Effects of Intervention with Mediated Learning Experiences on Behavioural Functioning of Hearing and Hard of Hearing Children in Primary Schools

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Abstract

The main purpose of this study was to investigate the effect of school-based intervention on grade one children. This study tested the hypothesis that children receiving teacher-mediated-intervention with Mediated Learning Experiences (MLE) - would make significant progress in their behaviour. The participants of this study comprised 200 children 100 from each of the two schools. The two schools were purposefully selected from among government schools that enrol children with low socio-economic status (deprived), making the sample linguistically and culturally homogeneous. Matching was used in sampling the participants. The instruments used for assessment was Burks Behaviour Rating Scale. Socioeconomic status, hearing level, school acoustic conditions and teachers' professional competence were analyzed using descriptive statistics as well as qualitatively. A two way repeated measure ANOVA was used to measure the controlled effects. The relation between hearing level and behavioural functioning was measured for the five major dependent variables. Results of this study revealed that socioeconomic status of parents in both the experimental and control group was extremely low. With regard to teachers, their competence during the post-intervention period included modern MLE. Many of the sampled children in this study suffered from unilateral and bilateral borderline hearing losses. Both schools had a total of 13.5% children who had bilateral hearing loss. It was found that background noise at school was extremely disruptive for children's hearing. However, the hearing level did not have a significant main effect on the behavioural functioning. On the other hand, there was a significant main effect of time on the children's behavioural functioning. There was also a significant interaction effect between the time of measurement and the group, indicating that the intervention had a significant effect on their behavioural functioning. Besides, the effects were not dependent on the level of hearing. Therefore, hard of hearing children equally benefited from the intervention as much as the hearing children.

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Key words: *Hard of hearing, Mediated Learning Experiences, Behaviour*

Background

For children to function well socially and psychologically, they must be cared for in early life and reared in safe, desirable home and school environments. Such social and physical environments could contribute a lotto the positive behavioural functioning of children (Vygotsky, 1962; Bronfenbrenner, 1979). Children with desirable behaviour can become competent members of their society with the ability to promote their own future and the future of their society. However, rearing children to this end is a challenge for those involved — parents and teachers. Parents and teachers could play a significant role in fostering desirable emotion and behaviour. To assist parents in this regard, school can be the ideal alternative environment in which their children can be better cared for in two ways; first through direct care of the teachers and peers in the school and second, through teachers' support to parents. Schools may be second to families in terms of their influence on children's social skills as well as emotional, cognitive, behavioural, and psychomotor developments. A school that incorporates Mediated Learning Experiences (MLE) design could be the essential environment required by the children for desirable behavioural development.

Teachers may also demonstrate negative feelings, through a display of rejection, discouragement, discomfort, distraction, confusion, silence and indifference toward the child's activity and experiences (Rye, 1998), which negatively affects children's behavioural functioning. Efficient teachers who apply MLE in the class may be able to analyze their relationship with their students and apply dynamic assessment to the learning environment. Feuerstein's and Vygotsky's approach of the Mediated Learning Experiences (MLE) affects the educational understanding of teaching, learning, and students' holistic development. The interaction between the individual and the social and physical environment is never immediate; it is always mediated by meanings which originate "outside" the individual, in the world of social interaction. According

to Feuerstein (1991), MLE is the interaction of the organism with its environment via a human mediator, using language. Language facilitates the learning experiences of children.

If teachers possess good qualities, they would demonstrate positive feelings towards positive communicative interaction with their pupils (Rye, 2001a) and enhance desirable behaviour in children and decrease undesirable behaviour such as aggression, poor interpersonal relationships and difficulties in the cognitive problem-solving skills. Children with behavioural difficulties also tend to have difficulties with academic skills; are less engaged in academic activities, achievement is lower, fail more classes, lose motivation and drop out of school more frequently, and may have a lower completion rate compared to children without behavioural problems (Hinshaw, 1992a, 1992b; Kolko, 1994; Walker *et al*., 1995).

