

THE EFFECT OF SOME TEACHER AND SCHOOL  
CHARACTERISTICS ON THE APPLICATION  
OF TEACHING MATERIALS AND USE OF  
SCHOOL PEDAGOGICAL CENTERS

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SCHOOL OF GRADUATE STUDIES  
ADDIS ABABA UNIVERSITY

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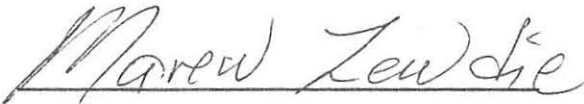
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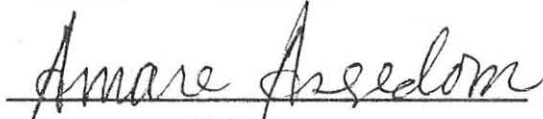
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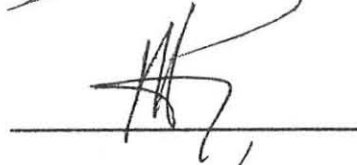


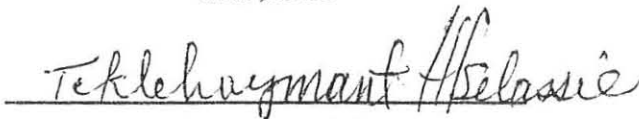
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## ABSTRACT

The purpose of this study was to investigate the effect of experience, qualification, attitude, school Location and material-financial supply on application of teaching materials and SPC use.

To this end, data were collected through <sup>a</sup>questionnaire, classroom observation and interview. The randomly selected sample included 94 male and 64 female teachers, eight directors and eight SPC co-ordinators selected from four urban and four rural schools in and surrounding Nekemte. The data collected were analyzed using statistical methods such as t-test, chi-square test, pearson's product moment correlation, mean and percentage.

The results revealed that less experienced and less qualified teachers performed significantly higher than the more experienced and more qualified teachers in applying teaching materials and using SPCs. It was also found out that the difference between urban and rural schools in teaching material application and SPC use is not significant. Besides, it was indicated that attitude towards teaching and application of teaching materials as well as SPC use are significantly, positively and highly correlated. Furthermore, less experienced and less qualified teachers demonstrated more favourable attitude towards teaching than their more qualified and more experienced counter parts.

# CHAPTER ONE

## 1. INTRODUCTION

### 1.1 Background of the Study

The traditional way of understanding teaching as a situation in which the teacher tells and students listen; the teacher disciplines and the student disciplined is not accepted today (Freire, 1970: 47). Gone is the time for the notion that the art of teaching is nothing better than the process of imparting information (Chauhan, 1983: 11). Currently teaching is conceptualized as creation of a situation capable of promoting learners active involvement (Davies, 1981: 193).

Proper application of teaching materials, along with the other instructional elements, is indicated to be the means through which teachers appeal to learners' motivation, interest, understanding and active participation (Sinder, 1971: 10; Romiszowski, 1974: 9; Devereux, 1961: 179).

Wittich & Schuller (1957: XXII) argue that properly utilized, teaching materials have the potential to produce the best learning because they own qualities predominantly influencing the sense of sight through which most of human learning is believed to take place. Besides, teaching materials are taken as one of the means for minimizing the

decline of students' attention and interest often encountered due to the "chalk and talk" type of teaching (Wittich & Schuller, 1967: 17). Thus, beyond verbalism, the provision of a wider range of learning experience, for nurturing creative responses, has come to be a science of the process of learning-teaching and the use of instructional materials has been found out to be one of the ways to this end (Callahan & Clark, 1988: 412).

In the present Education and Training Policy of Ethiopia (E.E.P. - 86, 1994a: 27), it has been stated that:

In order to promote the quality, relevance and expansion of education, due attention will be given to the supply, distribution and utilization of educational materials, educational technology and facilities.

This indicates that the policy has apprehended the importance of teaching materials as one part of the effort towards up-grading quality of education.

Nevertheless, the degree to which teachers utilize instructional materials at a classroom level has become another challenge in the field of education. Particularly, when seen from experience, in Ethiopia, the extent to which teachers employ instructional materials appears to be discouraging (Fantu, 1992: 35). Besides, the effort made by primary school teachers in making use of pedagogical centers is seen to be unsatisfactory (Tsega, 1983: 42).

The level to which teaching materials are utilized and pedagogical centers are used could be affected by diverse factors. Experience, age, sex, attitude towards teaching, school location, class size, school community interaction, etc. are often encompassed in the set of variables that jointly explain successful exploitation of instructional materials and pedagogical centers.

With this understanding, the investigator was initiated to pursue the issue further with the purpose of examining the effect of some of the teacher and school characteristics on utilization of teaching materials and the use of School Pedagogical Centers (SPCs).

## 1.2 Statement of the Problem

In due course of the investigation, the study endeavours to answer the following questions:

- A) Do teacher characteristics, particularly teachers' experience, qualification and attitude towards teaching significantly affect the utilization of teaching materials and the use of SPCs?
- B) Do school characteristics, specifically school location and financial and material supply significantly influence the utilization of teaching materials and the use of SPCs?

### **1.3 Significance of the study**

The study is intended to help in contributing practical evidence to the attempts our practitioners in the field are making to shed light on the extent to which the media aspect of education is considered.

Besides, it would help in unfolding the weight and direction in which teacher and school characteristics are affecting the proper utilization of teaching materials and SPCs thereby suggesting possible means of challenging the undesirable effects.

### **1.4 Delimitation of the Study**

The investigation was limited to assessing the effect of school and teacher characteristics on utilization of instructional materials and the use of SPCs only in terms of the five sub-variables specified in the statement of the problem. The universe of the study was taken to be all primary schools in Nekemte town and its suburb.

This scope, in general, was preferred to get the study manageable in terms of the time available. Moreover, owing to the fact that the study can not be made in Addis Ababa due to the absence of teachers with more years of service (experience), Nekemte was chosen for its familiarity to the investigator. This familiarity is thought to help in easing

some of the difficulties usually encountered in the process of data gathering.

Primary school was selected for the reason that it is the level in which we can lay proper foundation of education and is area of emphasis in the Education and Training Policy of Ethiopia (E.E.P. - 86, 1994b: 19). In addition, utilization of teaching materials is relatively more critical in primary grades.

### **1.5 Limitations of the Study**

Both local and overseas literature specifically discussing teaching materials and SPCs in terms of the independent variables considered in this study were extremely scarce. Hence, the investigator has been forced to rely on reviews dealing with instructional performance as related to teacher and school characteristics assuming that utilization of teaching materials and SPCs are part and parcel of teaching tasks (performance).

In addition, larger frequency of classroom observations were essential to obtain more valid information and arrive at more dependable conclusions. Nevertheless, in this investigation, teachers included in the observation sample group were observed only two times each. It was impossible to have more observation sessions due to the restricted number of assistants possible to employ.

Furthermore, documentary information that could have helped to show the actual extent to which teachers prepared and borrowed teaching materials from pedagogical centers could not be used as intended. The documents in this regard were either incomplete or inaccessible or totally absent in five of the eight sample schools.

### 1.6 Operational Definition

Attitude (towards teaching)	- teachers feeling of gratification in their profession.
Experience (in teaching)	- number of years of services after graduation.
Less experienced teachers	- refers to teachers with 1-5 service years.
More experienced teachers	- refers to teachers having more than 5 years of service.
Primary school	- refers to schools having grades 1-8
Rural Schools	- schools in villages with population below 2000.
School characteristics	- refers to only school location and material and financial supply.
Teacher characteristics	- refers to only teachers' experience, qualification and attitude towards teaching.

- Teaching materials - any device which can be used to make learning-teaching process more concrete, practical, active, etc.
- Urban Schools - Schools in towns with population exceeding 2000.

## CHAPTER TWO

### REVIEW OF THE RELATED LITERATURE

#### 2.1 Teaching Materials: A Conceptual Framework

##### 2.1.1 Meaning

The phrase "teaching materials", in the context of instruction, has been defined differently by different practitioners. For instance, teaching materials, as stated by Good (1959: 24) refer to "an auxiliary instructional devices intended to facilitate learning." Walklin (1982: 264 & 265) described teaching materials as a supplement of chalkboard and teacher's talk. For Romiszowski (1974: 9) teaching materials are aids in the teaching of topics. These three definitions seem to have a point in common. They all perceive teaching materials as aids or supplementary to the teaching-learning process. Such understanding of teaching materials, in line with their present role in instruction, is often considered a misconception. Amare (1996: 96) states:

In the light of the present observed roles played by teaching materials, it is at least to be outdated to call them "teaching aids". This name probably might have been appropriate only in the oral culture when the dominant mode of technical communication was oral and when oratorship and memory were the requirement of education.

Kinder (1959: 9-11) denotes teaching materials as devices which can be used to make learning experience more concrete, more realistic and more dynamic. Brown and others (1969: 592)

stated them as a self-supporting materials which present a body of information in instruction.

### **2.1.2 Significance and Purpose**

As indicated in the preceding chapter, the traditional chalk-and-talk type of learning is already outmoded. As the result, the current issue on the teaching-learning agenda is a call for approach promoting independence, inquiry, as well as active involvement of pupils. To this end, along with other instructional elements, teaching material utilization is found to be a better approach. Based on literature reviews, Amare and Tassew (1996: 3) argued that "... educational material has received increasing attention in the last decades because of growing evidence to its importance and as a correlate and a probable determinant of classroom achievement." They further asserted that educational materials also have the effect of complementing the existing teacher skills thereby substituting for teachers inadequacy.

Furthermore, Kepes (1980) stressed that the visual language (a characteristics that most teaching materials bear) is capable of disseminating knowledge more effectively than almost any other vehicle of communication. Similarly, Kemp (1968: 4) distinguished instructional media as a stopgap to limitations of experience of teachers and shortcomings of the word-only communication in learning-teaching environment.

Research evidences have disclosed that, when properly used in the teaching situation, audio-visual materials supply a concrete basis for conceptual thinking; create a high degree of interest in students; make learning more permanent; offer a reality of experience which stimulates self-activity on the part of pupils; contribute to the efficiency, depth and variety of learning; etc. Dale (1956: 65).

From the above views promoted, it is clearly observable that lesson presentation with teaching materials is more effective than without. This could be further substantiated by research outcomes on application of instructional materials mentioned below.

As reported by Schramm (1977: 52 & 53), the effect of 200 transparencies added to college classes in Engineering Descriptive Geometry was studied and sections that saw transparencies scored significantly higher on final examination than those who did not. Similarly, experiment on the use of Film Strip on First Grade students learning to read was carried out and the experimental group did significantly better than the control group. Furthermore, Komiski (1978: 48) has found out that learners whose teachers had been provided a chance to choose materials for reading and mathematics scored significantly higher in achievement test than learners whose teachers had not been given similar opportunity.

### 2.1.3 Selection and Use

Among the procedures needed for effective utilization of instructional materials, the question of selection and use (application) appears to require careful handling. It seems so because selected and used badly, visual aids are time wasting, destructive, expensive, inflexible, confusing, etc. (Staton, 1990: 151).

The various suggestions forwarded by educators regarding better selection and use of instructional materials seem to converge around theme that underlines the excellence of multi-media approach (utilization of many media in an organized form). For instance, Brown & Others (1969: 593) has indicated that the use of variety of audio-visual media is more preferable because they reinforce each other. Amare (1995: 165) maintains the same view advocating that whether because of their effect in stimulating different perceptual nerve endings, or due to their additional time they involve, multi-media approach is more effective in behaviour formation. Similarly, Birara (1988: 23) favoured the cross-media method arguing that the deficiency of one form is complemented by the unique value of the other.

Therefore, it is advisable that teachers be aware of the types (classifications) of teaching materials in order to make selection and use of varied instructional materials appealing to the combined effect of sense perceptions (sense organs).

## 2.2 School Pedagogical Centers: Elemental Correlate of Teaching Materials

The existence of School Pedagogical Centers (SPCs) in Ethiopia was obviously preceded by the establishment of Awraja Pedagogical Centers (APCs). Regarding the role of APCs in promoting instructional activities at school level, it has been stated that the ultimate aim of APCs is to bring their services to the benefits of teachers and thereby facilitate the work of teaching and learning (MOE, 1984: 25 & 26).

For this purpose, until the year 1983 alone APCs have helped in the establishment of 5,422 SPCs all over the country (MOE, 1984: 27).

The objectives of SPCs were made to encompass the following.

- . promote the criss-cross of ideas and materials;
- . foster the development of learning from one another;
- . encourage those who have the ability and know-how to come forth and demonstrate their skills and talents;
- . recognize and appreciate the efforts of those who try their level best to contribute to the growth and development of their profession;
- . induce professionals to engage in creative, innovative and productive work and to give them the necessary support that would facilitate their work (MOE, 1982: 32).

These objectives seem to be of wider range, unclear and over-ambitious. Amare and Tassew (1996: 21) have remarked that the stated objectives of SPCs were vague, general and not well focused on the purpose of producing and disseminating educational technology. The two authors further commented that the objectives appeared to reflect activities as wide as education itself.

### **2.3 Evaluative Studies of Teaching Material Utilization and Use of Pedagogical Centers (Ethiopian Context)**

As spotted by Amare (1995:163), in spite of the immense need for research in the area of educational media, very little has been done so far. As a result, enough number of local studies made on teaching material utilization and use of SPCs do not exist. However, the findings of the few available are recapitulated below.

#### **2.3.1 Evaluative Studies on SPCs**

In the study entitled "Problems of School Pedagogical Centers in Selected Senior High Schools in Northern Shoa," Belayneh (1991: 74-76), from the data collected, pointed out that: SPC coordinators did not have the required competency and commitment; the teachers do not have the skills for producing teaching aids; teachers' attitude towards the centers is negative; the SPC objectives were very ambitious. He further concluded lack of interest and motivation from the teachers, lack of sufficient budget, lack of administrative support, lack of the necessary support from APCs and shortage of materials and equipments are the limiting factors.

In another study entitled "A Survey of Pedagogical Centers in Primary Schools of Addis Ababa," Amare and Tassew (1996) critically examined the extent to which APCs and SPCs have realized the objectives for which they were established and to what extent teachers utilize instructional materials.

To this end, they obtained data from 86 teachers, 19 head masters and 14 APC and SPC coordinators from three of the six zones in Addis Ababa.

