar with). Even though this effort has been made, it is difficult to assume that what the children as well as the mothers showed is a typical behavior under normal circumstances.

The observation is a non-participant observation, in which the researcher did not directly participate in the interaction of the mothers and their children. There were some instances that the researcher interacted with the children or the mothers during the observation video recording, mostly with the initiation of the child, and sometimes with the mothers' initiation. It was impractical to ignore the interactions initiated from the children, and the researcher believes that the limited number of interactions he had with the children during the observation did not have much effect on the ongoing interaction between the mother and her child.

The data collected through observation underwent a frequency count of meditational interaction through the use of Observation for Meditational Intervention (OMI) (Appendix A). The OMI is an observation method for the assessment of mothers' or caregivers' mediational interaction with their infants and young children. It is used in the MISC intervention program as the basic measures of mediation. It can be applied to videotaped mother/caregiver-child interactions in a variety of settings renging from health/daycare centers to homes. The OMI involves counting the frequency of behaviors defined as factors of mediation in the theory of MLE (Klein, 1996).

In other words, the OMI is used in the MISC intervention program to identify and count the frequency of various parental behaviors which represent the basic mediational behaviors (Fantu, 2001). The OMI enables researchers to rate the frequency of mediational interactions initiated by the child as compared to those initiated by the mother/caregiver (Klein, 1996). Nevertheless, in this study, it is only the mediational interaction behaviors of the mothers that is rated onto the OMI and proceeded to the analysis of the data gathered. This is done since the focus of the study is on improving the interactional behaviors of the mothers in the institutional homes. For this reason, in this study, two columns of the OMI that is concerned with the mediational interactions of the children are left out from the original OMI developed by Klein.

Klein (1996) also identifies two basic methods of coding the OMI. The first is coding the frequency of behaviors in the various categories which results in the sum of mediational behaviors in the different categories. The second method requires coding these behaviors as they occur, in a sequential order, producing a more detailed account of the flow of interaction, as it occurs. A combination of these coding methods is used in this study; the first method of coding the frequency of behaviors in the various categories is used to produce the main data for the statistical analysis. Coding of the behaviors as they occur in a sequence have been used to single out some examples of the mediational interaction between the caregivers and the children. These interactional examples are presented in Appendix C.

3.5 Method of Data Analysis

Once the mediational interactions are counted through the use of the MOI, the scores of the experimental and the control groups are compared. Non-mediational behaviors, which are designated by stars (*) in the OMI (Appendix A), are excluded from the statistical analysis for comparisons of the two groups of mothers, as well as further analysis of findings from the experimental group. As Klein (1996) notes, these non-mediational behaviors (for example acceptance and affect, and undifferentiated encouragement) does not constitute to be mediation since they do not mediate anything specific from the environment or does not indicate any specific learning has occurred. Raw scores on each of the specific behaviors involved in the principles in the pre and post intervention observations, separately for the two activities, are presented in Appendix B.

Since the objective of the study is to show if the MISC program has a positive impact over the interaction of mothers with their children, it is essential to establish the assertion that the two groups of mothers (in the control and the experimental groups) are relatively similar with regard to their level of interaction before the introduction of the treatment (the MISC training). In addition to this, if the program in deed has positive impact, the mothers in the experimental group should have a significantly higher level of interaction than mothers in the control group.

To make the above described statistical comparisons, student t-test is used to see if there is statistically significant difference between the baseline observations and the post intervention assessments of the two groups. Independent samples t-test is used to see if there is difference between the baseline observation and the post intervention assessments of the experimental and the control groups. Paired samples t-test is used to see if there are differences on the scores of the mothers in the experimental group in both the activity, principle and activity and principle combined dimensions between the baseline and the post intervention assessments. Results are considered significant if they have a value of below 0.05.

In the analyses based on the principle dimension (part 4.2.2) and principle-activity combined dimensions (part 4.2.3), the principle of mediation of meaning is excluded from the analysis since there is not sufficient occurrence of the behavior among the mothers in the experimental group, in both the baseline and post intervention assessments. The very limited occurrence of the principle in the behavior of the mothers, especially in the activity of household chores (which actually is 1 for all the eight mothers in both the pre and post assessment observations on the activity of household chores whereas this number for the activity of play is 16) does not give a profound ground for the statistical analysis used in the study. Therefore, the result from this specific principle has been left out in the two above mentioned parts of the analysis of the data. A discussion on the observed low occurrence of the principle of mediation of meaning is presented in the discussion part.

3.6 Reliability and Validity

An effort to determine the interrater reliability on the transcription of the data from the observation (video recording) on to the OMI is made. Since the rating of one observer may have a lower level of reliability, it is advised to use two or more raters to observe the behavior and rate it (Cozby, 2007). For this reason, a 20 minutes observation video containing the activities of household chores and play (10 minutes each) from the post intervention observation of the experimental group is rated by a colleague of the researcher. The selected rater has sufficient knowledge of MLE, and is familiar with the MISC program.

There are efficient methods of calculating interrater reliability, such as Cohen's Kappa (Cozby, 2007). On the other hand there are simpler ways of calculating interrater reliability. Posner, Sampson, Ward, and Cheney (1990 cited in Marques & McCall, 2005) recommend the following procedure to calculate interrater reliability; R = number of agreements / number of agreements + number of disagreements (which is the total number of observations). This simple procedure is used in this study to determine interrater reliability. This analysis produced a concordance of

75% (0.75) for the activity of household chores and 90% (0.90) for play. The overall interrater reliability is 83.33%.

In relation to validity, the main threat to the internal validity of a non-equivalent control group experiment is the possibility that group differences on the posttest are due to pre-existing group differences rather than to a treatment effect (Gall, Gall & Borg, 2007, p417). In order to ensure that the anticipated outcomes in the posttest are the results of the treatment, the MISC in this study, efforts to equalize the two groups of mothers have been done. As Cozby (2007) points out, the two groups in the research may not be equivalent, but the advantage in non-equivalent control group pretest-posttest design is the knowledge of pretest scores. Thus, Cozby argues, a discussion can be made on whether the two groups of participants are equivalent or not by looking at the pretest scores; even if the groups are not equivalent at the beginning of the study, changes in score from the pretest to the post test can be used to know if the treatment had the anticipated effect or not (ibid.).

The joint use of a pretest and a control group for comparison makes the task of examination of certain threats to internal validity simpler. Since the pre-existing groups are non-equivalent in the beginning of the study, selection bias is presumed to be present. The use of the pretest allows the exploration of the possible magnitude and direction of the bias. This is typically done by seeing if the groups involved differ significantly at the pretest, but it might be better done using equivalency testing methods. Nevertheless, failure to find differences does not indicate group equivalency at pretest since groups may still have differences on unobserved variables (Reichardt & Gollob, 1997 & Rogers, Howard & Vessey, 1993 cited in Shadish, Cook and Campbell, 2002, p138).

Similarly, in this study, a statistical analysis for differences among the control and experimental groups in the pretest is conducted. The results showed that the two groups do not have differences in the pretest on their level of interaction with their children. This test is considered sufficient since the main focus of the study is on the level of interaction among the mothers and their children. In addition to this, efforts

to equalize the two groups of mothers in this study have been made in the sampling procedure that is described previously in this part.