On the other hand, children and youth with emotional and behavioural disorders have not welcomed in schools and face several challenges. They tend to experience rejection from regular class peers, teachers or parents of their classmates (Lewis, and Doorlag, 1995). Such lack of acceptance has negative effects on their behavioural development. Their disruptive behaviour may be the result of others' negative attitudes and feelings towards them. Particularly, the negative attitudes and feelings exhibited toward hard of hearing children may create and aggravate fear, distrust, phobias, hostility, anxiety, and prejudice (Lewis and Doorlag, 1995). This may result in children failing to meet the expectations of school and society. Difficulties in behavioural functioning; such as disruptive behaviour, depression, and delinquency can be attributed due to lack of appropriate early positive experiences at home or in the school. Children experiencing such difficulties may create problems for themselves and in the community, such as abusing, snatching, and bullying.

In the study conducted in Addis Ababa, Mamo (1996) indicated that children with social-emotional difficulties could demonstrate unacceptable behaviour in later life unless there is an intervention.

Further, *"Behavioural problems are very serious for the individual, the family, and the society; there is a strong relationship between behavioural disorders in childhood and criminal behaviour in adolescence and adulthood"* Rye (2001a: 120). Nowadays, such destructive and disruptive activities are every–day phenomena in the schools and communities of Ethiopia. For example, from aforementioned personal experience and other studies, it is evident that behavioural difficulties or disciplinary problems such as bullying, aggression, and antisocial or delinquent behaviour among hearing students are prevalent in Ethiopian high schools (Abdinasir, 1995; Taye, 1997; Habtamu, 1998).

Most of the researches conducted in Ethiopia since 1991 were surveys that focused on the educational and social problems of hearing impaired children in deaf schools. As far as I know, no experimental study in special needs education has been undertaken, so far, neither in regular schools, special schools, nor special classes in Ethiopia. Moreover, audiometric assessment has never been conducted in regular classes, to screen, assess, and intervene in the problems of children with hearing difficulties. With the exception of Fransua (1998), there is no attempt of carrying out hearing screening among regular school children in Ethiopia.

Furthermore, to my knowledge, there is no published study that focuses on hard of hearing children and behaviour, in Ethiopia. Few studies in developed countries have examined mainstream hard of hearing children, describing a range of aspects like hearing, speech, language, and academic performance, but ignoring facts such as behavioural skills (Brackett and Maxon, 1986; Davis Chowicz, Shpard, Selmacowicz and Gorgea, 1981; Maxon and Brackett, 1987, 1991). This data indicates that there is a serious shortage of interventional research in the regular Ethiopian schools. Further, I personally found MLE important in bringing significant change in the life of children. On the basis of this assumption the present intervention was designed.

Why Intervention with MLE?

Schools should foster social interactions between children and parents, children and their peers, and between children and teachers themselves, through positive encouragement both in the classroom and outside the classroom (Rye, 2001a). All children including children with hearing impairment should be given meaningful acceptance, love, care and the opportunity to interact freely through appropriate and successful communication. They should be included fully in both the social and educational environment of the school, using Mediated Learning Experience strategies.

Several studies were carried out using MLE demonstrating that there are tremendous improvements in the interventional skills of parents and a number of positive psychosocial developments (Klein, 1996; Tirussew and Alemayehu, 2007). However, research findings that report such interventions exclusively on hearing impaired children, are not available with the exception of Chiswanda (1997). Her intervention using Klein's More Intelligent and Sensitive Child (MISC) brought significant change in the mediation skills of mothers that affect their infants. The present intervention using the MLE theoretical framework sensitizes teachers to apply MLE in the classroom to enhance positive desirable behaviour.

Furthermore, Klein (1996) elaborated that mediated learning, as distinct from direct learning through the senses, occurs when the environment is interpreted for the individual by teachers who understand children's needs, interests, and potential, and who make the components of that environment as well as past and future experiences, compatible with children. In addition, Rye (2001b) pointed out that MLE programs are well known to support development of self-confidence, motivation for learning, and positive social-emotional development. This implies that, compared to other theoretical approaches as such the behaviourist approach, MLE makes a significant difference in the lives of children mediated by the teacher trained in the approach. It is already reported that MLE is successful at the early childhood level, when mediated by sensitized parents, in Ethiopia (Tirussew and Lakew, 1996). However such

MLE intervention has never been attempted in primary school for hearing and hard of hearing children when mediated by teachers.