In this study, regarding the fulfilment of the objectives, it has been found out that 40.5% of the respondents rated the overall performance of SPCs as very low/low (p. 27). In the attempt they made to prob into the detail responsibilities of the centers, the result showed 51.4% of the respondents judged SPCs as having good/high performance in the area of "preparation of teaching aids using local resources" while the SPCs working relations with local artisans has been rated "very low" by 91% of the respondents (p. 27).

This study also demonstrated that the two most serious problems accountable for the low performance of SPCs and APCs are lack of trained manpower and lack of resources, as responded by 46.7% and 44.3% of the respondents respectively (p. 31). Furthermore, the support SPCs get from higher management (including from APCs) in the form of technical assistance and resources was judged to be low by 57% of the sample members (p. 32).

Besides, Amare and Tassew, in examining the availability of teaching materials in the pedagogical centers, disclosed that 51% of SPCs have adequate materials while the rest (49%) are poorly equipped. As to the types of the learning materials in SPCs, they indicated that 48.5% are graphic and

48.4% are models and objects. TV, Radio, tape-recorder, video, slides, computers and print materials together constituted the rest 3.1% (p. 34).

In ERGESE, the data secured on performances of SPCs have indicated the service they give to the classroom instruction is not yet strengthened due to observed difficulties such as low participation of teachers, lack of training of the coordinators and low level of budget allocation (MOE, 1978 E.C.: 225).

### **2.3.2 Evaluative Studies on Utilization of Teaching Materials.**

Fantu (1992: 54), other than his findings alluded elsewhere in this paper, has concluded that most of the teachers in elementary schools of Addis Ababa lack the know-how of preparation and application of teaching devices to the real situation, probably due to the absence of effective training.

In addition, he observed materials prepared in most of elementary schools are not adequate to provide students with meaningful learning.

In Erkyhun et.al. (1991:36-39), study conducted using 76 teachers having experience between 1-5 years and selected from 23 primary schools in three regions, have found out that 75 (98.7%) out of the 76 sample teachers reported that they produce teaching aids. Regarding the number of hours used for the preparation of teaching aid per week, 19 teachers (26.8%)

reported one hour, 34(47.9%) responded two, 10(14%) responded three and 8(11.3%) teachers responded more than three hours. However, an analysis of the teachers' lesson plan showed 23(30.3%) out of 76 teachers have not planned for the use of teaching aids. Besides, the result of classroom observation demonstrated that teaching aids were used only in 20(26.3%) out of the 76 lessons of subjects in which the teachers claimed to have more experience and in 12(15.8%) out of 76 lessons of subjects in which they felt to have less experience. Hence, there is a considerable gap between teachers' claim (response) of teaching material usage and the data from actual classroom observations.

#### **2.4 Teacher Characteristics: Factors Affecting**

##### **Teaching Performance**

Teacher characteristics have remained to be one among relevant issues in research on teaching for the reason that they are directly or indirectly related to teacher behaviour that do influence classroom performance (Gage, 1963: vii). Teacher characteristics encompass several variables such as age, personality, mother tongue, intellectual ability, social attitude, professional expectations, experience, qualification, attitude towards profession, etc. (Makau, 1986: 9). Nevertheless, here, those relevant to this paper (the last three) are reviewed.

#### 2.4.1 Teachers' Experience

Among the various factors contributing to classroom performance, teachers' experience seem to be considered central. Usually, teacher experience is expected to have positive relationship with teaching effectiveness. A longitudinal study conducted for five years on a group of teachers showed that there is a significant quality increase in teaching behaviours, such as, making instruction systematic and stimulating (Adams, 1982). Adams and Others (1980), Adams and Martray (1981) have also found out that teachers' self-concern decreased in magnitude from the time of student teaching practice through five year teaching, while teacher task pattern related to instruction increased along with more years of service. In underlining the importance of experience, Feiman-Nemser and Buchmann (1985) stated that first hand experience is particularly evident in contributing to learn to teach. Similarly, Vare (1994: 209) recognized the positive side of experience arguing experienced school teachers should work with college professors as partners to prepare perspective teachers and to facilitate the continual professional development of teachers in service. After reviewing many research findings, Heyneman (1980) also has come up with the conclusion that teachers' experience and pupils progress have positive relationship.

Furthermore, Boroko and Butcher (1984) have indicated that lower level of teaching performance would be obtained with

less experienced teachers (below 6 years of teaching) than those with more experience (minimum of 6 years). Comparably, in studying effectiveness of six-grade teachers through pupils rating, Gage & Others (1960) also found that teachers with less than 5 years of service tend to be rated lower than teachers with more than 8 years of service. Confirming findings mentioned above, Erkyhun and Others (1991: 74) have spotted positive correlation between experience and teaching performance thereby concluding the higher the service years teachers have, the better the performance they could have in teaching and lesson planning.

Bergman and Others (1976), however found that 57% of their sample beginning teachers reported that they changed their initial student focused teaching to a more traditional instructional model (teacher-focused model). This illustrates the negative aspect of more years of service because the shift it has caused, i.e., from student-centered teaching to teacher-centered teaching is pedagogically unsound. Relapsing to a teacher-Centered model is undesirable in that, according to Amare (1996: 94 & 95), it undermines active involvement of pupils and reduces application of media materials to the state of "teaching aids". Moreover, it was observed that beginning teachers undergo behavioral changes when their experience in teaching continues and one of such changes is seen to be change in teaching contrary to one's own belief because of external pressure (Veenman, 1984: 144). This kind of change

is unsound in the sense that it erodes the teacher's self-confidence in handling instructional activities in accordance with practical classroom situations he/she practically encounters.

On the other hand, in some education literature discussing efficiency in teaching, a number of authors tend to argue that more years of service in teaching is neutral to instructional performance. Writers in this category attempt to indicate that many years of experience by itself does not necessarily effect fruitful teaching. For instance, according to Johnston (1994: 205 & 206) it is not experience alone that matters but the thought and subsequent action associated with it determines its value on learning more to teach. He further argues one should not assume that all experience equals educative experience and that the more the experience the better. Borich (1988: 3) maintains the same view stating the corospondance of data such as more years of teaching to actual teacher's performance in classroom generally has been low and non-significant.

In general, from the foregoing literature, it appears that the assumption experience in teaching will bring about effectiveness in instructional performance is equivocal. However, it is undeniable that experience encountered through years of service, provided that the experiences are actively processed and internalized by teachers, could contribute to improve classroom performance. This may also hold true

regarding the relationship between experience in teaching and teaching material utilization as well as use of SPCs because they are part of classroom performance.

#### **2.4.2 Attitude Towards Teaching**

The attitude of teachers towards their profession is believed to be an important factor that influences teaching effectiveness. Among practitioners dealt with the issue, Brimer and Pauli (1971: 92) have emphasized that attitude towards teaching affects instructional performance. However, as disclosed by Tekeste (1990: 26), most of the teachers in Ethiopia do not join the profession enthusiastically and this indicates they reflect negative attitude towards teaching. Tadesse (1974: 92) has revealed that two out of three teachers expressed dissatisfaction with teaching. In ERGESE too, out of 2,276 primary school teachers included in the study only 547(24.03%) responded that they joined T.T.Is out of their interest and out of 3,175 teachers of the same group 1,247(39.28%) reacted they want to leave the profession (MOE, 1978 E.C.: 106).

Undoubtedly, such undesirable attitude (disliking) towards teaching has negative repercussion on commitment of teachers in improving classroom performance and thereby may retard their effort in utilizing instructional materials as well as using SPCs. This is confirmed by research evidences. To mention some, Belayneh (1991; 74 & 75) has found out that

teachers do not have positive attitude towards SPCs and, therefore, under used them. Erkyhun & Others (1991: 49) have also reported that teachers with high level of attitude towards teaching were found showing better mean score than those with low attitude in production of teaching aids, in borrowing teaching aids and in directors' judgement of teachers' utilization of teaching aids.

In order to overcome the negative effect of teachers tendency in disliking their profession, Aklilu (1967: 38) reminds us that the declined status of teachers ought to be given attention. To this end, first, finding out the causes for the disliking seems indispensable. In this regard, in ERGESE, among six factors of teachers' dissatisfaction listed, it has been reported that low social prestige and lack of growth in rank were ranked first (MOE, 1978 E.C.: 107) while in Aklilu (1967: 34) financial (economic) factors were at the top. Hence, low pay and low social prestige were seen to be the most important reasons for teachers discontentment.

To the contrary, there are also practitioners who deny the effect of attitude on teachers' performance. For instance, research by Walbarg (1986) and Jackson (1968) generally showed the correspondence between attitude and teaching performance is non-significant.

### 2.4.3 Teachers' Qualification (Level of Training)

Other than experience and attitude, teachers' qualification, as indicator of the quality and quantity of training received, has remained to have a telling effect on effective instructional performance. In line with this, UNESCO (1966) has stressed that "advance in education depends largely on the qualification and ability of teaching staff..." Similarly, Farrant (1980) has stated that teachers with little or no training (not properly qualified) often tends to use authoritarian and insufficient methods. Furthermore, a study by Good and Brophy (1987: 43) has traced teachers often engaging in inefficient instructional behaviour either without awareness of the behaviour or its effect; and one of the major factors limiting teachers' awareness was found to be deficiency in training programs.

With regard to deficient teacher training programs, in the Ethiopian context, it has been pointed out that the one year preservice training program for primary school teachers is insufficient and should be increased by one year. In addition, for the same reason, the professional components of secondary teacher training courses was recommended to be increased from the existed 14% to the internationally accepted 30%.

Such inadequate training duration and low credit in professional courses will seldom equip teachers with specific skills in classroom instruction including techniques in

teaching material utilization. Concerning this issue, Erkyhun & Others (1991: 83), based on responses received from sample teachers and T.T.I. instructors, have stated that the T.T.I. training program is defective in preparing trainees in aspects like production of teaching aids. Confirming the point, Fantu (1992: 45 & 56) has shown that most of his sample teachers lacked know-how of preparation and application of teaching materials and 60% of them never had seminars or workshops on the subject.

Moreover, opposed to views reviewed above, there are a few authors who contend that qualification (training) is less important in determining the quality of teaching. For example, Symonds (1954: 83) reported that his investigation result suggests that teaching is essentially an expression of personality and, therefore, methods and procedures learned during college preparations may influence teaching only superficially.

## **2.5 School Characteristics: Factors Influencing Teaching Effectiveness**

Parallel to teacher characteristics, school characteristics have their own influence on teaching performance. School characteristics comprise multiple of variables including administrative structure, curricular, exam system, medium of instruction, material supply, school location, etc. (Makau, 1986: 9). Nevertheless, only

literature on the last two factors (relevant to this paper) are dealt with in this study.

### **2.5.1 Material Supply**

According to Humphreys (1970) there is a widely agreed assumption that schools with better facilities and materials that facilitate the instructional process are possibly more efficient than others without. In a similar sense, material inputs necessary for preparing and applying teaching aids seem to affect the magnitude of teaching material utilization. Nevertheless, some scholars in the field tend to have reservation on the generalization that the more the material supply the higher the utilization of teaching materials and viceversa. For instance, Amare (1995: 5), based on what he has studied from various short papers written by Addis Ababa University students, reveals that several teachers teaching in schools having less problems of instructional technology and material supply are observed not using teaching materials in most cases; and teachers teaching in schools having intense problems of supplies are seen reasonably employing teaching materials. And from this he concluded that teachers do not necessarily show good performance in preparing and using instructional media only because they are provided with all facilities and materials required. However, proper material supply, coupled with teachers commitment to properly use the

materials, could enhance utilization of instructional materials.

### 2.5.2 School Location

Regarding school location, Thomas (1975) underlined that urban-rural disparity could have something with discrepancies between schools in terms of their efficiency. From experience, it appears that urban schools in Ethiopia have better exposure as well as more access to variety of materials, technologies (particularly the commercial ones) and this might put them in a better position concerning the use of teaching materials.

In addition, when seen from the point of view of teachers professional upgrading, those who are in the urban appears to have better chance to inservice training programs due to various reasons (such as more service years). To make the point concrete, according to MOE (1978 E.C.: 99) it was found out that out of 1,859 teachers who completed grade 12 or one-year-college and received initial training, 1,340 (72%) did not undergo any sort of professional upgrading and the distribution was seen to be 31.7% in Addis Ababa, 75% in capital of the regions (by then), 80.4% in the capital of the districts (Woredas) and 85.8% at the level of peasant associations. It means that lack of professional upgrading increases as one goes from the urban to the rural. This may have negative impact on teachers in rural schools in terms of

acquiring recent innovations in teaching including the use of teaching materials and SPCs.

On the other side, authors like Elizabeth (1967: 284 & 285) explains effect of school location on teaching performance in terms of teacher career satisfaction. She argues that feeling of career satisfaction is higher in small districts and small school teachers than in teachers in large districts and large schools. This could imply that rural teachers are expected to be making more effort towards better performance than teachers in urban schools.

To sum up, from what has been reviewed so far, in general terms, it appears that the quality and efficiency in teachers' performance, including the utilization of instructional materials and use of SPCs, diminish along with unfavourable teacher and school characteristics such as experience, attitude, qualification, material supply, school location, etc.

## **CHAPTER THREE**

### **DESIGN OF THE STUDY**

#### **3.1 Subjects**

The target population of the study is all primary schools in Nekemte town and its suburb. It consisted of 602 teachers (359 males & 243 females) in seven urban and nine rural schools. Out of the 602, 184 teachers (112 males & 72 females) were randomly selected from four urban & four rural schools.

About 35 percent (64 in number) of the sample was further selected for a classroom observation. In addition, eight directors and eight SPC coordinators (one each from the sample schools) were chosen to be interviewed.

Selection of members of the major and the classroom observation sample groups were distributed into four successive strata of service years (1-3 and 4-5 for the less experienced group and 6-15 and above 15 for the more experienced group). To this end, stratified random sampling technique was employed. The stratification also secured sex, qualification and urban-rural proportion.

#### **3.2 Variables Included**

In this study, two major independent variables (with five sub variables) and two dependent variables were considered. These variables are enumerated below.

**A) The Independent Variables**

- a) Teacher Characteristics
  - i) teachers' experience (in years of service)
  - ii) teachers' qualification (T.T.I. and Diploma)
  - iii) teachers' attitude (towards their profession)
- b) School Characteristics
  - i) School location (urban-rural)
  - ii) Material and financial supply

**B) The Dependent Variables**

- a) Teaching materials application (in terms of frequency of teaching materials applied)
- b) Use of SPCs (in terms of numbers of visits made and materials borrowed).