With regard to external validity, generalization of findings from this study could be limited since participants in the study are not selected on the basis of random, non-probabilistic sampling method. External validity is concerned with inferences about the extent to which a causal relationship holds over variations in persons, settings, treatments and outcomes (Shadish, Cook and Campbell, 2002). Similarly, Gall, Gall & Borg (2007) define external validity as the extent to which the findings of an experiment can be applied to individuals and settings beyond those that were studied. Mothers selected to participate in this study may not represent every mother in institutional homes.

Therefore, generalization of findings from this study is considered more plausible to institutional homes with similar situations as that of the institution in this study. This is because of the fact that the major sample selecting criterion is focused on institutional characteristics, which is a family structure similar as that of natural family units (the selecting criterions are discussed in the sample and sample selection part). The other sample selecting criterions are not very prominent ones in dictating situations for the generalization of findings in that they are more focused on avoiding contamination of the outcomes of the treatment from previous training programs and contamination (on the side of the control group) from contact of the two groups of participants.

Concept and content validities are considered to be relatively high for there is a well documented theoretical base for the MISC program and the theory of Mediated Learning Experiences in general. On the other hand, the effect or outcome of the MISC program does not seem to be well documented. There are a limited number of researches that are conducted by using the MISC as an intervention program in general, and in institutional homes in specific. This may have a negative impact on internal validity.

3.7 Ethical considerations

Permission from both the institutions, where the participants of the study are selected from, is gained to conduct the study in the institution. In addition to this, permission to work in the two SOS Villages is also granted from the SOS-National Coordination Office, at Addis Ababa. All the participating mothers are selected on the basis of their consent to participate in the study, after they have been briefed about the goals and procedures of the study. Even though the mothers are selected in collaboration with the respective Village social workers (based on criterion discussed in participant selection sub-part), each mother is asked if she is willing to participate in the study or not.

On the other hand, the participant mothers did not sign a contract agreement to participate in the study and withdraw whenever they want to. Since the mothers go through various trainings and other commitments, most of them were reluctant to be signed into any formal experimental procedure that may have taken a portion of their time, which they have to spend on daily household chores. The student researcher is also advised by the Village social workers to just have verbal concession with the mothers on the issue of participating in the study, rather than a signed one. Accordingly, subjects only gave their verbal concession to participate in the study.

The identities of the mothers and the children are not revealed in this research report; rather, codes have been used to identify the mothers. In addition to this, the house numbers of the mothers and the children is also replaced by codes.

4. Findings

In this part, the findings of the study will be presented. First the major findings of the study will be presented by comparing the findings from the experimental and the control groups. Then the emphases will be given to the findings from the experimental group. Following, there will be the presentation of the findings in relation to the five principles of meditational interaction, and the two activities that are observed. Finally, the activities will be combined with the principles and analyzed. Raw scores that are used to make the statistical analysis are presented in Appendix B.

4.1 Major Findings from the Two Groups of Participants

In order to make sure that the experimental and the control groups are comparable in the study, the first step would be to see if there is statistically significant difference between the groups before the introduction of the treatment. For this purpose, it is essential to see if there is a significant difference in the means of the two groups of mothers on their level of mediational interaction at the baseline observations. As indicated in table-1the mean of the control group in the baseline observation is 7.78 whereas the mean of the experimental group is 8.00, with a mean difference of 0.222.

The independent samples t-test of the means of the two groups of mothers from the baseline observations indicates that there is no significant difference on the level of their meditational interaction. The independent sample t-test analysis shows a t-value of 0.230 (p=0.822). This shows that before the MISC intervention program is introduced, there is no significant difference between the levels of meditational interactions among mothers in the experimental and control groups.

Table 1- Pre-Post test comparisons among groups for significant difference

Test	Group	N	Mean	Mean difference	t	p
Pre Observation	experiment	8	8.00	0.222	0.230	0.822
	control	9	7.78			
Post Intervention Observation	experiment	8	14.75	7.083	6.735	<0.000
	control	9	7.67			

The main goal of the study is to see if the MISC intervention program has a positive impact on the mediational interactions of mothers in the experimental group with their children. In order to clearly establish the assertion that the training program has positive impact over mediational interaction, the results need to show that the level of interaction of the two groups of mothers which did not have significant variation in the baseline observation showed a significant difference in the post assessment in favor of mothers in the experimental group.

The means of the two groups of mothers from the post assessment observations indicate that there is difference. As indicated in table-1, the mean for the mothers in the control group is 7.767 while the mean for the experimental group is 14.75. As these figures indicate, there is a big difference on the means of the two groups of mothers in the post intervention observations.

To find out if the difference in the mean is significant, the independent samples t-test is used. The test, this time with the assumption of non-equivalent variances (since difference among the two groups is expected in the post intervention assessment), is applied to the scores of the two groups on their post-test scores and it produced a t-value of 6.735 ($p < .000$). This result clearly suggests that there is a statistically significant difference between the means of the experimental and the control groups on their level of mediational interaction on their post intervention scores.

In the above analyses, the means and the other scores for the mothers are calculated from both the two activities together, household chores and play. The grand totals of the two activities are used to see if there are differences between the two groups in both the above described t-tests.

On the other hand, it is also interesting to see the within group change in relation to the level of mediational interaction in the baseline and the post test assessments. In other words, it is worth noting if both the two groups of mothers have shown a progress, or regression for that matter, on the level of interaction from the baseline observation onto the post assessment. For this purpose, paired sample test, is used.

In the baseline observation, the mean mediational interaction of the mothers in the control group is 7.78 (table 2). On the other hand, the mean for the post assessment for the same group of mothers is 7.67. There seems to be a very slight decrease in the level of mediational interaction from the baseline to the post assessment. But this by itself is not a sufficient evidence for the decrease of interactional level of the control group over the 2 month period between the baseline and the post assessments. Therefore, the paired samples t-test is used to determine whether this observed difference is significant or not.

Table 2- Pre-Post intervention comparisons within groups for significant differences

Group	N	Test	Mean	Mean difference	t	p
Control	9	Pre Obs.	7.78	-0.11	0.175	0.865
		Post Int. Obs.	7.67			
Experiment	8	Pre Obs.	8.00	6.75	-6.441	<0.000
		Post Int. Obs.	14.75			

As indicated in table 2, the t-test, produced a t-value of-0.175 (p=0.865). This result indicates that the decrease in level of interaction shown by the control group in the post assessment is not statistically significant. Therefore, it can be concluded that the control group has not shown any statistically significant change in the level of mediational interaction on the post assessment as compared to the baseline observation.

The same test is applied on the scores for the experimental group which had a mean of 8.00 in the baseline observation while that of the post intervention assessment is 14.75. The t-test produced a t-value of -6.441 ($p < 0.000$). Therefore, as this result indicates, there is a statistically significant improvement on the level of mediational interaction of mothers in the experimental group from the time of the baseline observation to the post intervention assessment.

The fact that the two groups has relatively similar level of mediational interaction before the introduction of the treatment; and that the experimental group has significantly higher level of interaction than that of the control group in the post assessments has been firmly established in the t-test analyses of the means of the two groups. In addition to this, it is also indicated that the control group had no statistically significant change on the level of interaction from the baseline observation to the post assessment, whereas the progress in the experimental group is statistically significant.

It has been conveyed in the discussion on the research design of the research that the control group is used to see if there are naturally occurring developments that are outside of the outcomes of the intervention. The result shows that there are no significant developments that occurred among mothers in the control group in the two months between the pre and posttests. As a result, much attention will now be focused on the data from the experimental group, and the findings from the control group will be left out of further analysis. Findings from the control group will only be used as a comparison in the discussion part of the results, whenever necessary.