The purpose of the intervention in the present study is to empower teachers to mediate in the children's behavioural problems during the sensitive phase of childhood which would have a considerable influence on their current behaviour and in their later life. More specifically, the intervention is expected to create knowledge and skill among teacher mediators to assist the psychosocial needs of children at risk; improve communication and relationship of the children with others; develop experiences of children; promote emotional expressive communication and interaction between the children and the teachers, and between the children and their parents; and mediate interaction between the children and the teachers, without any imposition from one side. Over all, the intervention will be expected to decrease negative behaviour such as rejecting, ignoring, not communicating, discouraging, disconfirming children's good behaviour, and view child as an object, those who are interacting with children. Contrary to this the children will develop positive feelings, behaviour, as well as follow initiatives, intimate talk, confirmation, and praise. Hence, this study tested the hypothesis that children receiving teacher-mediated intervention would make significant behavioural functioning using the following basic research questions:

1. What are the hearing levels of the children?
2. Does the intervention with MLE have a significant effect on the development of behaviour functioning?
3. Does the effect of the intervention depend on the hearing level of the children?

Methods of the Study

This part discusses the sampled participants, setting, instruments, intervention program, data collection, analysis and procedures.

Sample

The members of the experimental and control groups were relatively equal in their grade level, language and socioeconomic level, except for little variation on the hearing status. The participants of this study were 200 children enrolled in grade one of the two schools, dispersed in ten sections. The criteria for children included low socio-economic status (deprived), culturally homogenous in their language and culture, seven to eleven age group, enrol in grade one and equal number of males and females. The selections for experimental and control group were matched to each other. The matching was done based on age, hearing level, socioeconomic background and sex. All the 480 children were tested for hearing using the audiometer, to identify 100 children from each school for this study. The sampled children in the two schools were matched based on specific criteria that help to make the matching as similar as possible. Initially, a pilot sample was selected from another primary school. In the pilot study, 20 children of grade one participated, in order to check and amend the language or the questions in the instruments. The main aim of considering hearing and hard of hearing children in the experiment is to measure the impact of hearing level on the psychosocial functioning of children and to measure whether effects of the intervention are dependent on the hearing level.

Setting

The best place to study the psychosocial functioning of many children may be in schools. Particularly an experimental design such as this one that is related to school setting may be inconvenient to study outside the context of school. For Vygotsky, the most appropriate setting for studying how children's thinking develops is schools and classrooms within the context of instruction (Moll, 1990).

Instruments

The study was school-based and data were gathered in relation to the sampled children's behaviour in everyday activities. The data gathering instruments were adapted standardized test and calibrated audiometer.

Hearing test and background noise measurement

Two school audiologists were employed to test the hearing of the sampled children, using calibrated pure tone audiometers (PTA).

Burks Behaviour Rating Scale

Behaviour development was assessed using Burks Behaviour Rating Scales (2006), consisting of 100 items that specifically describe behavioural and emotional problems (disruptive behaviour, attention and impulse control problems, emotional problems, social withdrawal, ability deficit, physical deficit and self-confidence). The test was developed for children between the ages 6 to 18, grades 1 through 12. The test-retest reliability of parental report varied between .91 and .85 for Children's Behavioural Checklist and between .84 and .89 for Teachers' Report. The scale is answered on a 5–point Likert scale which addresses seven aspects of child behaviour relevant to a child's or adolescent's adjustment to school and community activities.

The Experimental Design

The design for this research was pre-intervention test and post-test

Group		Intervention	Post-test
Group	Pre-test	Intervention	Post-test
A	O	X	O
B	O		O

Group A receive treatment

Group B act as control

Procedures of the experiment

The research consisted of pre-test/post-test experimental group and control (delayed intervention) group. The pre-test was conducted before the beginning of the intervention program for both control and experimental groups, at the beginning of the new academic year. The post-test was conducted at the end of the intervention program (eight months after the intervention was conducted) in both control

and experimental groups. Test re-test was conducted by the assistant researchers and classroom teacher to test the reliability of the instrument. The main procedures include hearing test, matching the children, administering the pre-test, conducting training for the teachers, administering the intervention program for the experimental group, post-test, data analysis, presentation and report writing.

Independent and Dependent Variable

The independent variables were on theories of Mediated Learning Experiences that comprises theories of behavioural development, effects of hearing impairment, the importance of positive interaction and care, mediation of knowledge and skills of teachers. The main dependent variable is behavioural functioning that includes sub-variables: disruptive behaviour, attention and impulse control problems, emotional problems, social withdrawal, ability deficit, physical deficit and self-confidence.