**3.3 Instruments of Data Collection**

A questionnaire, observation check-list and unstructured interview were the instruments employed for collecting data pertinent to the objectives of the study.

**A) Questionnaire**

The questionnaire encompassed items on:-

- a) respondents personal data, i.e., age, sex, experience, qualification, program of training, teaching load, etc.
- b) the ratings of teaching material application and extent of using SPCs, and the degree of material and financial provisions.
- c) teachers attitude towards their profession.
- d) list of possible factors that are thought to be causes for hindering proper application of teaching materials and use of SPCs.

The part on attitude contained statements of attitudinal suggestions structured on the basis of Likert's five-point scale with possible scores ranging between "1" (for the lowest response) and "5" (for the highest response). The assignment of the scores were reversed when the idea contradicting with the construct is treated. Care was also taken in including balanced number of positively and negatively stated statements.

#### **B) Classroom Observation Check-list**

The observation check-list was employed to secure data about teacher performance in the actual classroom situation and thereby to compare its result with the corresponding questionnaire findings. In a similar manner to the questionnaire, the check-list comprised personal data of the

observed and a main part where data regarding frequency, source, relevance, adequacy, size, etc. of teaching materials brought to the classrooms are checked.

### **C) Interview**

An interview containing open-ended questions was used to obtain information related to the data received through a questionnaire and a classroom observation. It concentrated on extracting directors' and SPC coordinators' general views regarding issues pertaining to the magnitude of teachers' interest, practice and problems in preparing, borrowing as well as using teaching materials and SPCs in reference to their experience and qualification.

### **3.4 Sources of Data Instruments**

Except some of the items on teachers attitude towards their profession taken from teachers self-report scale used by Abraham (1993), the questionnaire and the classroom observation check list applied in this study were constructed by the investigator; largely depending on the basic issues the research intended to deal with and on major themes of the related literature reviewed. It was so because ready-made or tried-out instruments relevant to the variables under consideration could not be within reach.

### 3.5 Procedure

In the process of testing and using the instruments for the final study, the following steps were taken.

- a) The questionnaire, the observation check-list and the interview questions were translated from English to "Oromiffa" by an expert of the language. This was done to minimize the problem of comprehending the items, when responding, due to language barrier.
- b) The questionnaire and observation check-list were judged for their validity by five graduates (three in curriculum and Instruction, two in Psychology). The judges were requested to rate the relevance of each item against what the study aimed at to prove by indicating one of the alternatives in the five-point scale ranging from 5 (for "strongly agree") to 1 (for "strongly disagree"). Finally, items which received an average score below 3 were determined to be ineffective and therefore discarded. In this regard, four items (items number 12 and number 11 from the questionnaire and items number 5 and number 7 from the observation check-list) were omitted (Refer to Appendix - C1). Before omitting the items, reliability of the judges' ratings was computed and found to be 0.99 for the questionnaire and 0.98 for the observation check-list (Refer to Appendix - C2).

- c) After the screening of the items, both instruments were pilot-tested in Alemgena Primary and Junior Secondary School which is located in Sebeta Woreda (Southern outskirts of Addis Ababa). Based on the pilot test results, reliability coefficients were calculated using the split-half formula (Spearman Brown) for the questionnaire and correlation coefficient ( $r$ ) for the check-list (Ebel, 1965: 267 & 315). The obtained reliability indices were 0.90 and 0.88 respectively (Refer to Appendices - D1, D2 and E1 - E8).
- d) In the final study, the questionnaire was administered in face-to-face situation in order to avoid refusals and clarify points if additional explanations regarding how to respond are required.
- e) For the classroom observations, three assistants were recruited. One of the assistants had diploma and 12 years of experience in teaching. The other two were primary school teachers with eight and four years of service. All the assistants were given detailed orientation on how to use the check-list and have practised in two sessions (periods) each. Finally, each assistant, under the strict supervision of the investigator, conducted the observation. Observation schedule indicating the teacher, the subject, the ~~period~~, the grade and

section each assistant was supposed to handle was prepared and provided ahead of the observation. The subject and grade level in which a randomly selected teacher was observed were determined using purposive sampling technique in order to follow the already set time-table of each school.

- f) To get access to the classrooms, letter of co-operation from Zone Education Office to the eight sample schools was obtained.

### **3.6 Method of Data Analysis**

Results obtained were sorted out and tallied. Scores and frequency numbers were accordingly assigned. Then:

- a) t-test was employed for determining the significance level of the differences obtained from questionnaire scores between less and more experienced, and T.T.I and diploma, group of teachers regarding extent of their attitude on teaching profession.
- b) Pearson's product moment correlation coefficient ( $r$ ) was computed to examine the magnitude of association of teachers' attitude scores and material-financial provision scores with ratings on teaching material application and use of SPCs. Furthermore, the obtained  $r$  was converted to  $r^2$  (coefficient of determination) to find out the proportion

(percentage) of the variance between these variables.

- c) Chi-square tests were carried out to determine whether or not the teaching material application and use of SPC observed in the actual classroom significantly differ.
- d) Mean scores and percentage expressions were also used to show and discuss the details of the direction and weight of both the significant and non-significant relationships observed.
- e) The level of significance, in all cases, were tested at  $p < 0.05$ .

## CHAPTER FOUR

### PRESENTATION AND ANALYSIS OF DATA

This part of the study deals with description of respondents profiles followed by presentation and analysis of the results obtained through questionnaire and classroom observations.

#### 4.1 Respondents Profile

The questionnaire was distributed to 184 sample teachers divided into different strata that the study required. Out of the distributed 184 questionnaire, 19 were not returned and seven of the returned were found to be incomplete and therefore discarded. Thus, responses from 158 teachers (86% of the distributed) were finally used in this study. The distribution of the 158 responses on the basis of different profiles is as follows.

TABLE 1

## Distribution of Teachers Responses to the Questionnaire

Years of Services		Urban School Teachers				Rural School Teachers				Total	
		T.T.I		12 + 1 & Diploma		T.T.I		12+1 & Diploma		No	%
		M	F	M	F	M	F	M	F		
Less Experienced	1-3 Years	5	2	2	2	6	4	2	1	24	15.19
	4-5 Years	6	4	4	2	6	3	4	2	31	19.62
More Experienced	6-15 Years	10	7	8	4	5	7	7	4	52	32.91
	16 & above Years	10	8	7	4	7	7	5	3	51	32.28
Total	No	31	21	21	12	24	21	18	10	158	
	%	18.62	13.29	13.29	7.62	15.19	13.29	11.39	6.33		100

As depicted in Table 1, 85 (53.8%) of the responses are from urban school teachers while the other 73 (46.2%) are from the rural schools. Out of the 85 respondents from the urban schools, 52 (32.91%) are males and 33 (20.89%) are females. Besides, 27 (17.09%) of the urban respondents have five and below years of services while those with six and above years of services are 58 (36.71%). In terms of qualification, the T.T.Is are 52 (32.91%) whereas the other 33 (20.89%) are 12 + 1 and diploma owners.

On the other hand, out of the 73 rural school respondents, 42 (26.58%) are males and 31 (19.62%) are females. Furthermore, 28 (17.72%) of the rural school

respondents have five and below years of services while those with six and above years of services are 45 (28.48%). In line with qualification, the T.T.Is are 45 (28.48%) whereas the rest 28 (17.72%) are 12 + 1 and diploma owners.

According to the distribution described above, the overall respondents with five and below years of teaching service (the less experienced) are 55 (34.81%) and this is far less than the total number of teachers with six and above years of services (103 = 65.19%). Similarly, diploma holders together with 12+1 teachers (61=38.61%) are less than teachers having T.T.I certificate (97 = 61.39%). In addition, total female respondents comprise 64(40.5%) while the males are 94 (59.5%)

This imbalance in the distribution of service years, qualification and gender was because of the attempt made to realize the proportions observed in the population.

#### **4.2 Presentation and Analysis**

Questionnaire results from 158 respondents and 126 classroom observations (63 teachers, each observed two times - Appendix G) were finally processed and presented in the form of tables. Each table is followed by description, analysis and interpretation pertinent to the basic questions the study aimed at to answer.

TABLE 2

Extent of Teaching Material  
Application & SPC Use In Service Years

		F R E Q U E N C I E S				
		Teachers with 1-5 Service Years		Teachers with 6 & above Service years		$\chi^2$
		No	%	No	%	
Teaching Materials Applied	Yes	52	81.25	23	37.1	40.342*
	No	12	18.75	39	62.9	
Teaching Materials Borrowed from SPC		36	69.23	16	30.77	14.792*

\*  $P < .05$

As has been depicted in Table 2, in comparing the differences between teachers with 1-5 years of service with those with 6 & above year of services, the chi-square obtained for extent of teaching material application and SPC use are 40.342 and 14.792 respectively (Appendix - H). Both the computed Chi-square values are by far grater than the critical Chi-square value ( $\chi^2$ ; 0.05 = 3.841). Hence, there is significant difference in the frequency of teaching material

application and SPC use between group of teachers with less and more experience.

From the figures, it is observed that teachers with less years of experience (1-5 years) have applied teaching materials in 81.25 percent of their lessons observed; and 69.23 percent of the materials they used have been borrowed from SPCs. On the other hand, teachers with more years of experience (6 & above years) have used teaching materials in 37.1 percent of their observed lessons; and 30.77 percent of what they applied were from SPCs. This indicates teachers having less experience are better than teachers with more experience in applying and borrowing more numbers of teaching materials.

Most educators agree that experience in teaching has positive relationship with teaching effectiveness. For example, Borko & Butcher (1984) have shown that lower level of teaching performance is often seen with less experienced teachers than in those more experienced. In the same way, experience in teaching is expected to have positive contribution to extent of teaching material and SPC use. Furthermore, Adam and Martry (1981) have stated that instruction related tasks increase with experience.

However, the results in Table 2 have shown to the contrary. Nevertheless, the less performance of the more experienced teachers observed may not necessarily mean that experience by itself has negatively affected teaching material

application and SPC use. Because, there could be various other factors that have intervened the usual (positive) contribution of experience. For instance, factors such as economic problem, promotion and transfer procedures, status of the profession, opportunity to qualification, up-grading, etc. might have had a role in changing the direction and weight of effect of experience on performance in teaching material application and SPC use.

Hence, without examining the influence of these factors in interfering with the function of experience, to conclude that "experience affects teaching material application negatively" seems inappropriate.

TABLE 3

Extent of Teaching Material  
Application & SPC Use in Qualification

		F R E Q U E N C I E S				
		T.T.I Certificate Owners		12 + 1 & Diploma Owners		X <sup>2</sup>
		No	%	No	%	
Teaching Materials Applied	Yes	43	67.19	32	51.61	5.034*
	No	21	32.81	30	48.39	
Teaching Materials Borrowed from SPC		30	57.69	22	42.31	2.366

\* P < .05

Table 3 shows the level of teaching material application and SPC use in terms of qualification. In this regard, the chi-square calculated to compare differences between teachers with T.T.I certificate and teachers with diploma (including one-year college) are 5.034 for teaching material application and 2.366 for SPC use (Appendix -H). Comparing the figures with the critical chi-square value ( $X^2$ , 0.05 = 3.841), one can see that there is statistically significant difference in the application of teaching materials while the difference in SPC use is not significant.

As can be seen from the Table, the direction and weight of the difference indicates T.T.I. teachers have used teaching materials in 67.19 percent of their lessons observed while it is 51.61 percent for teachers with diploma and one year college education. Hence, teachers with less qualification are better than the more qualified in applying more number of teaching materials. Though the result is unexpected, it is believable when considered from the point of view of some authors. For example Simmon and Alexander (1980) give less importance to qualification arguing that teachers enthusiasm, sense of responsibility and potential is more important than their qualification. And the T.T.I. teachers may have had these qualities more than the diploma owning teachers. Besides, when responding to the interview, five of the eight sample school directors have indicated the T.T.I teacher come to school during their free time more frequently than the diploma owners not only to work in the SPCs but also to help in extra - curricular activities organized in the schools.

On the other hand, there is a possibility that the observed more performance of the TTIs than the diploma owners could be because of differences in applicability level of instructional media courses the institutes offer. That is, the knowledge and skills provided by the T.T.Is may have been more practical to the actual school situations than that of the diploma offering institutes.

TABLE 4

Extent of Teaching Material  
Application & SPC Use in School Location

		F R E Q U E N C I E S					$\chi^2$
		Urban School Teachers		Rural School Teachers			
		No	%	No	%		
Teaching Materials Applied	Yes	39	60.94	32	51.61	1.77	
	No	25	39.06	30	48.39		
Teaching Materials Borrowed from SPC		25	48.08	27	51.92	0.148	

Table 4 has included the finding on teaching material and SPC used in terms of school location. As shown in the table, teachers in the urban schools have employed teaching materials in 60.94 percent of their lessons observed and 48.08 percent of the materials employed are from SPCs. Teachers in the rural schools have used teaching materials in 51.61 percent of the lessons observed and 51.92 percent of the materials are those borrowed from SPCs. The computed chi-square to determine the level of the differences within these figures were 1.77 for teaching material application and 0.148 for SPC use (Appendix - H). Both values are less than the critical chi-square value ( $\chi^2$ , 0.05 = 3.841) and therefore not

significant. Hence, there are no statistically valid differences between teachers in urban and rural schools with regard to the extent of teaching material application and SPC use.

As observed during the data collection, most of the teaching materials available in urban and rural SPCs are very similar in that most of them are locally produced from local materials. Commercially obtained instructional aids appear to be equally rare in both urban and rural schools. The only difference noticed in this regard is the availability of TV in the urban schools while it is missing in the rural ones (mostly due to lack of power source). Besides, equipment used in the urban and rural schools are similarly poor (only with few hand-tools). According to the directors' and SPC co-ordinators responses to interview questions, both urban and rural schools are in short of financial provision, material supply and trained co-ordinators. Hence, the assumption that urban schools have better exposure as well as access to variety of materials, technologies, commercially obtained items, etc. and therefore in a better position than the rural schools (Adane, 1993: 70) could not hold true.

Hence, observed similarities between the urban and rural schools in: the materials they produce, the tools they use, the financial and man power shortage they encounter, etc. may have made the differences between these groups of teachers in applying teaching materials and using SPCs not significant.