4.2 Further Findings from the Experimental Group

In this part the results from the experimental group will be further analyzed, and findings will be presented in three main sub-parts. In the first sub-part, the analysis will be focused on the individual activity in the baseline and post assessment observations and see if there is any difference in the patterns of the progress that may be observed in household chores and play activities. In the second sub-part, the data will be presented in relation to each of the four principles covered in the MISC program (with the exception of the principle of mediation of meaning for the reason discussed in the methodological part) and the baseline and post assessment scores of the mothers in both the two activities, household chores and play, will be compared to see if there is a progress that is statistically significant. In the third sub-part, each of the scores of the mothers on both the specific activity and the principle will be analyzed (the principle of mediation of meaning will also be left out in this analysis).

In other words, in the first sub-part, the analysis will depend on the two activities, all the five principles put together under these activities. On the other hand, in the second sub-part the two activities will be combined together and the analysis will depend on the five principles In the third sub-part, the analysis will depend on both the activities and the principles, each considered separately. And as it has been stated in the method of data analysis part, the results from the principle of mediation of meaning has been left out in the analysis of the results in the principle dimension (part 4.2.2) and principle and activity combined dimensions (part 4.2.3) because of lack of sufficient occurrence of the behavior for the statistical analysis.

4.2.1 Analysis on the Activity Dimension

In this sub-part, the analysis will be focused on the specific activities that the observations are made on, which are household chores and play. The mothers' level of interaction in the baseline observation and post intervention assessment will be compared independently for the two specific activities. In each of these cases, the

paired sample t-test is used at a significance level of 0.05. The statistics from this analysis is presented in table 4.

Table 4- Pre-Post intervention results on the activity dimension

Activity	Test	Mean	Mean Difference	T-Value	p
Household Chores	Baseline	4.00	2.375	3.252	0.014
	Post	6.38			
Play	Baseline	4.00	5.375	5.799	0.001
	Post	8.38			

N=8

When the activity of household chores is considered, the mean interaction of the mothers with their children grew to a mean of 6.38 in the post intervention assessment from a mean of 4.00 in the baseline, showing an increase of 2.375. And the t-value from the t-test is 3.252 (p=0.014), which indicates that the progress that the mothers showed in the post assessment, as compared with the baseline scores, is statistically significant.

The activity of play also showed a similar trend of progress. The mean score of the mothers' interaction in the baseline is 4.00; whereas this figure increased to 8.38 in the post intervention assessment, showing an average increase of 5.375. The t-value from the t-test is 5.799 (p=0.001), which also indicates that the mothers' progress in their level of mediational interaction in the post intervention assessment is statistically significant when compared with their level of interaction in the baseline observation.

4.2.2 Analysis on the Principle Dimension

The overall findings from the experimental group with regard to the each of the principles in the baseline and post intervention assessments are presented in table 3.

Table 3- Pre-Post intervention results on the principle dimension

Principle	Test	Mean	Mean Difference	T-value	p
Focusing	Baseline	2.12	2.125	5.338	0.001
	Post	4.25			
Transcendence	Baseline	2.25	2.750	3.924	0.006
	Post	5.00			
Mediation of Feelings of Competence	Baseline	0.88	0.625	2.376	0.049
	Post	1.50			
Mediation of Regulation of Behavior	Baseline	1.88	0.750	2.393	0.048
	Post	2.62			

N=8

The data presented in table 3 indicates that there are statistically significant progresses for each of the four principles considered for the analysis. For the principle of focusing, the mean of the experimental group on the baseline observation, as indicated in table 3, is 2.12 while this number increased to 4.25 in the post intervention assessment. There is a mean difference of 2.125 between these two time periods. The t-value from the t-test for these means is 5.338 (p=0.001); which indicates that there is a statistically significant difference between the baseline and the post intervention assessment scores of the mothers with regard to the principle of focusing.

A similar trend of statistically significant progress in interactional level of the mothers is observed for the principle of transcendence(table 3). At the baseline, the mothers had a mean of 2.25 interactions with their children while this number increased to 5.00, showing an increase of 2.75 interactions, at the post intervention assessment. The t-test produced a t-value of3.924 (p=0.006), indicating that the progress from the baseline to the post intervention assessment is a statistically significant one.

The principle of feelings of competence also showed a similar trend as the previous two principles, but the results show that the magnitude of the progress is not be as strong as in the previous two cases. The mothers had a mean interaction of 0.88 in the baseline observation which grew to of 1.50 in the post intervention assessment, showing an average progress of 0.625. The result from the t-test produced a t-value of 2.376 (p=0.049), which is right at the border of the degree of the 5% level of significance. Still, the result shows that the progress that the mothers showed in their level of mediational interaction is statistically significant.

A similar trend as that of the principle of feelings of competence is observed for the principle of regulation of behavior. The mothers had a mean of 1.88 interactions that showed a slight growth of 0.750 and came to be 2.62 in the post intervention assessment. The t-test analysis produced a t-value of 2.393 with p 0.48, which is again on the edge of the level of acceptance, but still there is a statistically significant progress in the level of interaction in the post assessment as compared to the baseline observation.

The above data presentations clearly indicate that there is a statistically significant progress in the level of the mother’s interaction level in the post intervention assessment as compared with the baseline observation. This holds true for all four of the five principles of the MISC program that are considered in this analysis.

4.2.3 Analysis on Activity-Principle Combined Dimension

In this part, there will be a presentation of the analysis of the results from the experimental group in the dimensions of the two activities as well as the four principles combined. Basically, what is done in this part is first the results for the mothers in the two activities will be considered separately. Then, each activity is further divided into the four principles and an effort will be made to see if there is any significant progress in the post intervention assessment as compared with the results from the baseline observation. Tables (5 and 6) containing the relevant statistics are presented at the end of each sub-part. First the four principles will be analyzed with respect to the activity of household chores.

In the activity of household chores, the only statistically significant progress in the mothers' level of interaction is observed in the principle of transcendence. During the baseline observations, the mothers had a mean of 0.88 interactions with their children while this figure increased to a mean of 2.62 during the post intervention assessment, showing an increment of an average of 1.750 interactions. The t-value, which is 4.249 ($p=0.004$), also indicate that the progress the mothers showed is a significant one.

The other three principles showed certain levels of progress in the level of interaction but these progresses are not statistically significant. There were an increase of 0.375, 0.125 and 0.125 for the principles of focusing, mediation of feelings of competence and mediation of regulation of behaviour respectively. Regardless of these increases in the level of the mothers' interaction, the t-tests for these principles indicated that the progresses made are not statistically significant (table 5).

Table 5- Pre-Post intervention results on the principle-activity combined dimension on household chores

Principle	Test	Mean	Mean Difference	T-value	p
Focusing	Baseline	1.38	0.375	1.426	0.197
	Post	1.75			
Transcendence	Baseline	0.88	1.750	4.249	0.004
	Post	2.62			
Mediation of Feelings of Competence	Baseline	0.50	0.125	0.357	0.732
	Post	0.62			
Mediation of Regulation of Behavior	Baseline	1.25	0.125	0.424	0.685
	Post	1.38			

N=8

In the activity of play, the mothers showed a progress that is statistically significant in two of the four principles. The principle of focusing showed an increase of 1.625 interactions, from an average of 0.75 interactions in the baseline to an average of 2.38 in the post intervention assessment. The t-value for this principle is 4.333 (p=0.003).