Extraneous Variables

Teachers in the experimental groups were oriented not to defuse the intervention program; the participants were homogenous; the observers did not know which school was the experimental or control group.

Main contents of the intervention

The main content of the intervention includes general introductory course in special needs education; environmental barriers including negative attitudes, poor caring and poor teaching approaches affecting psychosocial functioning; dynamic assessment and mediated learning experiences. The elements of MLE were taught throughout the 84 hours integrating with other contents and the 40 hours are particularly emphasized training in MLE.

The Intervention Process

Phase I: Pre-intervention. Burk's (2006) assessment instruments were adapted, prepared, and employed to assess the sampled children's present conditions. Manuals for the intervention were

prepared and training for teachers was conducted for a total of 84 hours.

Phase II: Intervention in the process. While the teachers carryout the intervention, the training was continuing to stabilize their knowledge and interventional skills as well as promote positive attitude toward the intervention program.

Phase III: Post Intervention. Similar training was given to the teachers in the control group, in condensed days but similar duration. This delayed intervention was given after all the post-test data collection was finished.

Data collection procedures

Pilot Study

The pilot study was carried out with grade one children of a selected primary school; with single section, out of which 20 children were sampled. This sample was different from that used in the main study. Only standardized Burks Behavioural Rating Scales were used in the pilot program.

Main study

Pre-test data collection

Prior to data collection, permission to conduct the research was secured from the sub-city education office and the school principals.

1. Hearing test. All the sampled children were tested by two audiologists using PTA, to identify their hearing level.

2. Pre-test. During the pre-test, a base line quantitative data collection was conducted with the support of field assistants.

3. Post-test. During the post-test, data was recollected using the same instruments and procedures, and by the same pre-test data collectors, eight months after pre test was conducted.

Data analysis procedures

Mean and standard deviation of the total scores for both experimental and control groups were compared with the pre-test and post-test. A two-way analysis of variance, (ANOVA) was used to analyze the effects of hearing on the behavioural functioning. Repeated measurement of ANOVA was used to measure the controlled effects of the intervention and whether or not the effects of the intervention were dependent on the level of hearing. Chronbach's Alpha was used to measure the reliability of instruments in the study. The relation between hearing level and behavioural functioning was measured.

Result and Discussion

Characteristics of the Sampled Children

The members of the experimental and control groups are equal on some of the characteristics, except for little variation in the hearing status. In both groups, the participants were 50% male and 50% female. Moreover, their age range was also similar in both experimental and control group. 71% were in the age group of 7; 25%, in the age group of 8 and 9, while the remaining 4% were in the age group of 10 and11. The first language of 92% participants of both experimental and control groups was Amharic, the national working language and language of teaching and learning in Addis Ababa city administration primary schools. The majority (54%) of children in both schools fell under the category of border-line hearing level while 13.5% were hard of hearing children. Children in the normal hearing category were 32.5% in aggregate.

Hearing level of the children

Unilateral and bilateral hearing status

The result of the test in both groups shows that the majority of sampled children in this study have unilateral borderline hearing loss, 112 (56%) in the right ear and 106 (53%) in their left ear. Mild hearing loss was found in 15 (7.5%) children in the right ear and 19 (9.5%) children in the left ear; moderate hearing loss was found in 3 (1.5%) children in the right ear and 6 (3%) children in the left ear,

while severe loss was 1 (.5%) child in each ear. There was no statistically significant difference in unilateral hearing loss (X^2 = 1.193 *df* = 2, *p*>.05) between the group.

Bilateral hearing impairment refers to relatively equal loss of hearing in ears, border-line, mild, or moderate hearing losses. The majority (54%) of the children tested were found to be in the category of bilateral border-line hearing loss, whereas hard of hearing children were found to be 13.5%. Children in the normal category were 32.5%, in both experimental and control group. There are differences in the children's hearing level of the experimental and control group. While 57% children of the experimental group and 51% children of the control group were in the borderline (16-25dB) category of hearing loss, only 28% children of the experimental group and 37% children of the control group were in the normal hearing (0-15dB) category. Hard of hearing children were found to be 15% in the experimental and 12% in the control group. However, there was no statistically significant difference in bilateral hearing level (X^2 = 2.207, *df* = 2, *p*>.05) between the groups.