T A B L E 5

The Impact of Attitude on Teaching Material  
Application & SPC Use

	Correlation Coefficient (r)	Coefficient of Determination ( $r^2$ )
Attitude and teaching materials	.6351*	0.40 (40%)
Attitude and SPC use	.6805*	0.46 (46%)

\*P < .05

A close observation of Table 5 indicates, attitude towards teaching is significantly correlated with teaching material application ( $r = .6351$ ) and with the use of SPCs ( $r = .6805$ ). In both cases, the magnitude of relationship is observed to be positive and "High" (Darlington, 1987: 107).

Moreover, from the calculated corresponding coefficients of determination ( $r^2$ ), it is revealed that the proportions of the associations observed are 40 percent between attitude and teaching material application and 46 percent between attitude and SPC use. This could respectively mean about 40 and 46 percent of the variations among teachers in their use of

teaching material and SPC are accounted for their differences in attitude towards teaching. Hence, it could be stated that attitude towards teaching positively affects the efficiency in utilization of instructional materials and SPCs.

It was also seen that this result is consistent with findings of some other researches conducted on attitude. For instance, as discussed in detail in the review part, Erkyhun and Others (1991) have reported teachers with high level of attitude towards teaching showed better performance in producing and borrowing teaching materials than those with low attitude.

Based on the finding that attitude towards teaching considerably influenced performance in teaching materials and SPC use, the investigator was interested in examining if there were attitude differences between teachers in terms of service years and qualification and whether or not these differences were significant enough to contribute to their performance differences already observed in Tables 2-4. To this end, the following table was constructed.

**TABLE 6**  
**Differences Between Teachers in Their**  
**Attitude Towards Teaching**

	V A R I A B L E S			
	Service Years		Qualification	
	1-5 Years	6 & above years	T.T.I	12+1 & Diploma
$n_1$	55	-	97	-
$n_2$	-	103	-	61
$\bar{X}_1$	33.073	-	27.2577	-
$\bar{X}_2$	-	21.689	-	24.4098
$S_1^2$	33.377	-	78.5159	-
$S_2^2$	-	49.923	-	63.2910
t-calculated	10.25*		2.05*	
t-critical	1.98		1.98	

\*  $P < .05$

As shown in Table 6, differences in attitude mean scores were observed between service year and qualification groups. The group of teachers having 1-5 years of service have

received greater mean score (33.073 or 73.5%) than those with 6 and above years of service (21.689 or 48.2%). T-test was computed to determine whether the difference is substantial or not. The calculated t-value (10.25) was then far greater than the t-critical ( $t = 1.98$ ;  $P < 0.05$ ) and therefore the difference examined is quite significant. Thus, the result shows the less experienced group of teachers have more (better) positive attitude towards teaching than the more experienced.

According to this result, it seems that the teachers shifted from more favourable to less favourable attitude towards teaching in the course of time (service years). Though the study did not include investigation of the actual causes for this inverse relationship, it may be attributed to teachers' discontentedness due to reasons such as: low payment (Aklilu, 1967), low social prestige, lack of growth in rank (MOE, 1978 E.C.), limited access to inservice training, etc.

One could argue that the magnitude of the effect of the above listed possible factors for dissatisfaction may be low on beginning (less experienced) teachers than on teachers with more service years. Since the less experienced are exposed to the factors relatively for shorter period of time, they may not have affected much the positive attitude they originally had.

On the other hand, teachers with more years of experience might have kept on losing their original professional

dedication part by part as they move through the ups and downs of teaching and encounter more and more of the affecting factors for many years finally shifting their attitude from more favourable to less favourable.

Nevertheless, from the result, one could trace the connections that attitude has a substantial effect on application of teaching materials and SPC use (Table 5) and more experienced teachers, for some reasons, have reflected less favourable attitude than the less experienced group (Table 6), and this unfavourable attitude, along with other unexplained factors, might have contributed in making them perform less than their counter parts (Table 2).

Similarly, with regard to qualification, from the scores in Table 6, it is seen that the T.T.I group of teachers have earned greater attitude mean score (27.2577 or 60.57%) than their diploma counter parts (24.4098 or 54.24%). The t-test computed for these mean scores was 2.05. This is greater than the t-critical ( $t = 1.98$ ;  $P < 0.05$ ) and therefore the difference is significant. Thus, from the result, it is evident that the less qualified group of teachers have more (better) positive attitude towards teaching than the more qualified ones.

A look at some literature on teachers attitude towards their profession reveals that there are findings similar to the result above (Table 6). For example, Cohen (1967), after investigating teachers' career satisfaction, reported that

feeling of career satisfaction is higher in teachers without degrees than in those with degrees.

However, the observed less positive attitude of more qualified teachers appears to have contributed to the significantly less performance they showed than their T.T.I counter groups (Table 3).

**TABLE 7**

The Impact of Material-Financial Supply on  
Teaching Material Application & SPC Use

	Correlation Coefficient (r)	Coefficient of Determination ( $r^2$ )
Material - financial supply with Teaching material application	.3853*	0.15 (15%)
Material - financial supply with SPC use	.4054*	0.16 (16%)

\*P < .05

Table 7 indicates the correlation coefficient and coefficient of determination computed to find out how far material - financial supply is related to teaching material application and SPC use.

The calculated correlation coefficients were .3853 between material - financial supply and teaching material application, and .4054 between financial-material supply and SPC use. Both values are positive and significant. However, in both cases, the magnitude of relationships they indicate is "Low".

Furthermore, from the calculated corresponding coefficient of determination ( $r^2$ ) in Table 7, it is revealed that the proportion of the associations observed are 0.15 (15%) between material - financial supply and teaching material application; and 0.16 (16%) between material - financial supply and SPC use. This could mean, respectively, only about 15 and 16 percent of the variations among teachers in their use of teaching materials and SPC are accounted for (because of) the amount of material and finance their schools have provided for this purpose.

Hence, based on the result, one may observe that better supply of materials and finance do not compel more application of teaching material and more use of SPC by teachers; and less

supply of material and finance do not persuade teachers to apply less instructional materials and less use of SPC.

This might have happened because those groups of teachers observed making better application of teaching materials and SPCs (the less experienced and the less qualified), when they did not find ample material and finance may have resorted to: prepare their own aids from their own purse, borrow from different sources in the community, collect objects that do not require much money, etc. On the other hand, those group of teachers seen with less use of teaching materials and SPCs (the more experienced and the more qualified) may have excluded the above mentioned options and showed poor effort even when there is sufficient material and financial provision (perhaps due to some or all of the suspected sources of dissatisfaction discussed in the preceding parts).

There are research findings supporting the above assumption. For instance, Amare (1995) disclosed that, in Addis Ababa, some teachers teaching in schools having intense problems of instructional technology were seen reasonably employing teaching materials from other means while some teachers in schools with less problems of instructional technology were observed mostly not using teaching materials.

Hence, from the result, it does not mean that material - financial provision is not necessary for better application of

teaching materials and SPCs. It could rather mean shortages in materials and finance do not necessarily hinder teachers from fair use of instructional aids and SPCs as far as they are dedicated to do so. And from the other side, it could also mean, ample material - financial supply does not necessarily ensure the better application of teaching materials and SPCs unless teachers are determined to do so.

# CHAPTER FIVE

## SUMMARY, CONCLUSION

### AND RECOMMENDATIONS

#### 5.1 Summary

The purpose of this study was to investigate the effect of some of the teacher and the school characteristics on the application of teaching materials and the use of School Pedagogical Centers (SPCs) in selected primary schools in Nekemte and its suburbs. In line with the purpose, the following basic questions were raised.

1. Do teacher characteristics, particularly: teachers' experience in teaching, teachers' qualification and attitude towards teaching significantly affect the application of teaching materials and the use of SPCs?
2. Do school characteristics, specifically: school location and material-financial supply significantly influence the application of teaching materials and the use of SPCs?

To answer the questions, four urban and four rural schools were randomly selected. Questionnaire, observation check-list and interview were employed to obtain data pertinent to the investigation. The questionnaire was

distributed to 184 teachers chosen using stratified random sampling technique. Besides, 63x2 classroom observations were conducted. Finally, responses from 158 teachers and 126 observations were processed and analyzed. On the basis of the analysis made, the major findings of the study are summarized as follows.

1. The study revealed that the less experienced teachers (with 1-5 years of service) applied significantly more teaching materials (in 81.25% of their lessons observed) than the more experienced teachers (6 and above years of service.) who employed only in 37.1% of their lessons observed. Moreover, the less experienced group made better use of SPCs (69.23%) than the more experienced group (30.77%).
2. Similarly, in terms of qualification, less qualified (T.T.I) teachers were observed to be substantially better in application of teaching materials (67.19%) than the more qualified (12+1 & Diploma) teachers (51.61%)
3. With regard to school location, it was disclosed that there was no significant difference in teaching material application between teachers from the urban and the rural schools (60.94% and 51.61% respectively). In the same way, the difference observed between these two groups

concerning SPC use was not substantial (48.08% for the urban and 51.92% for the rural).

4. In line with the degree of relationship between attitude towards teaching and application of teaching materials as well as use of SPCs, it was found out that attitude significantly, positively and highly correlated with performance in teaching material application and SPC use.

In addition, it was revealed that more experienced and more qualified teachers have demonstrated less favourable attitude towards teaching than the less experienced and less qualified ones.

5. The degree of association between material-financial supply and teaching material application and SPC use was revealed to be low.

## **5.2 Conclusion**

1. Based on the significant difference observed between the less and the more experienced group of teachers, one may conclude that the more the experience in teaching the less the application of teaching materials and SPC use and vice-versa. This suggests that the influence of experience on teaching material application and SPC use is negative. However, there is an indication that this negative effect could be because of other factors responsible for causing discontentment towards the

profession in course of time (e.g low opportunity to in-service training, unfavourable attitude towards teaching, economic problem, etc.) than it is because of the nature of experience itself. From this, it implies that experience do not lead to better performance in teaching material application and SPC use as far as factors responsible for professional dissatisfaction prevail.

2. From the result obtained in terms of qualification, it could be inferred that the more the qualification in teaching the less the application of teaching materials will be. This may suggest that the training given with regards to teaching material application, in terms of its practicality, is more defective in diploma programs than in the T.T.Is.
3. According to differences observed between the rural and the urban schools, it could be concluded that school location is neutral to the extent of teaching material application and SPC use. This seems to imply the assumption that "urban schools have better exposure as well as access to variety of materials, technologies, commercially obtained items, etc. and therefore in better position than the rural schools" does not hold true.
4. Based on the findings on teachers attitude, it is possible to conclude that the more favourable the attitude towards teaching the better the performance in teaching material application and SPC use and the other

way round. Besides, from the result, it could be stated that more favourable attitude is observable during the early years of teaching and it keeps on shifting to less favourable attitude gradually with the increase in experience. These conclusions imply that the less favourable attitude towards teaching demonstrated by the more experienced and the more qualified teachers have contributed to the low application of teaching materials and SPC use they showed.

5. The result also suggested that shortage in material and finance do not necessarily hinder teachers from reasonably using instructional materials and SPCs as far as they are dedicated to do so. From the other side too, it indicates that ample material-financial provision does not necessarily ensure better application of teaching materials and SPC use unless teachers are determined to do so.

### **5.3 Recommendations**

1. The more positive attitude towards teaching reflected by the less experienced teachers than the more experienced ones seem to indicate that there is gradual shift of attitude from more favourable to less favourable. Hence, organizing seminars, workshops, short-term courses, etc. on instruction in general and

teaching materials in particular for teachers having higher service years could help in convincing them to shift their attitude towards their profession to more positive level thereby improving their dedication in making more use of teaching materials & SPCs.

2. Compared to the T.T.Is, the less performance of the diploma owning teachers makes us to question the applicability level of the knowledge and skills the training institutes offer on instructional media. Therefore, it is suggestable that diploma offering institutes may conduction investigation on how far their graduates in schools are employing the knowledge and skills they received on teaching material utilization.
3. The high and positive correlation observed between attitude towards teaching and application of teaching materials and SPC use indicates that favourable attitude promotes teachers' instructional commitment. Hence, the programs of teacher training institutes, beside developing knowledge and skills, ought to be feasible to cause favourable attitude towards the profession and this should be given attention by concerned curriculum makers, instructors and educational administrators.
4. Proper utilization of teaching materials towards instructional effectiveness requires careful and exhaustive investigation of the influencing factors. For

this reason, the study recommends further research with wider scope incorporating other teacher and school characteristics (such as age, gender, personality, professional expectations, curriculum, exam system, etc.) not included here.

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## APPENDIX - A1

ADDIS ABABA UNIVERSITY  
SCHOOL OF GRADUATE STUDIES  
FACULTY OF EDUCATION  
DEPARTMENT OF CURRICULUM AND INSTRUCTION

QUESTIONNAIRE TO BE FILLED BY PRIMARY SCHOOL  
TEACHERS OF NEKEMTE TOWN AND THE SUBURB

The aim of this questionnaire is to collect data for my master thesis requirement. The information you provide will be used only for research purposes. Your response will be kept confidential. You are not also required to write your name.

Therefore, please, be kind enough to spare some of your time to answer all the questions with frank and honest responses.

Thank you for your co-operation!