With regard to the principle of mediation of regulation of behavior, the mothers showed a staggering 0.62 interactions in the baseline assessment, which increased to 1.25 interactions in the post intervention assessment, showing an increase of an average of 0.625 interactions. The t-value for this principle is 2.376 (p=0.049) that is right on the edge of the level of significance, but the mothers' progress is statistically significant.

The other two principles, namely transcendence and mediation of feelings of competence did not notice a statistically significant progress in the mothers' level of interaction with their child.

Table 6- Pre-Post intervention results on the principle-activity combined dimension on play

Principle	Test	Mean	Mean Difference	T-value	p
Focusing	Baseline	0.75	1.625	4.333	0.003
	Post	2.38			
Transcendence	Baseline	1.38	1.000	1.871	0.104
	Post	2.38			
Mediation of Feelings of Competence	Baseline	0.38	0.500	1.528	0.170
	Post	0.88			
Mediation of Regulation of Behavior	Baseline	.62	0.625	2.376	0.049
	Post	1.25			

N=8

5. Discussion and Conclusion

5.1 Discussion

In this part, a discussion on the findings of the study will be presented. Since a discussion on the theoretical framework of MLE has been presented in the theoretical framework section, the discussion in this part will be focused only on the result of the study, in relation with other related studies. The discussion will follow the same approach as the analysis, going from the more general and prominent findings to the more specific principles and activities.

To create a base to compare the two groups of mothers to enable to satisfactorily answer the research question, the equivalence of the groups prior to the study is determined. As the result from the independent sample t-test indicate, the two groups of mothers were relatively equivalent in their level of interaction with their children on the baseline observation (table 1). On the other hand, mothers in the experimental group showed a remarkable improvement in their level of interaction with their children, whereas mothers in the control group showed no significant improvement or regression in the post assessment, as compared to the baseline observations (table 2).

The result which indicates that mothers in the experimental group have shown significant increase in their level of interaction with their children agrees with many of the previous researches that were conducted using MISC as an intervention program. For instance, Tirussew, Lakew and their co-researchers (Tirussew, Lakew & et al., 1996) indicated that mothers who participated in the MISC intervention program showed clear improvements in their quality of interaction with their children. Even though detailed results are not indicated, the results from the pilot study for the above mentioned study (Tirussew, Lakew & et al., 1996) indicated that children became more socially active and emotionally developed.

Similar improvements in social relations have also been reported among children in institutional homes in The Russian Federation, following the implementation of an institution-wide early intervention program partly aimed at improving the children's interaction with emotionally available caregivers (Muhamedrahimov & Palmov et al., 2004). Though the intervention program used in the research by Muhamedrahimov Palmov & their associates is not the MISC, the result shows the potential of early intervention programs in improving the mother-child interactions in institutional homes.

In this study, an effort has been made to see if there are significant variations among the pre and post intervention levels of the mothers in each of the two groups. The results from the statistical analysis indicate that the control group showed a regression in their level of interaction in the post intervention test, but this regression is found to be statistically insignificant. Such slight variations, either in the form of an improvement or regression in the level of the mothers' interaction are only expected under normal circumstances. There were two months between the pre and post intervention observations, and during these two months, occurrences of events, or influence of maturity, that may significantly affect the mothers' level of interaction with their children are not expected to happen. In fact, it is for this reason of gaining insight into any naturally occurring developments (that occur outside of the intervention) that the control group is involved in the study. As there were no such naturally occurring developments that are significant, the control group has been left out of much of the analysis part.

On the other hand the improvement in the level of mediational interaction among mothers in the experimental group in the post intervention observations is found to be statistically significant when compared to the pre intervention level. Similar assumptions as those made for the control group about the very little chance of the occurrence of events or maturity that may influence the mothers' level of interaction with their children between the pre and post intervention observations, are made for mothers in the experimental group as well.

Given the relatively equivalent level of interaction among the two groups of mothers in the pre intervention observation, and the fact that the MISC training is the main variation among the two groups of mothers in between the pre and post intervention observations as of the assumptions made above, it is logical to conclude that the observed variation in the level of interaction in the post intervention observations in favor of mothers in the experimental group is the result of the MISC training program. In other words, the finding from the analysis of the data strongly suggests that the MISC training program has contributed to the higher level of interaction among mothers and their children in the experimental group, as compared with their level of interaction in the pre intervention observations as well as to the post-test interactional levels of mothers in the control group.

On the other hand, the result cannot be said to exclusively indicate that the increased level of interaction among mothers in the experimental group is solely the result of the MISC training program. This is not actually the failure of the result itself; rather, it is embedded in the basic nature of the research design used in the study. As discussed in the methodology part, quasi-experimental design does not involve a direct control over extraneous variables through the use of randomization (Gall, Gall and Borg, 2007, Shadish, Cook and Campbell, 2002). Even though design elements that increase control over confounding variables (pre-test and control group) are used in the study, the exclusive control of extraneous variables cannot be guaranteed.

In more practical terms, there could be a possibility that the variation among mothers in the control and experimental groups on the post intervention observation, or the higher level of interaction of mothers in the experimental group as compared to their level of interaction in the pre intervention observations could have been the result of a confounding factor other than the MISC training program. But this slim possibility by itself cannot rule out the finding which shows that mothers who had a relatively similar level of interaction showed a significant variation in their level of interaction in the post intervention observations. The most apparent difference among the two

groups in between the two measurements is the MISC training provided for mothers in the experimental group.

Efforts have been made to make the two groups of mothers as similar as possible when they are sampled to participate in the study by making the institutions they work in as similar as possible. (A discussion concerning this issue has been presented in the sample and sampling method sub-part of the research design and methodology part). This procedure may not properly fit the concept of matching. Cozby (2007, p 118) describes matching as a "*procedure to group units with similar scores on a matching variable, so that treatment and control groups each contain units with the same characteristics on the matching variable*". Even though the procedure used in this study is not as systematic as the procedure of matching, the researcher believes that the use of the described sampling procedure has provided a base to make the two groups of mothers as equivalent as possible.

The assertion that thetwo groups of mothers are relatively equivalent prior to the intervention is actually supported by the outcomes of the pre intervention observations, which indicated that the level of interaction among the two groups of mothers was relatively equivalent (table 2). Had there been significant variations in the mothers' level of interaction with their children prior to the intervention, the use of additional statistical procedures to eliminate the effect of this pre-existing differences on the outcomes of the research would have been necessary. For instance, Hundeide (1996) reported that the two groups of mothers in his research showed some variations on certain demographic variables. For this reason, Hundeide (ibid) reported that the effects of the intervention are estimated based on the change the mothers showed between the pre and post intervention assessments, not on the basis of direct comparison of the two groups of mothers in the post-test.

Once the contribution of the MISC training for the higher level of interaction among mothers in the experimental group, as compared with the level of interaction for mothers in the control group, has been established, the focus of the analysis is turned onto the specific principles involved in the theory of MLE. For the further analysis of

findings from the study, only the data from the experimental group is paid attention to, while the data from the control group is only used whenever it is necessary to make comparisons. The analysis of each of the principles (except the principle of mediation of meaning) indicate that all of the principles witnessed a significant increase in the post intervention observations of mothers in the experimental group, compared to their level of interaction in the pre intervention observations.