Effects of Hearing Impairment

Families, teachers, and peers of children communicate in the spoken language which is not heard and understood by the children with impairment and this may isolate them from the social environment and the continuum of classroom interaction. Antia (1982) reported that hearing-impaired children were less likely to interact with their social environment and were deprived of language and communication development, which plays a crucial role in their psychosocial development. Communication problems could contribute to peers' rejections and poor social skills. One of the previous studies, Meadow (1980), described some characteristics of hard of hearing children as rigid, demonstrating uncooperative behaviour, egocentricity, absence of inner controls and impulsivity due to poor language and social communication skills. In contrast to previous studies such as Fransuwa, (1998) and other international

findings, the result of the present study showed no significant difference in the effects of hearing loss on behavioural development.

The two way ANOVA shows that there was a significant statistical main effect of hearing level on behaviour ($F [1, 194] = 5.787$, $p<0.05$). However, the main effect of the group was statistically insignificant ($F [2, 194] = 1.663$, $p<0.05$), and there was no interaction effect of the groups ($F [2,194] = .872$, $p>0.05$). This shows that behavioural problems tend to be similar along with hearing level. One reason for this could be that home and school environment were full of problems and these were disregarded by parents and teachers in the case of both hearing children and those with hearing problems. If the environment is equally disregarding for both hearing and hard of hearing children in social interaction, care, and mediating, children with normal hearing may not receive sufficient social input and stimulation for their development like the children with hearing difficulties who lack sufficient amount of input due to their impairment.

Effects of the Intervention

This section compares the analysis of effects of intervention on psychosocial functioning of the 177 sampled children of the experimental and control groups. In this comparison, the sampled children involved in the pre-test and those who dropped out (10 and 13 from experimental and control groups, respectively) during the post-test were not calculated. A repeated-measures ANOVA was calculated to evaluate the effects of MLE on the behavioural functioning of the children.

Effects of the Intervention on Behaviour

The Burks Behavioural Rating Scales, 2nd edition (2006) was used to assess the children's behaviour and then conduct intervention. The findings of the intervention revealed that the intervention had brought significant change in the behavioural functioning.

The repeated-measures ANOVA showed that there was statistically significant within-subject main effect of time (the time between pre

and post-test) on the development of desirable behaviour (F [1,175] =170.883 p<.05, η^2 =.494) with average large effect size, indicating that the problem behaviour of the children declined. There was also within-subject interaction of time of measurement and group, (F [1,175] =42.670, p<.05, η^2 = .196) with medium effect size, indicating significant development of desirable behaviour of children in the experimental group. However, there were no statistically significant change between subject effects (F [1,175] =3.689 p>.05, η^2 =.021), with small effect size.

As pointed out by Vygotsky (1981), the direction of behavioural transformation of natural forms into higher cultural forms is from external to internal; the behaviour must exist socially before it can become part of the internal behaviour of the individual. According to Vygotsky any function in the child's cultural development appears twice or on two planes. First, it appears between people as an inter-psychological category, and then within the child as an intra-psychological category (Vygotsky, 1981:163).

Vygotsky's ideas helped me to understand the prominent role of education, which could establish modern mediational interaction between children and parents, peers and teachers. As stated by Vygotsky (1962), schools are important in playing such a role that help learning by guiding parents and peers to lead development with gradual internalization of intellectual processes, which are activated through social interaction, and this needs to be intentional mediation.

This hypothesis was confirmed in this study; with the application of MLE (Intentionality and reciprocity, meaning, transcendence, feeling of competence and self-regulation and control of behaviour) and improvements in the learning settings, children had improved their behavioural skills (decrease disruptive, impulsive behaviour, attention problems. They also improve social interaction and develop self confidence). The findings of this interventional research with Burks Behavioural Rating Scales had a hypothesis that the children in the experimental group would show significant differences in their behaviour**.** This was confirmed by this study and the intervention had significant effect on children in the experimental group.

There may be a significant number of children with behavioural problems in the general education settings, which creates great challenges to educators, school communities, and society in general, in many nations around the world (Knitzer, Steinberg, and Fleisch, 1990). Teachers and school communities may not have the knowledge and skill on how to handle and manage the behavioural difficulties of students at this level. It is clear that teachers in the general education settings of Ethiopia feel that they lack knowledge and skill to meet the needs of students' emotional and behavioural problems. They may also not react positively to the difficulties students with emotional and behavioural problems are facing.