## PART ONE

**Direction:** Indicate your Choice by Making Tick ("✓") Marks in the Blank Space

1. Your age
 

a) 18-20 years _____	d) 31-35 years _____
b) 21-25 years _____	e) 36-40 years _____
c) 26-30 years _____	f) above 40 years _____
  
2. Your sex
 

a) Male _____	b) Female _____
---------------	-----------------
  
3. Your qualification
 

a) 12 <sup>th</sup> complete _____	e) 12 <sup>th</sup> +3 year college _____
b) 12 <sup>th</sup> + T.T.I _____	f) 1 <sup>st</sup> degree (B.A) _____
c) 12 <sup>th</sup> +1 year college _____	g) other, if any _____
d) Diploma (12 <sup>th</sup> +2 year College _____)	

4. Your years of teaching experience
- |              |       |                |       |
|--------------|-------|----------------|-------|
| a) 1-3 years | _____ | d) 16-25 years | _____ |
| b) 4-5 years | _____ | e) above 25    | _____ |
| c) 6-15 year | _____ |                |       |
5. Program in which you are trained
- |                          |       |
|--------------------------|-------|
| a) Regular (pre-service) | _____ |
| b) In-service            | _____ |
| c) Not trained           | _____ |
6. Location of your school plant
- |   |       |
|---|-------|
| a) Town (with population exceeding 2,000) | _____ |
| b) Rural (with population below 2,000)    | _____ |
7. No. of periods you teach per week in this semester
- |                     |       |                  |       |
|---------------------|-------|------------------|-------|
| a) below 10 periods | _____ | d) 21-25 periods | _____ |
| b) 11-15 periods    | _____ | e) 26-30 periods | _____ |
| c) 16-20 periods    | _____ | f) more than 30  | _____ |
8. No of shifts you teach
- |        |       |        |       |
|--------|-------|--------|-------|
| a) One | _____ | b) Two | _____ |
|--------|-------|--------|-------|
9. Does the School have a pedagogical center?
- |        |       |       |       |
|--------|-------|-------|-------|
| a) Yes | _____ | b) No | _____ |
|--------|-------|-------|-------|
10. Name of the school \_\_\_\_\_

## PART TWO

**Direction:** Give your Response by Making the Mark "✓" in the Blank Space Corresponding to Your Choice.

1. How frequently do you use teaching materials (graphic, models, objects, radio, tape recorder, video, TV., Print materials, etc.) in your lessons?
  - a) in every lesson \_\_\_\_\_
  - b) in most of the lessons \_\_\_\_\_
  - c) in some of the lessons \_\_\_\_\_
  - d) as and when needed \_\_\_\_\_
  - e) not at all \_\_\_\_\_
  
2. How do you rate the extent to which you use teaching materials in your lessons?
  - a) very high \_\_\_\_\_
  - b) high \_\_\_\_\_
  - c) medium \_\_\_\_\_
  - d) low \_\_\_\_\_
  - e) very low \_\_\_\_\_
  
3. How often do you prepare your own teaching materials for your lessons?
  - a) every time \_\_\_\_\_
  - b) most of the time \_\_\_\_\_
  - c) sometimes \_\_\_\_\_
  - d) as and when needed \_\_\_\_\_
  - e) not at all \_\_\_\_\_
  
4. How do you rate the frequency to which you prepare your own teaching materials?
  - a) very high \_\_\_\_\_
  - b) high \_\_\_\_\_
  - c) medium \_\_\_\_\_
  - d) low \_\_\_\_\_
  - e) very low \_\_\_\_\_
  
5. How often do you visit (work in) School Pedagogical Center (SPC) to prepare teaching materials?
  - a) every time \_\_\_\_\_
  - b) most of the time \_\_\_\_\_
  - c) sometimes \_\_\_\_\_
  - d) not at all \_\_\_\_\_

6. How do you rate the frequency to which you borrow and prepare teaching materials from (in) SPC for your lessons?
- |              |       |             |       |
|--------------|-------|-------------|-------|
| a) very high | _____ | d) low      | _____ |
| b) high      | _____ | e) very low | _____ |
| c) medium    | _____ |             |       |
7. How often do you visit SPC for the purpose of obtaining or borrowing teaching materials?
- |                              |       |
|------------------------------|-------|
| a) more than once-a-week     | _____ |
| b) once-a-week               | _____ |
| c) once in two weeks         | _____ |
| d) Once in three weeks       | _____ |
| e) once in a month           | _____ |
| f) less than once in a month | _____ |
| g) if any other, specify     | _____ |
8. Have you received a training (a course) on how to prepare and apply teaching Matirials when you were in the training program?
- |        |       |       |       |
|--------|-------|-------|-------|
| a) Yes | _____ | B) NO | _____ |
|--------|-------|-------|-------|
9. If your answer to question No. 8 (above) is "Yes", how do you assess the relevance and adequacy of the training in enabling you to prepare and apply teaching materials?
- |              |       |             |       |
|--------------|-------|-------------|-------|
| a) very high | _____ | d) low      | _____ |
| b) high      | _____ | e) very low | _____ |
| c) low       | _____ |             |       |
10. The provision of (raw) materials for producing teaching materials in your school is
- |              |       |             |       |
|--------------|-------|-------------|-------|
| a) very high | _____ | d) low      | _____ |
| b) high      | _____ | e) very low | _____ |
| c) medium    | _____ |             |       |

11. How do you evaluate the financial support provided in your school for producing and applying teaching materials?
- |              |       |             |       |
|--------------|-------|-------------|-------|
| a) very high | _____ | d) low      | _____ |
| b) high      | _____ | e) very low | _____ |
| c) medium    | _____ |             |       |
12. Your cooperation with the school pedagogical center coordinator in producing teaching materials is
- |              |       |             |       |
|--------------|-------|-------------|-------|
| a) very high | _____ | d) low      | _____ |
| b) high      | _____ | e) very low | _____ |
| c) medium    | _____ |             |       |
13. Have you ever received workshop or seminar on teaching material production and application?
- |        |       |       |       |
|--------|-------|-------|-------|
| a) Yes | _____ | b) No | _____ |
|--------|-------|-------|-------|

**PART THREE**

**Direction:** Below are statements of Attitudinal Suggestions Towards Teaching. Read Each of the Items and Indicate Your Choice by Making the Mark "✓" in the Box you find Representing your Actual Feeling.

No	Attitudinal Suggestions	A L T E R N A T I V E S				
		Strongly Agree	Agree	Un-decided	Dis-Agree	Strongly Dis-Agree
1	You joined the teaching profession because you like it.					
2	If you were given the chance to choose your occupation you could not have chosen teaching as your profession					
3	A teacher should give up his/her profession because people look down on teaching.					
4	The status of teaching profession is still declining.					
5	Teachers are one of the highly respected professionals by the society.					
6	The working conditions at schools are very healthy and thus is motivating teachers to be committed to the profession					
7	Teaching is discouraging because proper incentives for better performance is missing					
8	A teacher feels personal satisfaction for being involved in a profession considered as the basis for national development					
9	The recently introduced salary scale has made teaching one of the fairly paid professions					

## PART FOUR

**Direction:** Below is a list of possible factors hindering utilization of teaching materials and use of School Pedagogical Centers. Based on your experience, rank the factors according to their weight marking the most hindering 1<sup>st</sup> and the least hindering last.

Hindering Factors	R A N K	
	Utilization of Teaching Materials	Use of School Pedagogical Centers
- lack of know-how (training)		
- lack of interest		
- lack of time		
- lack of Financial & Material Support		
- lack of Administrative Cooperation		

## APPENDIX A2

ADDIS ABABA UNIVERSITY  
 SCHOOL OF GRADUATE STUDIES  
 FACULTY OF EDUCATION  
 DEPARTMENT OF CURRICULUM AND INSTRUCTION

OBSERVATION CHECK-LIST FOR UTILIZATION OF TEACHING  
 MATERIALS AND USE OF SCHOOL PEDAGOGICAL CENTER

## Direction:

- a) Complete the information at the Top of the Check-list Before Beginning the Observation.
- b) For Items 1-3 Indicate the Presence or Absence of the Points Mentioned in the Check-list by Ticking the Mark "✓" in the "Yes" or "No" Column.
- c) For Items 4-7 Indicate what you have Observed by Ticking the Blank Space of the Alternative Corresponding to your observation.
- d) Do not Write the Name of the Observed Teacher

## 1. The School:

- a) Name \_\_\_\_\_
- b) Location: Urban (with population exceeding 2000) \_\_\_\_\_  
 Rural (with population below 2000) \_\_\_\_\_

## 2. Biodata of the teacher to be observed:

- a) Sex: Male \_\_\_\_\_  
 Female \_\_\_\_\_
- b) Years of experience in teaching
 

1 - 3	_____	16 - 25	_____
4 - 5	_____	above 25	_____
6 - 15	_____		

- c) Qualification: 12<sup>th</sup> complete \_\_\_\_\_  
 12<sup>th</sup> + T.T.I \_\_\_\_\_  
 12<sup>th</sup> + 1 year college \_\_\_\_\_  
 Diploma \_\_\_\_\_  
 12<sup>th</sup> + 3 year college \_\_\_\_\_  
 B.A. (B.Ed.) \_\_\_\_\_  
 Any other, Please specify \_\_\_\_\_  
 \_\_\_\_\_

3. The observed class:

Grade \_\_\_\_\_  
 Section \_\_\_\_\_  
 Period \_\_\_\_\_  
 Date \_\_\_\_\_  
 Class size \_\_\_\_\_

**ASPECTS TO BE CHECKED**

A S P E C T S	YES	NO
1. Is there teaching material(s) mentioned in the lesson plan of the period observed		
2. Has the teacher used teaching material(s) in the lesson of the period observed?		
3. If response to question No. 2 is "Yes", the teaching material(s) used is/are:		
3.1 Relevant to the theme of the lesson		
3.2 Adequate to the lesson		
3.3 Appropriate to age & experience of the pupils		
3.4 Big enough to the class size		

## 4. Source of the teaching material(s) used in the lesson observed

The teacher	_____	Yes	_____	No
The students	_____	Yes	_____	No
The SPC (borrowed)	_____	Yes	_____	No
Commercially obtained	_____	Yes	_____	No
If any other, please specify _____				

## 5. Type of teaching material(s) used in the lesson observed

Graphic	_____
Models	_____
Objects	_____
Radio	_____
Television	_____
Tape recorder	_____
Video	_____
Slides	_____
Computers	_____
Print materials	_____
If any other, please specify _____	

## 6. Number of teaching material(s) used in the lesson observed

One	_____
Two	_____
Three	_____
More than three	_____

## 7. How the teaching material is used in the lesson observed

To introduce the lesson	_____
To present the lesson	_____
To summarize the lesson	_____
If for any other, please specify _____	

**APPENDIX - A3****Interview Questions for the Directors & SPC  
Co-ordinators in the Eight Sample Schools**

1. What is your evaluation on the interest and effort of teachers in your school concerning how far they apply teaching Materials and make use of SPC?
2. Is there any observable differences between teachers with less experience (about less than 6 years of service) and more experience in this regard? And also between T.T.I and Diploma graduates?
3. Is there material, financial and administrative support rendered to teachers to enable them prepare and apply teaching materials? Could you mention some of such helps provided?
4. What are the major problems teachers encounter in utilizing teaching materials and make use of SPC?

## APPENDIX - B1

UNIVERSITII FINFINNEE  
 MANA BARNOOTA DIGIRIT 2<sup>FFAA</sup>  
 KOLEEJII BARUMSAA

DIPAARTTIMANTII SIRNA BARNOOTAA FI  
 OGUMMAA BARSIIISUU

UNKA GAAFFII BARSIIISOTA SADARKAA TOKKOFFA  
 MAGAALAA NAQAMTEE FI NAANNOO ISAA JIRANIIN  
 GUUTAMU

Akeekni unka gaaffii kanaa digirii lammataa koof qorannoon ademsisisuuf (masters degree) odeeffannoo sassaabuufi dha. Odeeffannon ati kennitu maayii qorannoo qofaaf oola. Iccitiidhaanis eegama. Kanaafuu maqaa kee hin barreessitu.

Kanaafuu, adaraa kee, yeroo kee hangatokko fudhuutii gaaffiilee hundaaf deebii sirrii fi dhugaa ta'e kenni.

Ulfaadhu!

KUTAA TOKKOOFFAA

Qajeelcha: Deebii kee mallattoo (✓) saanduqa keessa gochuun agarsiisi

1. Umuriin kee

- |                       |                       |
|-----------------------|-----------------------|
| a) waggaa 18-20 _____ | d) waggaa 31-35 _____ |
| b) waggaa 21-25 _____ | e) waggaa 36-40 _____ |
| c) waggaa 26-30 _____ | f) waggaa 40 ol _____ |

2. Saalli kee

- |                 |                   |
|-----------------|-------------------|
| a) dhiira _____ | b) dubartii _____ |
|-----------------|-------------------|

3. Sadarkaan barumsaa kee
- a) kutaa 12 kan xumure \_\_\_\_\_
- b) kutaa 12<sup>ffaa</sup> + dhaabbata leenjii barsiisotaa \_\_\_\_\_
- c) kutaa 12<sup>ffaa</sup> + kooleejii waggaa takko \_\_\_\_\_
- d) Dipiloomaa (kutaa 12<sup>ffaa</sup> + kooleejii waggaa lama) \_\_\_\_\_
- e) kutaa 12<sup>ffaa</sup> + kooleejii waggaa sadii \_\_\_\_\_
- f) Digirii duraa (B.A/B.Sc) \_\_\_\_\_
- g) kan biraan, yoo jiraate \_\_\_\_\_
- 
4. Muuxannoon barsiisummaa kee
- a) waggaa 1 -3 \_\_\_\_\_ d) waggaa 16-25 \_\_\_\_\_
- b) waggaa 4-5 \_\_\_\_\_ e) waggaa 25 ol \_\_\_\_\_
- c) waggaa 6-15 \_\_\_\_\_
5. Sagaantaa leenjii ati fudhatte
- a) Idilee (tajaajilaan dura) \_\_\_\_\_
- b) leenjii gannaa (tajaajila keessa) \_\_\_\_\_
- c) leenjii hin fudhane \_\_\_\_\_
6. Qubsummi mana Barumsaa kee
- a) magaalaa (baay'ina uummataa 2000 ol) \_\_\_\_\_
- b) baadiyaa (baay'ina uummataa 2000 gadi) \_\_\_\_\_
7. Semistara kanatti torbanitti waayition ati barsiiftu
- a) wayitii 10 gadi \_\_\_\_\_ d) wayitii 21-25 \_\_\_\_\_
- b) wayitii 11-15 \_\_\_\_\_ e) wayitii 26-30 \_\_\_\_\_
- c) wayitii 16-20 \_\_\_\_\_ f) wayitii 30 ol \_\_\_\_\_
8. Marsaan (Dabareen) ati barsiiftu (ganama mo galgala)
- a) tokko \_\_\_\_\_ b) lamaanuu \_\_\_\_\_
9. Manni barumsaa kee handhuura dagaagina barnootaa qabuu?
- a) qaba \_\_\_\_\_ b) hinqabu \_\_\_\_\_
10. Maqaan mana barumsaa kee.
- 
-