Mothers in the experimental group showed the most significant gains in the principles of focusing and transcendence/expansion in the post intervention observations. These two principles are also the ones that are most frequently observed in the mothers' behavior than the other two principles in both the pre and post intervention observations. The average occurrences of these principles in the mothers' behavior are 2.12 and 2.25 in the pre intervention observations and 4.25 and 5.00 for post intervention observations for the principles of focusing and transcendence respectively (table 3).

This finding seems to concur with the findings of Chiswanda (1997), who reported that the only statistically significant increase among the five principles in the post intervention observations in her study was the principle of transcendence or expansion. In this study too, the principle with the most frequent occurrence as well as the highest increase from the pre to post intervention observations is the principle of transcendence.

The principle of transcendence involves activities that go beyond the immediate experience and enrich the child's experiences by explaining, comparing, clarifying, and storytelling (Klein, 1996 & 2001). The principle of transcendence is central in Vygotsky's concept of internalization, since it is through the activities involved in the principle that caregivers provide the child with experiences and cultural concepts, which occur at the interpersonal level and latter transformed into intrapersonal ones (John-Steiner & Mahn, 2006, Vygotsky, 1978). Once internalized, the outcomes of the mediational process are latter applied in the direct interaction of the child with the environement (Feuerstein et.al, 1980 cited in Edna, 2003). Therefore, the results

observed in the principle of transcendence are considered an important finding in this study. In addition to the principle of transcendence, the other three principles also witnessed a significant increase in the post intervention compared to the pre intervention observations.

On the other hand, results from Hundeide's (1996) research in implementing the MISC in Indonesian families indicate that the most significant improvement in the mothers' level of interaction was observed on the principle of mediation of meaning. In addition to this, Hundeide also reported that mothers in the experimental group showed no significant difference on the principle of transcendence when compared with mothers in the control group.

In addition to being the principle which noticed the highest increase in the post intervention observations, and with the highest frequency of occurrence among mothers in the experimental group, the principle of transcendence also noticed the second highest occurrence among mothers in the control group, with an average of 2.33 mediational interactions during the post intervention observations. As indicated in table 3, the average mediational interaction of mothers in the experimental group for the principle of transcendence in the post intervention observations is 5.00. This also makes transcendence the principle that noticed the biggest pre-post intervention difference among mothers in both the experimental and control groups.

In the current study, the principle of mediation of meaning is noted to be the one with the lowest occurrence in the mothers' behavior. In fact the very low occurrence of the principle made it impossible to include the principle in the analysis of results in the activities and principle analysis dimensions. As described in the method of data analysis sub-part, the occurrence of the principle of mediation of meaning among mothers in the experimental groups is only 1 for both the pre and post intervention observations on the activity of household chores, whereas it occurred 16 times in the activity of play. Among mothers in the control group, a similar trend is observed; 4 scores for mediation of meaning in both the pre and post intervention observations for household activities and 9 scores for the activity of play (Appendix B).

Though not included in the main analysis of the data gathered for the study, this result seems to indicate that mediation of meaning is much more common in the activity of play than household chores among mothers in both the experimental and control groups. But this by itself does not constitute a concrete base for the conclusion that mediation of meaning is more prevalent in the activity of play than household chores. The observed low occurance of the principle of mediation of meaning among mothers in the experimental group could be partly atributed to the hypothetical nature of the principle, compared to most of the other principles which seem to be more concrite.

On the other hand, this low occurrence of the principle can also be attributed to the way the principle has been presented to the mothers in the MISC training. As Hundeide (1996 p123) states, ”*the outcomes of the MISC intervention is to a large extent dependent upon how the principles ... of mediation are communicated to the mothers*”. Nevertheless, the similar lower occurrence of the principle of mediation of meaning in the pretest as well as among mothers in the control group seems to indicate that the principle may naturally have a lower rate of occurrence among the mothers.

Even though the principles of mediation of feelings of competence and regulation of behavior produced a p-value very close to the 5% point of rejection (0.049 and 0.048 respectively), the mothers’ gains in these principles from the pre to the post intervention observation is still regarded to be statistically significant (table 3). In the case of mediation of feelings of competence, it is noted that the most frequent behavior that is manifested by the mothers, as indicated by the OMI, is the non-mediational behavior of undifferentiated encouragement. Mothers in the experimental group had an average of 1.50 interactions in the post intervention observations on mediation of feelings of competence (table 3), which includes three specific mediational behaviors on the OMI (appendix A).

On the other hand, the specific non-mediational behavior of undifferentiated encouragement occurred for an average of 4.75 in the mothers’ interaction with their

children in the post intervention observations. This finding indicates that the natural and non-mediational behavior of undifferentiated encouragement that already exists in the socio-cultural context can be used as a well established foundation to build on by introducing more mediational forms of interactions that promote feelings of competence through interaction of the mothers with their children.

With an objective of investigating whether the general trend of developments in the four principles in the pre and post intervention observations is also observed in the two activities, the analysis of the data is further driven to compare the two activities, household chores and play. This further analysis indicated that more significant gains in the level of mediational interaction among mothers in the experimental group are noticed in the activity of play. The activity of play noticed a significant increase in the principles of focusing and mediation of regulation of behavior, while household chores noticed an increase only in the principle of transcendence (tables 5 and 6).

The activity of household chores seems to reflect the general trend observed in the two activities combined together in that it noticed a significant increase in level of interaction for the principle of transcendence. But the other principles in household chores activity, in spite of the slight increase they witnessed in the post intervention observation, showed no statistically significant increase. Similarly, the activity of play noticed a significant increase in the level of interaction on the principles of focusing and mediation of regulation of behavior, which also reflects the general trend. In general, it can be concluded that the activity of play witnessed more significant gains by mothers in the post intervention observation compared to the pre intervention observations. This could be because of the more directive and instructional/teaching role that the mothers have in the activity of household chores, compared to the more interative role they have in the activity of play.

5.2 Results Viewed in Context of Child Rearing Practices and Parental Expectations for the Child

In this part, the results of this study are viewed in the context of the child rearing and maternal expectations that prevail in the country, as depicted by the studies presented in the review of literature. In the Ethiopian cultural context, children are viewed as passive recipients of interaction with adults, without much possibility to influence the interaction (Klein, 1996). Furthermore, children are expected to be obedient, respectful and polite (Fantu, 2001).

Similar patterns of mother-child interactions where children are passive recipients of interaction were observed in both the pre and post intervention observations in this study. Even though the focus of this study is on interactions from the side of the mothers, and that the interactions from the children are not tallied on the OMI, the overall interaction is greatly dominated by the mothers. There were only a handful of situations in which interactions were initiated or dominated by the child in all of the dyads observed in this study.

The uni-directional nature of the interaction in this study is further evidenced by the very low occurrence of the principle of mediation of meaning. The very low occurrence of mediation of meaning in the mothers' behavior in the post intervention observation could be attributed to the complex and hypothetical nature of the principle. But on the other hand, the very low occurrence of the behavior, especially in house hold chores activity, in the pre intervention observations indicates that mediation of meaning is very limited in the mothers' interaction with their children. In both cases, the very low level mediation of meaning in the mothers' behavior is an indication that the mothers are not paying much attention on making the interaction more meaningful for the child; establish energetic, affective, emotional power that ensure that the stimuli mediated will indeed be experienced by the child (Feuerstein, 1988, cited in Collins, 2001).