Knowledge and skills to provide appropriate supports are required by the school community to alleviate these problems and meet the needs of children with emotional and behavioural disorders in the general education setting. The type of supports for children with behavioural disorders must be clearly defined, and teachers need to be empowered to handle the problems effectively. I have qualitatively assessed that teachers in the sampled schools need training on how to apply dynamic assessment, provide support, and meet the need of children with behavioural problems. Since the majority of these children were from families living in poverty, they may experience risk factors that increase the probability of poor social and emotional development.

Regulation of behaviour was carried out by the teachers, for example, by positively inhibiting impulsive behaviour and accelerating desirable behaviour. It can be carried out by analyzing the task components, inhibiting the child's acting-out behaviour, delaying immediate gratification, focusing on task characteristics, and eliciting meta-cognitive strategies.

As a result, children with behavioural problems are not effectively included into mainstream classrooms. Positive learning opportunities to handling children are not well exercised among teachers and school communities of this study. Strengthening teachers, school,

and community capacity in terms of handling children with behavioural difficulties is important.

Education plays a critical role in the development of children. One of the applications of MLE in education is caring, encouraging and creating a friendly and positive social and physical environment, for socialization and positive well-being in the children. Rye (2001b:9) stated that *"Socialization is the key mediating process between the children and society in upbringing of children, a process through which the child internalizes and adjusts behaviour to norms, values and way of living in the family, society, and culture"*. MLE applied in this study might have helped prevent social, emotional, and behavioural problems. The study indicated that it is possible to create positive outcomes for children with emotional and behavioural disturbances. Changing outcomes for children and youth with emotional disturbance and their families is not easy. This interventional study focused on training the ten teachers so that they helped the children, their peers and family. The study did not directly focus on the parents, which is one of the limitations of this study. Instead, peers and parents were consulted through the teachers to be involved in the intervention, which brought significant change. This is because the established strong capacity of parents, teachers, and peers helped much to care for and address the needs of children with behavioural problems in this study.

Effect of Intervention and Hearing Status

The repeated-measures ANOVA indicated that there was statistically significant within-subject main effect of time of measurement on the development of desirable behaviour ($F [1,171] =140.609$, $p<.05$, $\eta^2=.451$) with medium effect size. This indicates that the undesirable behaviour of all children was changed through time to a positive direction. Besides, there was statistically significant interaction of time of measurement and the group, ($F [2,171] = 31.612$, $p<05$, $\eta^2 = .003$), with small effect size. However, interaction effects of time of measurement and hearing level on the development of desirable behaviour ($F [2,171] = 2.595$, $p>.05$, $\eta^2 = .029$) and the three-way

interaction of effects of time of measurement, hearing level and groups were not statistically significant, (F [2,171] = .257, p>. 05, η^2 = .003), with small effect size in both cases.

The between-subject effect groups (F [2,171] =.948, p>.05, η^2 = .006) the hearing level (F [2,171] =.553, p>.05, η^2 = .006) and their interaction (F [1,171] =1.27, p>.05, η^2=.013) were not statistically significant. In general, there were positive changes in the behaviours of children and the intervention has brought a significant decline in the undesirable behaviour of children in the experimental group. Hard of hearing children benefited equally from the intervention. The desirable behavioural development was not dependent on the status of the hearing level. This indicates that all sampled children with various hearing levels, including hard of hearing children benefited equally from the intervention.

There could be many factors that contributed to the positive main effect of the intervention on desirable behavioural development for all children, regardless of their degree of hearing loss. First, the intervention was launched with prior and careful identification and assessment of hearing, psychosocial functioning, social and physical environmental factors such as parental socioeconomic status, acoustic environment, teachers' knowledge, skill, and commitment, which were considered as barriers for the children to learn better.

Then, the intervention was launched after intensive training of teachers and extensive monitoring that helped to enhance their knowledge, skill, and attitude using MLE and other related theories social cognitive theory (Bandura, 1977) and ecological theory (Bronfenbrenner, 1979). Following the teachers' training, the intervention was launched with the plan that focuses on the group of children and individual child support system as well. The teachers' commitment to use knowledge to support the sampled children according to their difficulties, needs, and potentials was the other success of the intervention. Teachers' commitment was also extended to the provision of extra supports for the children with hearing loss, to stabilize their strengths and to prevent weaknesses.