## KUTTA LAMMAFFAA

**Qajeelcha: Deebii kee fuuldura filannoo kee saanduqa  
jiru keessa mallattoo "✓" gochuun kenni.**

1. Meeshaalee barumsaatti (wann dubbifaman, moodeelii, waamtota, raadiyoo, televiizyina, kkf.) Yeroo hammam fayyadamta?
  - a) barnoota hunda keessatti \_\_\_\_\_
  - b) gara chalaatti (barnoota baay'ee kassatti) \_\_\_\_\_
  - c) hanga tokko keessatti \_\_\_\_\_
  - d) yeroon fedhe qofa \_\_\_\_\_
  - e) tasumaa hin fayyadamu \_\_\_\_\_
  
2. Sadarkaan ati meeshaalee barumsaatti dhimma battu hagam?
  - a) baay'ee olaanaa \_\_\_\_\_
  - b) olaanaa \_\_\_\_\_
  - c) giddu-galeessa \_\_\_\_\_
  - d) gad'aanaa \_\_\_\_\_
  - e) baay'ee gad'aanaa \_\_\_\_\_
  
3. Meeshaalee barumsaa ofii keetiin yeroo hammam qopheeffatta?
  - a) yeroo hunda \_\_\_\_\_
  - b) yeroo baay'ee \_\_\_\_\_
  - c) gaff-gaafii \_\_\_\_\_
  - d) yeroon fedhe \_\_\_\_\_
  - e) tasumaa hin qopheeffadhu \_\_\_\_\_
  
4. Sadarkaan ati meeshaalee barumsaa ofiin qopheeffattu hagam?
  - a) baay'ee olaanaa \_\_\_\_\_
  - b) olaanaa \_\_\_\_\_
  - c) giddu-galeessa \_\_\_\_\_
  - d) gad'aanaa \_\_\_\_\_
  - e) baay'ee gad'aanaa \_\_\_\_\_
  
5. Meeshaalee barumsaa qopheessuuf handhuura dagaagina barnootaa yeroo hammam deemta?
  - a) yeroo hunda \_\_\_\_\_
  - b) yeroo baay'ee \_\_\_\_\_
  - c) gaaf-gaafi \_\_\_\_\_
  - d) tasumaa hin deemu \_\_\_\_\_

6. Sadarkaan ati meeshaalee barumsaa ergifachuuf handhuura dagaagina barnootaatti deeddeebitu hagam?
- a) baay'ee olaanaa \_\_\_\_\_ d) gad-aanaa \_\_\_\_\_  
 b) olaanaa \_\_\_\_\_ e) baay'ee gad'aanaa \_\_\_\_\_  
 c) giddu-galeessa \_\_\_\_\_
7. Meeshaalee barumsaa argachuuf ykn qopheessuuf si'a meeqa handhuura dagaagina barnootaa daawwatta?
- a) torbanitti al tokko caalaa \_\_\_\_\_  
 b) torbeetti al tokko \_\_\_\_\_  
 c) torbee lamatti al tokko \_\_\_\_\_  
 d) torban sadiitti al tokko \_\_\_\_\_  
 e) ji'atti al tokko \_\_\_\_\_  
 f) ji'atti al tokko gadi \_\_\_\_\_  
 g) kan biraanyoo jiraate himi \_\_\_\_\_
8. Yeroo leenjii irra turte akkaataa itti meeshaalee barumsaa qopheessanii fi itti fayyadaman baratteettaa?
- a) Eeyyee \_\_\_\_\_ b) lakkii \_\_\_\_\_
9. Gaaffii lak. 8 asiin oliif deebiin kee "eeyyee" yoo ta'e, leenjiin fudhatte sun meeshaalee barumsaa akka qopheessitee itti fayyadamtu si dandeessisuu isaa attamiin ilaalta?
- a) baay'ee olaanaa \_\_\_\_\_ d) gad'aanaa \_\_\_\_\_  
 b) olaanaa \_\_\_\_\_ e) baay'ee gad'aanaa \_\_\_\_\_  
 c) giddu-galeessa \_\_\_\_\_
10. Manni barumsaa kee meeshaalee barumsaa oomishuu fi waantota barbaachisan sadarkaa hammamitti dhiyeesa?
- a) baay'ee olaanaa \_\_\_\_\_ d) gad'aahaa \_\_\_\_\_  
 b) olaanaa \_\_\_\_\_ e) baay'ee gad'aanaa \_\_\_\_\_  
 c) giddu-galeessa \_\_\_\_\_

11. Meeshaalee barumsaa oomishuu fi itti dhimma bahuuf deggersa horii (qarshii) mannibarumsaa kee godhu hagamitti madaalta?
- a) baay'ee olaanaa \_\_\_\_\_ d) gad'aanaa \_\_\_\_\_  
 b) olaanaa \_\_\_\_\_ e) baay'ee gad'aanaa \_\_\_\_\_  
 c) giddu-galeessa \_\_\_\_\_
12. Meeshaalee barumsaa oomishuuf walii galteen ati qindeessaa handhuura daggarsa barnoota wajjin qabdu
- a) baay'ee olaanaa \_\_\_\_\_ d) gad'aanaa \_\_\_\_\_  
 b) olaanaa \_\_\_\_\_ e) baay'ee gad'aanaa \_\_\_\_\_  
 c) giddu-galeessa \_\_\_\_\_
13. Waa'ee oomishaa fi hojirra oolmaa meeshaalee barnootaa illalchisee seminaara yokiin leenjii xiqqoo fudhattee beektaa?
- a) Eeyyee \_\_\_\_\_ b) Lakkii \_\_\_\_\_

## KUTAA SADAFFAA

Qajeelcha: Kanaan gaditti himootni ilaalcha hojii barsiisuu irratti jiran agarsiisan kaa'amaniiru. Hunda isaanii dubbisiitii saanduqa yaada kee sirriitti qutu keessa mallatto "✓" godhi.

Lak	Himoota (Yaada) ilaalcha	Filannoo				
		Cimseen fudha	Nan fudha	Murtee hinqabu	Nan morma	Cimseen morma
1	Hojii barsiisuu irratti kan bobbaate fedhii keetiinidha					
2	Hojii irratti bobbaa wuuf filannoon utuu siif dhiyaatee, barsiisuu hin filattu turte					
3	Namootni hojii barsiisuu waan gad ilaalaniif jecha barsiisaan jiruu kana dbiisuu qaba					
4	Gulantaan hojii barsiisuu amma illee gad bu'aa jira					
5	Barsiisotni ogeessota olaanaatti (baay'eetti) kabajaman keessaa tokko.					
6	Haalli hojii mana barumsaa baay'ee gaarii (gammachiisaa) dha, kunis barsiisotni akka hojiisaaniitti cimaniif onnachiisaa jira					
7	Hojiin barsiisuu kan humna (haamilee) nama buusuu dha, kunis raawannaa wayyaa ta'eef jajjabeessi ta'uu malu waan dhabameefi.					

lak	Himoota (Yaada) ilaalcha	Filannoo				
		Cimseen fudha	Nan fudha	Murtee hinqabu	Nan morma	Cimseen morma
8	Barsiisaan jiruu guddina biyyaaf bu'uura ta'e keessatti waan hirmaatuuf jecha gammachuu qaba.					
9	Gulantaan mindaa dhiheenya kana bahe hojii barsiisuu qaamota ogummaa galii (mindaa) sirrii argatan keessaa tokko taasiseera.					

## KUTAA AFURAFFAA

Qajeelcha: Asiin gaditti qabattootni hojiirra oolmaa meeshaalee barumsaa hambisuu (dhorkuu) danda'an tarreeffamaniiru. Muuxannoo kee irratti hundaa'uudhaan, qabattoota sana akkaataa ulfina isaaniitti sadarkaan kaa'i; jechuunis, isa baay'ee dhorkn 1<sup>ffaa</sup>, isa baay'ee hindhorkine immoo dhuma irra godhi.

Qabattoota dhorkan	Sadarkaa	
	Hojiirra-oolmaa meeshaalee barumsaa	Faayidaa handhuura dagaagina barnootaa
- beekumsa malahojii (leenjii) dhabuu		
- fedhii dhabuu		
- Yeroo dhabuu		
- deggersa horii fi meeshaa dhabuu		
- gargaarsa karaa bulchiinsaa dhabuu		

## APPENDIX - B2

UNIVARSITII FINFINNEE  
 MANA BARNOOTA DIGIRII 12<sup>FFAA</sup>  
 KOLEEJII BARUMSAA  
 DIPARTIMENTII SIRNA BARNOOTAA  
 FI OGUMMAA BARSIIISUU

Haala Itti Fayyadamiinsa Meeshaalee Deggersa Barnootaa Fi Damee Handhuura Gabbinsa Barnootaa Mana Barumsaa Ilaalchisee Guca Dawwii Fi Hubannootiin Guutamu

- I. Hubachiisa:
- a) Otoo dawwii daree hin jalqabin dura qabxiiwwan lakk. II, III fi IV jallatti dhiyootaniif odeeffannoowwan barbaachisan kenni (guuti).
  - b) Qabxiiwwan lakk, 1, 2, fi 3 jalatti dhiyaa taniff sanduqa duwaa fuuldura jiru keessa mallattoo "✓" kaauudhaan mirkaneessi.
  - c) Lakk 4 fi 5 jalatti qabxiiwwan dhiyaataniif immoo saanduqa duwaa fuldura isaa jiru keessa mallatto "✓" kaa'i.
  - d) Maqaa barsiisicha dowwatamee barreessuun barbaachisaa mitti.

II. Mana Barumsaa ilaalchisee

- a) Maqaa mana Barumsaa \_\_\_\_\_
- b) Bakki inni itti argamu:
  - . Magaala (baay'inni uummata isaa 2000 ol) \_\_\_\_\_
  - . Baadiyaa (baay'inni uummata isaa 2000 gadi) \_\_\_\_\_

III. Odeeffannoo matayya barsiisaa/tuu do'a tamuu/tuu

- a) Saala Dhiira \_\_\_\_\_
- Dubara \_\_\_\_\_

b) Hojii barsiisuu irratti muuxannoon isaa/ishee waggaadhan

1 - 3	_____	16 - 25	_____
4 - 5	_____	25 ol	_____
6 - 15	_____		

c) Sadarkaa barnootaa

- . kutaa 12<sup>faa</sup> kan xumure \_\_\_\_\_
- . kutaa 12 fi Dh. L. Barsiisotaa \_\_\_\_\_
- . kutaa 12 fi barumsa kollejii waggaa 1 \_\_\_\_\_
- . Diiploomaa \_\_\_\_\_
- . kutaa 12 fi barumsa kollejii waggaa 3 \_\_\_\_\_
- . B.A. (B.Ed.) Digirii \_\_\_\_\_
- . Yoo kanaan ala ta'e, maalummaa isaa ibsi \_\_\_\_\_

IV. Daree daawwiin keessatti geggeeffamu ilaalchisee:

- . kutaa \_\_\_\_\_
- . Daree \_\_\_\_\_
- . Wayitii \_\_\_\_\_
- . Guyyaa \_\_\_\_\_
- . Baay'ina barattootaa \_\_\_\_\_

## Qabxiiwwan Daawwii Hubannootiin Mirkanaa'an

	Qabxiiwwan	Eeyyee	Lakkii (Miti)
1.	Barnoota wayitii daawwiin daree adeemsifame dhiyaate keessatti waa'ee meeshaalee deggersa barnootaa wanti jedhame jiraa?		
2.	Barnoota wayitii daawwiin daree godhameetti barsiisichi meeshaalee deggersa barnootaa fayyadameeraa?		
3.	Gaaffi lakk. 2 jalatti dhiyaateef deebiin keenaame "Eeyyee" yoo ta'e, meeshaaleen deggersa barnootaa barsiisichi fayyadame:		
	3.1 Barnoota wayitti sanatti dhiyanteef barbaachisaadha		
	3.2 Barnoota wayitti sanaaf ga'umsa qaba		
	3.3 Umurii fi muuxannoo barattootaa wajjin kan wal gituudha		
	3.4 Barattoota daree keessatti argaman maraaf haala gaaritti muldhachuu ni danda'a		

4. Maddi meeshaalee deggersa barnootaa barsiisichi wayitii daawwii daree godhame itti fayyadame

- Barsiisichaan kan qopha'eedha \_\_\_\_\_
  - Barattootaan kan qopha'eedha \_\_\_\_\_
  - Handuura gabbinsa barnootaa mana barnootaa irra ergisaan kan argameedha \_\_\_\_\_
  - Gabaa irraa kan bitameedha \_\_\_\_\_
  - Yoo haala biroodhaan argame ta'e, ibsi \_\_\_\_\_
-

5. Gosti meeshaalee deggersa barnootaa barsiisichi yeroo daawwii daree adeemsifame itti fayyadame

- . Graafawwaa \_\_\_\_\_
- . Moodeelii \_\_\_\_\_
- . Meeshaalee asilii \_\_\_\_\_
- . Raadiyoo \_\_\_\_\_
- . Televizyini \_\_\_\_\_
- . Teeprikoordarii \_\_\_\_\_
- . Viidiyoo \_\_\_\_\_
- . Sliidii \_\_\_\_\_
- . Kompuutera \_\_\_\_\_
- . Meeshaalee barreeffamaa \_\_\_\_\_
- . Yoo kan biroo ta'e, ibsaa \_\_\_\_\_

6. Baay'inni meeshaalee deggersa barnootaa barsiisichi wayitii dawwiin daree adeemsifame fayyadame

- . tokko \_\_\_\_\_
- . lama \_\_\_\_\_
- . Sadii \_\_\_\_\_
- . Sadii ol \_\_\_\_\_

7. Meeshaan gargaarsa barumsaa faayidama inni irra cole:

- . barnnotichaaf seensa godhuuf \_\_\_\_\_
  - . barnnoticha dhiyeessuuf \_\_\_\_\_
  - . yaada xumuraa kennuuf \_\_\_\_\_
  - . kan biraan yoo jiraate himi \_\_\_\_\_
-

## APPENDIX - B3

Gaaffi - Deebii Dura Bu'oataa fi Qindeessitoota Handhuura Gabbina Barnootaa Manneetii Barnootaa 8 Kannen Iddattoo Filatamanii Wajjin Godhame.