On the other hand, regulation of behavior does not seem to dominate the interaction of the dyads in this study, as has been noted in the overall cultural context of the country. Among mothers in the experimental group, the frequency of regulation of behavior does not seem to indicate that regulation of the child's behavior is on top of the mothers' agenda for child rearing (table 3). But further conclusions on the issue cannot be made since the data generated lacks clarity on this specific issue. Since the non mediational behavior of commands was mistakenly left out from the OMI used with the videotaped observations (Appendix A), data that may have helped for further conclusions on the prevalence of non-mediational regulation of behavior among mothers in the two institutions is not generated from the observations.

5.3 Conclusion

The contributions of mediated learning for the intellectual as well as psycho-emotional development of the child have been illustrated by various writers and researchers (Vygotsky, 1978, Feuerstein & Feuerstein 1991, Hundeide, 1991, Klein,1996 & 2001). Feuerstein developed the theory of Mediated Learning Experiences and prescribed a number of criteria that need to be met for successful mediation between children and adult caregivers (Klein & Rye, 2004, Feuerstein et al. 1995 cited in Tzuriel, 1999). Some of these principles identified by Feuerstein were empirically defined and studied in the form of an early intervention program MISC by Professor Pnina Klein (Klein, 1996).

MISC have been implemented in a number of countries, including Ethiopia, producing satisfactory results in improving child-caregiver interactions, and consequently improving the intellectual and emotional development of children, as well as the human care children receive from parents and other adults who care for them (Tirussew & Lakew et al. 1996, Hundeide, 1996, Klein 1996, Chiswanda, 1997, Fantu,2001, Klein & Rye, 2004). Almost all of these researches that used MISC as an intervention program were conducted in natural home settings, with some on schools and daycare centers. On the other hand, there appeared to be a gap in the body of

knowledge on the impact of MISC for the intellectual and psycho-emotional development of children in institutional homes. The writer of this research, in his search for literature, found no researches that were conducted in institutional homes that utilized MISC as an early intervention program. For this reason, the researcher believes that the findings of this research have a modest contribution for further investigations into the issue of improving the interaction deprived conditions of many children in institutional homes in some parts of the world.

The results from this study indicated that interaction levels between children and mothers significantly increased after mothers participated in the MISC training. The result also indicated that the most significant gain is noticed in the principles of focusing and transcendence. On the other hand the principle of mediation of meaning had the least occurrence in both the pre and post intervention observations. The activity of play, compared to household chores, witnessed higher levels of interaction in both the pre and post intervention observations. Overall, the MISC early intervention program produced a significant increase in the mothers' level of interaction with their children.

References

Ainsworth, MDS, Blehar, MC, Waters, E & Wall, S 1978, *Patterns of Attachment: A Psychological Study of the Strange Situation*, Lawrence Erlbaum Associates, Publishers, New Jersy.

Chiswanda, MV 1997, 'Hearing Mothers and Their Deaf Children in Zimbabwe: Mediated Learning Experiences', PhD Dissertation, University of Oslo.

Cole, M, Cole, SR & Lightfoot, C 2005, *The Development of Children*, 5th edn, Worth Publishers, New York.

Collins, G 2001, 'Mediated and Collaborative Learning for Students with Learning Disabilities, "This is about life, it's about the rules of life."', PhD Dissertation, The University of Tennessee. Accessed on 14 November, 2006, http://www.icelp.org/files/research/GailCollinsDiss.pdf

Cozby, PC 2007, *Methods in Behavioral Research* 9th edn, McGraw Hill Companies, Inc, New York.

Edna Legesse 2003, 'Mediation in Caregiver-Child Relationship: The case of Three Families Living in Low Socio-Economic Conditions in Addis Ababa, Ethiopia', Master Thesis, University of Oslo.

'*Ethiopia-Overview, SOS Children's Villages' Activities in the Country'*, 2008, viewed on February 2, 2008, http://www.sos-childrensvillages.org/Where-we-help/Africa/Ethiopia/Pages/default.aspx

Falik L.H, 'Using Mediated Learning Experience Parameters to Change Children's Behavior: Techniques for Parents and Childcare Providers', viewed on 12 November, 2006, http://www.icelp.org/files/research/ParentMednPprFalik.pdf

Fantu Melesse 2001, 'The More Intelligent and Sensitive Child (MISC): Mediational Intervention in an Ethiopian Context: Evaluation Study', in Klein, P 2001 (Ed) *Seeds of Hope: Twelve Years of Early Intervention in Africa*, Unipub forlag, Norway pp131-158.

Federal Ministry of Health/National HIV/AIDS Prevention and Control Office 2005, '*AIDS in Ethiopia-Main Indicators 6th Report*', viewed on February 2, 2008, http://www.etharc.org/aidsineth/publications/6thReportposter.pdf

Feuerstein, R & Feuerstein, S 1991, 'Mediated Learning Experiences: A Theoretical Review', in Feuerstein, R, Klein, P, & Tannenbaum, A 1991 (Ed), *Mediated Learning Experiences (MLE): Theoretical, Psychological and Learning Implications*, Freund Publishing House Ltd, London.

Feuerstein, R, '*The International Center for the Enhancement of Learning Potential, Mediated Learning Experience leading to Structural Cognitive Modifiability'*, viewed 10 November 2006, http://www.flem.org.br/pei/5.pdf

Gall, MD, Gall, JP & Borg, WR 2007, *Educational Research: An Introduction* (8th Ed.) Pearson Education Inc., Boston.

Hundeide, K 1991, *Helping Disadvantaged Children: Psycho-Social Intervention and Aid to Disadvantaged Children in Third World Countries*, Jessica Kingsley Publishers, London.

Hundeide, K 1996, 'Facilitating Cultural Mediation: Indonesia' in Klein, P 1996 (Ed), *Early Intervention: Cross-Cultural Experiences with a Mediational Approach*, Garland Publishing Inc. New York, pp113-133.

John-Steiner, V & Mahn, H 2006 '*Sociocultural Approaches to Learning and Development: A Vygotskian Framework'*, A paper submitted to a special issue of Educational Psychologist on theoretical approaches to learning and their implications for the classroom, viewed on 18 November, http://webpages.charter.net/schmolze1/vygotsky/johnsteiner.html

Kantowitz, BH, Roedinger III, Henry, L & Elmes, DG 2005, *Experimental Psychology* (8th edn.), Thomson/Wadsworth, Belmont, USA.

Klein, PS 1996, *Early Intervention: Cross-Cultural Experiences with a Mediational Approach*, Garland Publishing Inc. New York.

Klein, PS & Rye, H 2004, 'Interaction-Oriented Early Intervention in Ethiopia: The MISC Approach', *Infants and Young Children*, Vol. 17, No. 4, pp 340-354, Lippincott Williams & Wilkins, Inc, USA.

Klein, PS 2001, 'A Mediational Intervention for Sensitizing Caregivers (MISC)', in Klein, P 2001 (Ed) *Seeds of Hope: Twelve Years of Early Intervention in Africa*, Unipub forlag, Norway, pp29-93.

Lidz, CS 1991, 'MLE Components and their Roots in Theory and Practice', in Feuerstein, R Klein, P, & Tannenbaum, A 1991 (Ed), *Mediated Learning Experiences (MLE): Theoretical, Psychological and Learning Implications*, Freund Publishing House Ltd, London.