More specifically, the teachers in the experimental group had provided appropriate support for the parents of the children and their peers so that sampled children could benefit from the established desirable social environment. The intervention was successful because teachers' awareness about children with hearing losses and about the theories and practices of MLE in the mainstream contexts were carefully done with consistent monitoring. An intervention program with MLE in this study helped the children with hearing impairment to enhance their holistic development. Intervention with MLE seems crucial for the effectiveness of inclusive education; because in this study, MLE helped relatively to remove some of the barriers of learning and enhance children's participation in instructional and social activities.

As repeatedly reported in this study, whenever there is hearing loss, language problem, poor reading skills, and poor academic achievement could occur. Children would continue to experience difficulties reading later in life, if they had not been intervened, or if the intervention terminated after this research. The school-based intervention with MLE needs to be sustainable. The effect of the intervention is evident in children's improvements of their language skills, as compared to the control group. The unfavourable attitude of the school community toward hard of hearing children, and children's own limitation of their ability to communicate, cope, and understand through the sense of hearing may continue to affect their psychosocial functioning. A significant number of children with hearing impairment in primary schools of Ethiopia might not have benefited from their teachers, like the intervention results achieved in this study. Intervention with MLE in this study created strong social and emotional intimacy and interaction between the teachers and the children through language. This in turn brought significant development on the children's psychosocial functioning. According to Vygotsky (19978), social skills, emotional well-being, and cognitive development could be attributed to the individual's interaction within the environment through language, i.e., MLE.

Conclusions

Research findings and theories were reviewed corresponding to the hypothesis, and research questions and instruments adapted to collect valid data. Data were collected at various times, at pre intervention and test-retest during the post intervention with the involvement of inter-raters in the data collection for its validity. On the other hand, the test-retest reliability of the previous Burks Behavioural Rating Scale varied from rater to rater. According to previous reports, the reliability varied between .91 and .85 for parents and between .84 and .89 for the teachers' report. The post-test in this study for the behavioural rating scale rated by observers was .94; first rated score by teachers was .97, and re-rated score by teachers was .98.

Behavioural problems in children vary in prevalence, seriousness, and manifestation. Schools need to foster positive behaviour. Learning problems and behavioural problems could be strongly correlated, which need to be mediated by teachers in the school context. Teachers need to meet the need of children with behavioural problems in the process of leaning, by removing environmental barriers. If schools fail to change the children's development toward desirable outcome, the behavioural problems may be manifested in poor academic achievement, low self-concept, poor motivation, poor language usage and undesirable emotion and behaviour. Children who are not able to appropriately manage their school behaviour and their own learning process may often lose motivation to learn, develop low self-concept, and demonstrate social and emotional maladjustment.

Teachers in particularly can demonstrate MLE for achieving success in educational support, in empowering children to be motivated and emotionally adjusted in the learning process. Schools are highly responsible for rearing children in all aspects of life, be it physical, language, social, emotional, motivational, self-concept, and in upgrading their academic achievement. It is possible to conclude that personal commitment and competencies of the teachers in the theories and practices of MLE is very important for quality learning of all children and/or children with some organic impairment and/or

psychological difficulties. The present intervention study, which shows significant change in the behavioural functioning of children in the experimental group, was not without difficulties.

Hence, teachers in similar schools need to be alerted to observe co-occurring problems in their pupils, such as social and emotional maladjustment and then, apply MLE. Schools are important social systems, and a conducive classroom environment is vital for children's desirable behavioural functioning. The findings of this study are good indicators that teachers' mediation in solving day-to-day problems is vital for the well-being of the children. To do their job effectively and efficiently, teachers need the best pre-service education and continuous professional development that focuses on the study of children's needs, dynamic assessment, and mediation within the zone of proximal development of the children. The intervention program of this study created opportunities for teachers to learn about inclusive education practices. The program has included how to adapt instruction and mediate learning for the development of desirable behaviour. The intervention program prepared the teachers to meet the challenges through a sound knowledge base and development of appropriate dispositions and performances. This project is a lesson that unless we give serious attention to quality teacher education, we cannot change the flexible brain of children toward desirable development. Finally, this research may not have answered many questions that come to people's mind regarding the behaviour of primary school children.

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