1. Haala itti faayyadaminsa meeshaalee deggersa barnootaa fi handhuura gabbinsa barnootaa ilaalchisee fedhii fi tattaaffii barsiisotni mana barnoota keessanii qabaniif fi gochan akkamitti ilaaltu?
2. Kanuma ilaalchisee barsiisota muuxanno yaaraa qabaniif (waggaa 6 gadi) fi muuxannoo yeroo dheera qaban gidduu garaa garummaan muldhatu jiraa? Akkaasumas barsiisota diplooma qabaniif kanneen dhaabbilee leenjii barsiisotaa irraa eebbifaman gidduuttoo?
3. Barsiisotni mana barnoota keessanii meeshaalee deggersa barnootaa qopheessuu fis ta'e itti fayyadamuuf gama bulchiinsa mana barnootaatiin deggersi maalaqaa fi dhiyeessi meeshaalee ni godhamaafii? Yoo ni godhamaaf ta'e hanga murta'ee himaa/maal faa?
4. Itti fayyadaminsa meeshaalee deggersa barnootaa fi handhuura gabbinsa barnootaa illalchisee rakkoowaan barsiisota quunnaman keessaa kannen gurguddo ta'an tarreessi.

APPENDIX - C1  
SUMMARY OF THE JUDGES' RATING  
(Questionnaire and Observation Check-list)

A) Questionnaire

Item		Scale Value given by the 5 judges					Average
Part	No	J <sub>1</sub>	J <sub>2</sub>	J <sub>3</sub>	J <sub>4</sub>	J <sub>5</sub>	
Two	1	5	4	5	4	5	4.6
	2	5	4	5	4	5	4.6
	3	5	4	4	4	5	4.4
	4	5	4	4	4	5	4.4
	5	5	4	4	4	5	4.4
	6	5	4	4	4	5	4.4
	7	5	4	4	4	5	4.4
	8	5	4	4	5	5	4.6
	9	5	4	4	5	5	4.6
	10	5	4	4	5	5	4.6
	11	5	4	4	5	5	4.6
	12*	3	3	3	3	2	2.8
	13*	2	3	3	2	3	2.6
Three	1	5	5	5	4	4	4.6
	2	5	5	5	4	4	4.6
	3	5	5	5	4	4	4.6
	4	5	5	4	4	4	4.4
	5	5	5	5	4	4	4.6
	6	5	5	5	4	4	4.6
	7	5	5	4	4	4	4.4
	8	5	5	4	4	4	4.4
	9	5	5	4	4	4	4.4
Four	Ranking	5	5	5	2	4	4.2

\*Items Dropped

## APPENDIX - C1 (Cont.)

## B) Check-list

Item No.		Scale Value given by the 5 judges					Average
		J <sub>1</sub>	J <sub>2</sub>	J <sub>3</sub>	J <sub>4</sub>	J <sub>5</sub>	
	1	5	5	5	4	4	4.6
	2	5	5	4	4	4	4.4
	3.1	5	5	4	4	4	4.4
	3.2	5	5	4	4	4	4.4
	3.3	5	5	4	4	4	4.4
	3.4	5	5	4	4	4	4.4
	4	5	5	4	4	4	4.4
	5*	1	1	3	4	2	2.2
	6	4	5	4	4	5	4.4
	7*	1	1	3	3	1	1.8

\* Items Dropped

APPENDIX - C2  
Reliability of the 5 Judges Ratings on Validity of the  
Questionnaire and the Check-list

	Item		Judges Rating					(x)	
	Part	No.	J <sub>1</sub>	J <sub>2</sub>	J <sub>3</sub>	J <sub>4</sub>	J <sub>5</sub>	Total	
Questionnaire	T w o	1	5	4	5	4	5	23	
		2	5	4	5	4	5	23	
		3	5	4	4	4	5	22	
		4	5	4	4	4	5	22	
		5	5	4	4	4	5	22	
		6	5	4	4	4	5	22	
		7	5	4	4	4	5	22	
		8	5	4	4	5	5	23	
		9	5	4	4	5	5	23	
		10	5	4	4	5	5	23	
		11	5	4	4	5	5	23	
		12	3	3	3	3	2	14	
		13	2	3	3	2	3	13	
Questionnaire	T h r e e	1	5	5	5	4	4	23	
		2	5	5	5	4	4	23	
		3	5	5	5	4	4	23	
		4	5	5	4	4	4	22	
		5	5	5	5	4	4	23	
		6	5	5	5	4	4	23	
		7	5	5	4	4	4	22	
		8	5	5	4	4	4	22	
		9	5	5	4	4	4	22	
Four	Ranking	5	5	5	2	4	21		
$\xi x_i$		110	100	98	91	100	$\xi x$ 499		
$\delta x_i^2$		.518	.401	.367	.563	.575	$\delta x^2$ 11.724		
$\xi \delta x_i^2$		2.424							
Check-list		1	5	5	5	4	4	23	
		2	5	5	4	4	4	22	
		3.1	5	5	4	4	4	22	
		3.2	5	5	4	4	4	22	
		3.3	5	5	4	4	4	22	
		3.4	5	5	4	4	4	22	
		4	5	5	4	4	4	22	
		5	1	1	3	4	2	11	
		6	4	5	4	4	5	22	
		7	1	1	3	3	1	9	
		$\xi x_i$		41	42	39	39	36	$\xi x$ 197
		$\delta x_i^2$		2.49	2.56	0.29	0.09	1.24	$\delta x^2$ 31.04
$\xi \delta x_i^2$		6.67							

Computation

Formula

$$r = \frac{K}{K-1} \left( 1 - \frac{\xi \delta x_i^2}{\delta x^2} \right)$$

Solution

A. Questionnaire

$$r = \frac{5}{5-1} \left( 1 - \frac{2.424}{11.724} \right)$$

$$= \frac{5}{4} \times 0.793244626$$

$$= 0.9915557$$

$$= \underline{0.99}$$

B. Check-list (for observation)

$$r = \frac{5}{5-1} \left( 1 - \frac{6.67}{31.04} \right)$$

$$= \frac{5}{4} \times 0.785115979$$

$$= 0.9813948$$

$$= \underline{0.98}$$

APPENDIX - D1  
QUESTIONNAIRE RESULT OF THE PILOT STUDY

	SCORES OBTAINED																					Total Scores on	
	Item Number																				Odd Items	Even Items	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
01	3	3	4	3	3	3	5	1	2	2	1	4	4	5	5	4	1	1	5	2	33	28	
02	3	4	3	3	3	3	6	1	5	2	4	5	1	1	1	5	4	2	4	4	34	30	
03	4	4	4	4	4	4	5	1	3	2	1	4	2	5	4	5	5	5	5	1	37	35	
04	3	3	3	3	3	3	5	1	3	2	2	4	2	4	4	5	3	4	4	4	32	33	
05	3	3	2	3	3	2	3	1	3	3	1	2	4	4	2	4	4	1	4	2	29	25	
06	3	3	3	3	3	3	4	1	3	3	1	1	5	4	1	1	2	4	2	2	27	25	
07	3	3	3	3	3	3	6	0	0	3	1	4	1	5	4	1	4	4	5	2	30	28	
08	3	4	5	4	4	4	5	1	5	4	3	5	1	5	2	5	5	4	5	4	38	40	
09	3	3	3	3	3	3	3	1	4	2	2	3	1	4	4	2	3	2	5	4	31	27	
10	2	4	4	4	4	4	5	1	3	4	4	1	5	1	1	4	2	4	5	4	35	31	
11	3	4	4	3	2	2	6	1	2	1	2	2	4	4	2	4	2	4	2	2	29	27	
12	5	3	4	3	4	3	6	1	1	3	1	1	5	5	5	1	1	5	2	2	34	27	
13	3	2	3	2	3	2	6	1	2	2	2	5	3	4	1	5	2	1	4	1	29	25	
14	2	3	5	5	1	3	4	0	4	1	3	1	1	2	1	1	1	1	5	1	27	18	
15	5	5	5	5	4	4	6	1	4	3	3	4	2	2	2	4	4	2	4	4	39	34	
16	4	4	4	4	3	3	6	1	3	2	2	4	4	2	3	4	2	4	5	4	36	32	
17	2	2	3	2	3	2	4	1	2	2	2	2	1	2	2	4	3	2	1	1	23	20	
18	5	3	4	3	4	3	6	1	4	2	1	5	2	4	3	5	4	2	5	2	38	30	
19	2	3	3	3	3	3	5	1	2	2	2	2	4	2	2	2	2	2	4	2	29	22	
20	3	3	2	3	3	3	5	1	3	1	5	1	4	4	1	4	5	1	3	4	34	25	
21	3	3	3	3	3	3	5	1	5	3	1	5	2	2	4	4	4	4	5	4	35	32	
22	3	3	3	3	3	3	5	1	3	3	3	4	4	4	4	4	4	4	5	4	37	33	
23	4	3	4	3	3	3	3	1	3	2	2	5	1	5	4	5	4	3	5	3	33	33	

## APPENDIX - D2

Computation of the Split-Half (Odd-Even)

Reliability Coefficient of the Questionnaire

(Based on the Pilot Study)

Subjects	Total Scores of Each Subject on Odd and Even Items	
	Odd( $x_1$ )	Even ( $X_2$ )
01	33	28
02	34	30
03	37	35
04	32	33
05	29	25
06	27	25
07	30	28
08	38	40
09	31	27
10	35	31
11	29	27
12	34	27
13	29	25
14	27	18
15	39	34
16	36	32
17	23	20
18	38	30
19	29	22
20	34	25
21	35	32
22	37	33
23	33	33

$$N = 23$$

$$\sum x_1 = 749$$

$$\sum x_2 = 660$$

$$\sum x_1 x_2 = 21888$$

$$\sum x_1^2 = 24775$$

$$\sum x_2^2 = 19520$$
  

$$r_s = \frac{n(\sum x_1 x_2) - (\sum x_1)(\sum x_2)}{\sqrt{[n \sum x_1^2 - (\sum x_1)^2][n \sum x_2^2 - (\sum x_2)^2]}}$$

$$= 0.83$$
  

$$r_t = \frac{2r_s}{r_s + 1}$$

$$= \underline{0.90}$$

Where:

$X_1$  = Subjects' total score on the odd items

$X_2$  = Subjects' total score on the even items

$r_s$  = The half-test (Split - half) correlation

$r_t$  = The reliability of the full length

## APPENDIX - E1

Correlation Coefficient of Observation Results  
During the Pilot Study (Computed to Determine the  
Reliability of the Check-list)

## Grade 1

## Observation 1

Items	Observer One (O <sub>1</sub> )	Observer Two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	1	1
3.2	0	1
3.3	0	1
3.4	1	1
4	2.5	2.5
5	2	2

$$N = 8$$

$$\xi_{0_1} = 8.5$$

$$\xi_{0_2} = 10.5$$

$$\xi_{0_1}^2 = 14.25$$

$$\xi_{0_1}^2 = 14.25$$

$$\xi_{0_2}^2 = 16.25$$

$$r_1 = \frac{n(\xi_{0_1} \xi_{0_2}) - (\xi_{0_1})(\xi_{0_2})}{\sqrt{[n \xi_{0_1}^2 - (\xi_{0_1})^2][n \xi_{0_2}^2 - (\xi_{0_2})^2]}}$$

$$= \underline{0.86}$$

## Observation 2

Items	Observer One (O <sub>1</sub> )	Observer two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	1	1
3.2	1	1
3.3	1	1
3.4	1	1
4	2.33	2.33
5	2	3

$$N = 8$$

$$\xi_{0_1} = 10.33$$

$$\xi_{0_2} = 11.33$$

$$\xi_{0_1}^2 = 17.43$$

$$\xi_{0_1}^2 = 15.43$$

$$\xi_{0_2}^2 = 20.43$$

$$r_2 = \frac{n(\xi_{0_1} \xi_{0_2}) - (\xi_{0_1})(\xi_{0_2})}{\sqrt{[n \xi_{0_1}^2 - (\xi_{0_1})^2][n \xi_{0_2}^2 - (\xi_{0_2})^2]}}$$

$$= \underline{0.93}$$

## Inter Correlation Coefficient of the Two Observations

$$r = \frac{r_1 + r_2}{2}$$

$$= \underline{0.89}$$

## APPENDIX - E2

## Grade 2

## Observation 1

Items	Observer One (O <sub>1</sub> )	Observer Two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	1	1
3.2	1	1
3.3	1	1
3.4	0	1
4	4	4
5	1	1

$$\begin{aligned}
 N &= 8 \\
 \xi_{0_1} &= 10 \\
 \xi_{0_2} &= 11 \\
 \xi_{0_1 0_2} &= 22 \\
 \xi_{0_1}^2 &= 22 \\
 \xi_{0_2}^2 &= 23
 \end{aligned}$$

$$r_1 = \frac{n(\xi_{0_1 0_2}) - (\xi_{0_1})(\xi_{0_2})}{\sqrt{[n \xi_{0_1}^2] - (\xi_{0_1})^2} [n \xi_{0_2}^2] - (\xi_{0_2})^2}$$

$$= \underline{0.95}$$

## Observation 2

Items	Observer One (O <sub>1</sub> )	Observer two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	1	1
3.2	0	1
3.3	1	1
3.4	1	1
4	4	4
5	1	1

$$\begin{aligned}
 N &= 8 \\
 \xi_{0_1} &= 10 \\
 \xi_{0_2} &= 11 \\
 \xi_{0_1 0_2} &= 22 \\
 \xi_{0_1}^2 &= 22 \\
 \xi_{0_2}^2 &= 23
 \end{aligned}$$

$$r_2 = \frac{n(\xi_{0_1 0_2}) - (\xi_{0_1})(\xi_{0_2})}{\sqrt{[n \xi_{0_1}^2] - (\xi_{0_1})^2} [n \xi_{0_2}^2] - (\xi_{0_2})^2}$$

$$= \underline{0.95}$$

Inter (Average) Correlation Coefficient of the Two Observations

$$r = \frac{r_1 + r_2}{2}$$

$$= \underline{0.95}$$

## APPENDIX - E3

## Grade 3

## Observation 1

Items	Observer One (O <sub>1</sub> )	Observer Two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	1	1
3.2	1	0
3.3	1	0
3.4	1	1
4	2.5	2.5
5	2	2

$$N = 8$$

$$\xi_{0_1} = 10.5$$

$$\xi_{0_2} = 8.5$$

$$\xi_{0_1}^2 = 14.25$$

$$\xi_{0_1}^2 = 16.25$$

$$\xi_{0_2}^2 = 14.25$$

$$r_1 = \frac{n(\xi_{0_1}O_2) - (\xi_{0_1})(\xi_{0_2})}{\sqrt{[n\xi_{0_1}^2 - (\xi_{0_1})^2][n\xi_{0_2}^2 - (\xi_{0_2})^2]}}$$