Marques, JF & McCall C 2005, 'The Application of Interrater Reliability as a Solidification Instrument in a Phenomenological Study' in *The Qualitative Report*, Volume 10 Number 3 September 2005, pp439-462, viewed on April, 17, 2008, http://www.nova.edu/ssss/QR/QR10-3/marques.pdf

Muhamedrahimov, RJ, Palmov, OI, Nikiforova, NV, Groark, CJ & McCall, RB 2004, 'Institution-Based Early Intervention Program', in *Infant Mental Health Journal*, Vol. 25(5), 488–501 (2004), Michigan Association for Infant Mental Health, Published online in Wiley InterScience, http://www3.interscience.wiley.com/cgi-bin/fulltext/109609929/PDFSTART

Noguez, S. 2002. The development of the potential of learning. An interview with Reuven Feuerstein. Revista Electrónica de Investigación Educativa, 4 (2). Retrieved 14 November, 2006, http://redie.uabc.mx/vol4no2/contents-noguez.html

Rye, H 2001, 'Twelve Years of Early Intervention Studies in Ethiopia', in Klein, P 2001 (Ed) *Seeds of Hope: Twelve Years of Early Intervention in Africa*, Unipub forlag, Norway.

Schaffer, HR 2006, *Key Concepts in Developmental Psychology*, Sage Publications, London

Schweigert, WA1994, *Research Methods & Statistics for Psychology*, Brooks/Cole Publishing Company, California

Shadish, WR, Cook, TD & Campbell, DT 2002, *Experimental and Quasi-Experimental Designs for Generalised Causal Inference*, Houghton Mifflin Company, Boston.

Sigal, JJ, Perry, JC, Rossignol, M & Ouimet, MC 2003, 'Unwanted Infants: Psychological and Physical Consequences of Inadequate Orphanage Care 50 Years Later', in *American Journal of Orthopsychiatry*, Vol. 73, No. 1, 3–12

Tirussew Tefera 2001, 'Mediational Intervention for Sensitizing Caregivers (MISC) in Ethiopia', in Klein, P 2001 (Ed) *Seeds of Hope: Twelve Years of Early Intervention in Africa*, Unipub forlag, Norway, pp95-113

Tirussew Tefera, Lakew Wolde Takele, Teka Zewde, Fantu Melese, Zelalem Fekadu, Rye H, & Hundeide K 1996, 'Mediational Intervention for Sensitizing Caregivers: Ethiopia', in Klein, P 1996, *Early Intervention: Cross-Cultural Experiences with a Mediational Approach*, Garland Publishing Inc. New York, pp95-112.

Tzuriel, D 1991, 'Cognitive Modifiability, Mediated Learning Experience and Affective-Motivational Pocess: A Transactional Approach', in Feuerstein, R, Klein, P, & Tannenbaum, A 1991 (Ed), *Mediated Learning Experiences (MLE): Theoretical, Psychological and Learning Implications*, Freund Publishing House Ltd, London.

Tzuriel, D 1999, 'Parent-child mediated learning interactions as determinants of cognitive Modifiability: Recent Research and Further Directions', In Genetic, Social, and General Psychology Monographs; May 1999; 125, 109-156, ProQuest Medical Library.

UNAIDS, UNICEF, & USAID, 2004, *Children on The Brink 2004, A Joint Report of New Orphan Estimates and A Framework for Action*, viewed on February 17, 2008, http://www.unicef.org/publications/files/cob_layout6-013.pdf

UNICEF, 2005, *Excluded and Invisible: The State of The World's Children 2006*, viewed on February 16, 2008, http://www.unicef.org/infobycountry/ethiopia_30783.html

UNICEF, 2007, *Media Release, Millennium Dream Campaign Launched to Raise Funds for Ethiopian Orphans and Vulnerable Children*, viewed on May 7, 2007, http://www.unicef.org/ethiopia/ET_PR_07_Dream_Team.pdf

UNICEF, *Media Release, Dream Teams Race to Raise Funds for Ethiopian Orphans and Vulnerable Children*, viewed on February 17, 2008, www.**unicef.org**/ethiopia/ET_media_PR_DT_05.pdf

Vygotsky, LS 1978, *Mind in Society: The Development of Higher Psychological Processes*, Harvard University Press, Cambridge, London

Wertsch, JV 1998, *Mind as Action*, Oxford University Press, New York

WHO, 1997, *Improving Mother/child Interaction to Promote Better Psychosocial Development in Children, Program on Mental Health*, viewed on March 21, 2007, www.who.int/mental_health/media/en/29.pdf

Wolins, M 1970, 'Young Children in Institutions: Some Additional Evidence', In *Developmental Psychology* 1970, Vol. 2, No. 1, 99-109, ISI Web of Knowledge.

Appendices

Appendix A

Observation for Meditational Intervention (OMI)

House Number (code) _____
Activity _____
Observation _____
Mother Number (code) _____

MLE Criteria	Observed Values	Total
Focusing		
Verbal		
Non-verbal		
Combined (verbal and non-verbal)		
Intentionality without reciprocity*		
Sub total		
Mediation of Meaning		
Expression of affect (non verbal)		
Naming		
Naming and affect		
Relating to past or future		
Acceptance and affect*		
Sub total		
Transcendence/Expansion		
Regarding content of specific experiences		
Clarification		
Giving general rules		
Sub Total		
Mediated Feelings of Competence		
"Good", "Great", "Fine", (with good timing)		
Reinforcement with explanation		
Modification of situation to allow success		
Undifferentiated encouragement*		
Sub total		
Regulation of Behavior		
In relation to time		
In relation to space		
Sequencing of steps		
Matching abilities and task requirements		
Sub total		
Grand Total		

Appendix B

Raw Scores from the OMI

The raw score from the OMI is presented separately for the two activities, household chores and play. For lack of space on the paper, the specific behaviors in each of the five principles have been represented by numbers. The non-mediational behaviors have been indicated by a star (*) and excluded from the grand total of the five principles. Each of the numbers used to represent specific behaviors in the OMI have been given below. Mothers in the control group are represented by numbers 1-9 while mothers in the experimental group are represented by numbers 10-17 in the “Mother no.” column.

1. Verbal
2. Non-verbal
3. Combined (verbal and non-verbal)
4. Intentionality without reciprocity*
5. Expression of affect (non-verbal)
6. Naming
7. Naming and affect
8. Relating to past or future
9. Acceptance and affect*
10. Regarding content of specific experience
11. “Good”, “Great”, “Fine”, (with good timing)
12. Clarification
13. Giving general rules
14. Reinforcement with explanation
15. Modification of situation to allow success
16. Undifferentiated encouragement*
17. In relation to time
18. In relation to space
19. Sequencing of steps
20. Matching abilities and task requirements

Household Chores

Mother no.	Baseline Observation																					Grand Total	Post Assessment																	Grand Total
	Focusing				Med. Of Meaning					Transcend.			Med. Fel. Of Comp.				Reg. of Behavior						Focusing				Med. Of Meaning					Transcend.			Med. Fel. Of Comp.				Reg. of Behavior				
	1	2	3	4*	5	6	7	8	9*	10	11	12	13	14	15	16*	17	18	19	20			1	2	3	4*	5	6	7	8	9*	10	11	12	13	14	15	16*	17	18	19	20	
1	1		1								1					2			1		**4**			2								1	1				2				**4**
2	1		2													1		1		1	**5**		1							1					1	2			1		**4**
3	1		1							1	1					2			1		**5**	1								1		1			1	2				1	**5**
4			1					1					1			2	1		1		**5**	1		1							1					2			1		**4**
5	1												1			2			1		**3**	1						1							1	1					**3**
6			1									1				1				1	**3**	1		1							1	2				2				1	**6**
7	1														1	2			1		**3**			1										1		2			1	1	**4**
8	1		1										1			1		1			**4**			1	1			1			1					2				1	**4**
9	1		1								1		1			2			1		**5**			2							1					2					**3**
10		1								1	1				1	2			1		**5**	1		1								1	1	1			2					**5**
11	1		1													1			1		**3**			2							1	2			1	2			1		**7**
12		1	1				1									1			2		**5**			1							1	1				3			1		**4**
13	1			1							1		1			2				1	**4**	1		1							1	2	1			1			1	1	**8**
14			2							1		1			1	2			1		**6**		1	2							1	2	1			2			2		**9**
15			1								1		1			2		2			**4**	1									1				1	3			2		**5**
16	1									1						2				1	**3**		1	1						2	1				3			2		**7**
17			1													1			1		**2**	1										2			2	2			1		**6**