$$= \underline{0.86}$$

## Observation 2

Items	Observer One (O <sub>1</sub> )	Observer two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	0	1
3.2	0	0
3.3	1	0
3.4	1	0
4	4	4
5	1	1

$$N = 8$$

$$\xi_{0_1} = 9$$

$$\xi_{0_2} = 8$$

$$\xi_{0_1}^2 = 19$$

$$\xi_{0_1}^2 = 21$$

$$\xi_{0_2}^2 = 20$$

$$r_2 = \frac{n(\xi_{0_1}O_2) - (\xi_{0_1})(\xi_{0_2})}{\sqrt{[n\xi_{0_1}^2 - (\xi_{0_1})^2][n\xi_{0_2}^2 - (\xi_{0_2})^2]}}$$

$$= \underline{0.88}$$

Inter (Average) Correlation Coefficient of the Two Observations

$$r = \frac{r_1 + r_2}{2}$$

$$= \underline{0.87}$$

## APPENDIX - E4

## Grade 4

Observation 1

Items	Observer One (O <sub>1</sub> )	Observer Two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	1	1
3.2	0	1
3.3	1	1
3.4	1	1
4	4	4
5	1	1

$$\begin{aligned}
 N &= 8 \\
 \xi_{0_1} &= 10 \\
 \xi_{0_2} &= 11 \\
 \xi_{0_1 0_2} &= 22 \\
 \xi_{0_1}^2 &= 22 \\
 \xi_{0_2}^2 &= 23
 \end{aligned}$$

$$r_1 = \frac{n(\xi_{0_1 0_2}) - (\xi_{0_1})(\xi_{0_2})}{\sqrt{[n\xi_{0_1}^2] - (\xi_{0_1})^2} [n\xi_{0_2}^2] - (\xi_{0_2})^2}$$

$$= \underline{0.95}$$

Observation 2

Items	Observer One (O <sub>1</sub> )	Observer two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	0	1
3.2	0	1
3.3	1	1
3.4	1	1
4	2.5	2.5
5	2	2

$$\begin{aligned}
 N &= 8 \\
 \xi_{0_1} &= 8.5 \\
 \xi_{0_2} &= 10.5 \\
 \xi_{0_1 0_2} &= 14.25 \\
 \xi_{0_1}^2 &= 14.25 \\
 \xi_{0_2}^2 &= 16.25
 \end{aligned}$$

$$r_2 = \frac{n(\xi_{0_1 0_2}) - (\xi_{0_1})(\xi_{0_2})}{\sqrt{[n\xi_{0_1}^2] - (\xi_{0_1})^2} [n\xi_{0_2}^2] - (\xi_{0_2})^2}$$

$$= \underline{0.86}$$

Inter (Average) Correlation Coefficient of the **Two** Observations

$$r = \frac{r_1 + r_2}{2}$$

$$= \underline{0.91}$$

## APPENDIX - E5

## Grade 5

Observation 1

Items	Observer One (O <sub>1</sub> )	Observer Two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	1	0
3.2	1	0
3.3	1	0
3.4	0	1
4	3.5	3.5
5	3	2

$$\begin{aligned}
 N &= 8 \\
 \xi 0_1 &= 11.5 \\
 \xi 0_2 &= 8.5 \\
 \xi 0_1 0^2 &= 20.25 \\
 \xi 0_1^2 &= 26.25 \\
 \xi 0_2^2 &= 19.25
 \end{aligned}$$

$$r_1 = \frac{n(\xi 0_1 0_2) - (\xi 0_1)(\xi 0_2)}{\sqrt{[n\xi 0_1^2 - (\xi 0_1)^2][n\xi 0_2^2 - (\xi 0_2)^2]}}$$

$$= \underline{0.78}$$

Observation 2

Items	Observer One (O <sub>1</sub> )	Observer two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	1	1
3.2	1	1
3.3	0	1
3.4	0	1
4	4	4
5	1	1

$$\begin{aligned}
 N &= 8 \\
 \xi 0_1 &= 9 \\
 \xi 0_2 &= 11 \\
 \xi 0_1 0^2 &= 21 \\
 \xi 0_1^2 &= 21 \\
 \xi 0_2^2 &= 23
 \end{aligned}$$

$$r_2 = \frac{n(\xi 0_1 0_2) - (\xi 0_1)(\xi 0_2)}{\sqrt{[n\xi 0_1^2 - (\xi 0_1)^2][n\xi 0_2^2 - (\xi 0_2)^2]}}$$

$$= \underline{0.93}$$

Inter (Average) Correlation Coefficient of the Two Observations

$$r = \frac{r_1 + r_2}{2}$$

$$= \underline{0.86}$$

## APPENDIX - E6

## Grade 6

Observation 1

Items	Observer One (O <sub>1</sub> )	Observer Two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	1	1
3.2	0	1
3.3	0	0
3.4	1	1
4	3	3
5	2	1

$$\begin{aligned}
 N &= 8 \\
 \xi_{0_1} &= 9 \\
 \xi_{0_2} &= 9 \\
 \xi_{0_1 0_2} &= 15 \\
 \xi_{0_1}^2 &= 17 \\
 \xi_{0_2}^2 &= 15
 \end{aligned}$$

$$r_1 = \frac{n(\xi_{0_1 0_2}) - (\xi_{0_1})(\xi_{0_2})}{\sqrt{[n\xi_{0_1}^2] - (\xi_{0_1})^2}[n\xi_{0_2}^2] - (\xi_{0_2})^2}}$$

$$= \underline{0.84}$$

Observation 2

Items	Observer One (O <sub>1</sub> )	Observer two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	0	1
3.2	1	0
3.3	0	1
3.4	1	1
4	4	4
5	1	2

$$\begin{aligned}
 N &= 8 \\
 \xi_{0_1} &= 9 \\
 \xi_{0_2} &= 11 \\
 \xi_{0_1 0_2} &= 21 \\
 \xi_{0_1}^2 &= 21 \\
 \xi_{0_2}^2 &= 25
 \end{aligned}$$

$$r_2 = \frac{n(\xi_{0_1 0_2}) - (\xi_{0_1})(\xi_{0_2})}{\sqrt{[n\xi_{0_1}^2] - (\xi_{0_1})^2}[n\xi_{0_2}^2] - (\xi_{0_2})^2}}$$

$$= \underline{0.83}$$

Inter (Average) Correlation Coefficient of the Two Observations

$$r = \frac{r_1 + r_2}{2}$$

$$= \underline{0.84}$$

## APPENDIX - E7

Grade 8

Observation 1

Items	Observer One (O <sub>1</sub> )	Observer Two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	1	0
3.2	1	0
3.3	0	1
3.4	0	1
4	4	4
5	1	1

$$\begin{aligned}
 N &= 8 \\
 \xi_{0_1} &= 9 \\
 \xi_{0_2} &= 9 \\
 \xi_{0_1}^2 &= 19 \\
 \xi_{0_1}^2 &= 21 \\
 \xi_{0_2}^2 &= 21
 \end{aligned}$$

$$r_1 = \frac{n(\xi_{0_1}O_2) - (\xi_{0_1})(\xi_{0_2})}{\sqrt{[n\xi_{0_1}^2 - (\xi_{0_1})^2][n\xi_{0_2}^2 - (\xi_{0_2})^2]}}$$

$$= \underline{0.82}$$

Observation 2

Items	Observer One (O <sub>1</sub> )	Observer two (O <sub>2</sub> )
1	1	1
2	1	1
3.1	1	1
3.2	0	1
3.3	0	1
3.4	1	0
4	4	4
5	1	1

$$\begin{aligned}
 N &= 8 \\
 \xi_{0_1} &= 9 \\
 \xi_{0_2} &= 9 \\
 \xi_{0_1}^2 &= 19 \\
 \xi_{0_1}^2 &= 21 \\
 \xi_{0_2}^2 &= 21
 \end{aligned}$$

$$r_2 = \frac{n(\xi_{0_1}O_2) - (\xi_{0_1})(\xi_{0_2})}{\sqrt{[n\xi_{0_1}^2 - (\xi_{0_1})^2][n\xi_{0_2}^2 - (\xi_{0_2})^2]}}$$

$$= \underline{0.82}$$

Inter (Average) Correlation Coefficient of the Two Observations

$$r = \frac{r_1 + r_2}{2}$$

$$= \underline{0.82}$$

## Appendix - E8

Summary of Correlation Coefficient of Scores Recorded  
by Two Observers in Two Observations of Each Grade

Grades	Correlation Coefficient of Scores recorded by two Observers in two Observations of Each Grade		Inter Correlation Coefficient of Observation 1 & 2
	Observation 1	Observation 2	
1	0.86	0.93	0.89
2	0.95	0.95	0.95
3	0.86	0.88	0.87
4	0.95	0.86	0.91
5	0.78	0.93	0.86
6	0.84	0.83	0.84
7	-	-	-
8	0.82	0.82	0.82
Overall Average			0.88

N.B. Regular class was not started in grade 7 (when The pilot study was conducted) because the new syllabus, text-books and teachers guides for the grade were late.

APPENDIX - F  
 PRIMARY SCHOOLS (GRADES 1-8) IN AND  
 AROUND NEKEMTE

IN NEKEMTE	AROUND NEKEMTE
*1. FULRANA LAMMA	* 1. ANNO
2. DALLO	* 2. GUTE
3. KIDANE MIHIRET	* 3. KAWISSA SHANNO
*4. KIBA WACHA	4. UKIE
*5. BIKILTU LEKA	5. SIRRE
6. MENFESAWI	6. TINFA
* 7. BURKKA JATO	7. GATAMA
	* 8. DIGGA KOLOBO
	9. BANDIRA

\*SELECTED SAMPLE SCHOOLS



## APPENDIX - G (CONT.)

## B) REALIZED

SERVICE YEARS		U R B A N				R U R A L				T O T A L	
		T.T.I		12+1 & DIPLOMA		T. T. I		12 + 1 & DIPLOMA			
		M	F	M	F	M	F	M	F	No.	%
1-5	1-3	-	1	-	2	1	3	1	3	11	17.46
	4-5	3	4	4	2	3	1	3	1	21	33.33
6 & ABOVE	6-15	2	2	2	2	1	3	2	2	16	25.40
	16 & ABOVE	2	2	2	2	3	1	1	2	15	23.81
TOTAL	NO.	7	9	8	8	8	8	7	8	63	
	%	11.11	14.28	12.70	12.70	12.70	12.70	11.11	12.70		100

## APPENDIX - H

CHI-SQUARE CALCULATIONS FOR EXTENT OF TEACHING MATERIAL  
APPLICATION & SPC USE (TABLE 2-4)

VARIABLES			F R E Q U E N C I E S					CALCULATED $\chi^2$	DF	CRITICAL $\chi^2$										
			O	E	O-E	(O-E) <sup>2</sup>	(O-E) <sup>2</sup> /E													
Teaching Material Application	1-5 YEARS	YES	81.25	59.175	22.075	487.306	8.235	40.342*	1	3.841										
		NO	18.75	40.825	-22.075	487.306	11.936													
	6 & ABOVE YEARS	YES	37.1	59.175	-22.075	487.306	8.235													
		NO	62.9	40.825	22.075	487.306	11.936													
	T.T.I	YES	67.19	59.4	7.79	60.684	1.022				5.034*	1	3.841							
		NO	32.81	40.6	-7.79	60.684	1.495													
	12+1 & DIPLOMA	YES	51.61	59.4	-7.79	60.684	1.022													
		NO	48.39	40.6	7.79	60.684	1.495													
	URBAN	YES	60.94	56.275	4.665	21.762	.387							1.77	1	3.841				
		NO	39.06	43.725	-4.665	21.762	.498													
	RURAL	YES	51.61	56.275	-4.665	21.762	.387													
		NO	48.39	43.725	4.665	21.762	.498													
	SPC use	1-5 YEARS		69.23	50	19.23	369.793										7.396	14.792*	1	3.841
		6 & ABOVE YEARS		30.77	50	-19.23	369.793										7.396			
T.T.I		57.69	50	7.69	59.136	1.183														
12+1 & DIPLOMA		42.31	50	-7.69	59.136	1.183														
URBAN		48.08	50	-1.92	3.686	0.74														
RURAL		51.92	50	1.92	3.686	0.074														

\* P &lt; .05

DF (DEGREE OF FREEDOM) = (NO OF ROWS - 1) X (NO OF COLUMNS - 1) (ELZEY, 1985: 180).

## APPENDIX - I

## Formula Used for t-test Computation\*

$$i) \quad S^2_P = \frac{(n_1 - 1) S_1^2 + (n_2 - 1) S_2^2}{n_1 + n_2 - 2}$$

$$ii) \quad t = \frac{\bar{X}_1 - \bar{X}_2}{S^2_P \times \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}$$

$$iii) \quad df. = (n_1 + n_2 - 2)$$

iv) Abbreviations

$S^2_P$  = Pooled variance

$n_1$  = number of the first sample group

$n_2$  = number of the second sample group

$\bar{X}_1$  = mean of the first sample group scores

$\bar{X}_2$  = mean of the second sample group scores

$S_1^2$  = variance of the first sample group

$S_2^2$  = variance of the second sample group

---

\* Kothari (1985: 254)

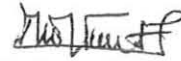
APPENDIX - J1  
 EXTENT OF TEACHING MATERIAL APPLICATION  
 IN TERMS OF SERVICE YEARS SUB-CATEGORIES

SERVICE YEARS COMPARED		F R E Q U E N C I E S				CALCULATED X <sup>2</sup>	CRITICAL X <sup>2</sup>
		YES		NO			
		No	%	No	%		
1-3 &	1-3 YEARS	19	86.36	3	13.64	2.098	3.841
4 - 5	4-5 YEARS	33	78.57	9	21.43		
4 - 5 &	4-5 YEARS	33	78.57	9	21.43	28.396*	3.841
6 - 15	6-15 YEARS	15	41.67	21	58.33		
6-15 &	6-15 YEARS	15	41.67	21	58.33	4.256*	3.841
16 - 25	16-25 YEARS	5	27.78	13	72.22		
16-25 &	16-25 YEARS	5	27.78	13	72.22	2.150	3.841
ABOVE 25	ABOVE 25	3	37.5	5	62.5		

\*P > .05

## DECLARATION

I, hereby declare that this thesis is my original work done under the guidance of Ato Amare Asgedom. All relevant sources used are duly acknowledged.



Tilahun Fanta