Play

Mother no.	Baseline Observation																				Grand Total	Post Assessment																				Grand Total
	Focusing				Med. Of Meaning					Transcend.			Med. Fel. Of Comp.				Reg. of Behavior					Focusing				Med. Of Meaning					Transcend.			Med. Fel. Of Comp.				Reg. of Behavior				
	1	2	3	4*	5	6	7	8	9*	10	11	12	13	14	15	16*	17	18	19	20		1	2	3	4*	5	6	7	8	9*	10	11	12	13	14	15	16*	17	18	19	20	
1			1			1				1						1			1		**4**			1									1			2			2		**4**
2	2		1													1			2		**5**			1				1			1			2			1		**5**
3	1							1		1		1				1					**4**	1		1					1				1			1			1		**5**
4			1							1		1				2			1		**4**	1		1												1			2		**4**
5			1													2			1		**2**	1			1			1			1					2					**3**
6			1								1					1					**2**			1			1			1						1					**3**
7			1			1						1				1					**3**									1						2					**1**
8	1		1			1										2			1		**4**			1						1	1	1				1					**4**
9	1		2				1			1						3					**5**			1						1		1			1	2					**4**
10			1				1				1					1					**3**			1			1			1		1				2			2		**7**
11				1		1				1				1		1					**3**	1		2			1			2	1		1			4			1		**9**
12			1					2			1	1				1	1				**6**			3			2		1				1			2			1		**9**
13			1											1		2		1			**3**			1	1					1	2			1	2		1				**6**
14	1			1		1				1	1					1			1		**5**	1		2						2	2			2	2				1	**10**
15			1	1			1			1						1		1			**4**	1		2			1	1		2	1		1			3			2		**11**
16				1	1				1	1	1					1					**3**	1		1	1						1			1			3			1		**5**
17			1							1		1			1	1				1	**5**	2		1				1		1		1			1	2				1	**8**

Appendix C

Excerpts of Mediational Interaction between Mothers and their Children from the Video Recordings

Following, some excerpts from the caregiver-child interactions that were observed in the baseline as well as the post intervention observations of both the experimental and control groups of mothers will be presented. The interactions are presented in relation to the five principles, for some of the specific behavior. Fictitious names have been used whenever mothers have used the real names of the children.

Focusing- combined (verbal & non-verbal)

Mother- Aster, come look at the dust on the cupboard (pointing to the cupboard)

Child- (looks at the direction of the point to the cupboard)

Mother- now take this (handing a piece of cloth) and clean it for me, and then you will sweep the floor

Child- (nodes and take the piece of cloth and start cleaning the cupboard)

Mediation of Meaning- relating to past & clarification

(mother and child were playing football, child kicks a toy cat for the place of the ball)

Mother- oh, is she a ball?

Child- no

Mother- you remember last time you were chasing a cat, she scratched your leg, so don't kick this one as well, she will scratch you.

Child- (picks up the toy cat) what is inside the cat? (trying to look inside through a hole in the cat's tail)

Mother- since she is just a toy, it is cloth inside her. But inside a real cat it body, made up of meat, bone and blood.

Mediation of Meaning- Naming and affect

(child chased off birds from pieces of food particles in the backyard of the house)

Mother- why do you do that? Birds are nice animals, they are here looking for food.

Child- but it is ours

Mother- yes but she may have a child at her home and maybe she is taking the food for her child. They are nice and beautiful, aren't they?

Child- yes, but where is their home?

Mother- they live on trees, in nests. Now wash your socks and finish fast.

Transcendence- regarding content of specific experience

(child just finished moping the corridor floor)

Mother- so what will you do now?

Child- (seems to be thinks for a moment) clean the kitchen floor

Mother- oh, that is a lot for you, you will be very tiered okay, cleaning the corridor is enough for you. But when you finish, you need to squeeze the mop like this (squeeze the mop).

Child- why is it squeezed?

Mother- to drive out the water so that it may dry, and after this, where is it put?

Child- outside

Mother- why?... so that it can dry well okay. Then what shall the person who squeezed the mop do?... wash his hands yes?

Child- yes

Mother- (washes her hand) but why wash hands?...because the mop is dirty okay

Child- okay

Transcendence- regarding content of specific experience

(child just finished telling a monkey story for his mother)

Mother- but do you know where monkeys live?

Child- on trees

Mother- yes! They live on trees, and many trees together are called a forest, so monkeys live in forest.

Child- (seems confused) but they live on trees

Mother- yes, for instance you live in this house

Child- (nodes)

Mother- but this house is also found in the village, so it means that you live in the village, okay

Child (nodes)

Transcendence- clarification

(child playing with a seed carrier)

Mother- do you know what this is?

Child- “efuye gela” (local name for the seed carrier)

Mother- yes! It carries the seed of a plant and takes it to a far place so that the plant may grow in another place. So, let us blow it to a place far away so that it may grow there

Child- I will blow it (tries to blow the seed forward)

Mother- if you blow it forward, it will not fly too far, but if you blow her up high, it will fly away with the wind.

Transcendence- giving general rules & clarification

(child getting ready to wash socks from yesterday)

Mother- are you right not to wash your socks immediately after coming home from school?

Child- (looks up to his mother)

Mother- a clever boy washes his socks upon coming home from school. Are you a clever boy?

Child- yes!

Mother- will you wash them as soon as you come home?

Child- yes, I am clever boy!

Mother- and if the socks are not clean, miss (the KG teacher) will be ungry, so wash it well so that she will be happy.

Child- but she will not be angry

Mother- yes she will be, teachers want you to be clean. And a claver student does not wear dirty socks. Are you a clever student?

Child- yes

Mother- then will you wear neat socks?

Child- yes, will miss love me is I wear neat socks?

Mother- yes she will love you

Mediated feeling of competence- with good timing

(child just finished taking plates off the dining table)

Mother- Hani did her job well and deserve a kiss, yes?

Child- Yes!

Mother- (kisses the child)

Mediated feelings of competence- reinforcement with explanation

(child is pretending to show a fashion show for mother and elder sister)

Mother- (claps for the child) clever girl, you were walking nice and slow like a leaf in the wind, and the way you were holding your waist is beautiful. Can you do that one more time for us?

Regulation of behavior- sequencing of steps

(child is pretending to make coffee)

Child- (taking the coffee cup by one hand from researcher)

Mother- Muna, how do you take cap cup from a grown up person?

Child- (stops and looks at the mother)

Mother- you have to take it in both hands and like this (stretches out both her hands and bent from her waist) okay

Child- okay