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CONTENTS

Assessment Practices in Technical and Vocational Education and Training Colleges in Oromia Regional State

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Abstract

The main objective of this study was to examine assessment practices in Technical and Vocational Education and Training (TVET) colleges in Oromia Regional State, Ethiopia. To collect necessary data, a total of 105 (M 93 and F 12)sample teachers from four TVET Colleges filled in the questionnaire set for the purpose. Besides, to supplement information obtained through the questionnaire, focus group discussions with department heads and students of two TVET colleges, were undertaken. Descriptive statistics were employed for data analysis. The results obtained elucidated that teachers in TVET colleges under consideration predominantly use assessment methods such as observation, questioning, written test, class work and group presentation which largely assess trainees' factual knowledge. On the other hand, reflective logs, open book/book review, interview, portfolio evidence, and self assessment are the least used methods. Academic subject teachers and apprenticeship supervisorsare important assessorsand the involvement of career officer and trainees themselves in the process appeared to be unsatisfactory.It was also observed that the tendencies to use assessment data for initial guidance and to know entry behavior and program evaluation seemed negligible. Besides, from the components of the training program, apprenticeship and among competencies, attitudes and values, and social and interpersonal skills were identified as poorly assessed areas. On basis of the findings, training of teachers on competency based assessment, establishment of assessment unit in the respective institutes and reflection of students on their own work are recommendations forwarded in this study.

Key words: Assessment Practices, Competency Based Assessment, PerformanceAssessment, Observation.

INTRODUCTION

According to UNESCO and ILO Revised Recommendations on Technical and Vocational Education (2001), technical and vocational education refers to all forms and levels of the educational process involving, in addition to general knowledge, the study of technologies and related science and the acquisition of practical skills, know-how, attitudes and understanding relating to occupations in the various sectors of economic and social life. It is an aspect of lifelong learning emphasizing preparation of citizens for occupational fields for effective participation in the world of work.

Technical and Vocational Education and Training (TVET) is an essential element of capacity building in many parts of the world including developing countries like Ethiopia. As Selemani (2004) indicated that the strategic importance of technical and vocational education and training to social and economic development of a country, lies in the fact that it provides the necessary knowledge and skills for the exploitation of a country through the application of science and technology. TVET specifically avails a country with critical mass competent and skilled personnel required for managing and spearheading the development activities in various sectors of industry and business.

The main objective of TVETis to impart, mainly in young people, the knowledge and skills necessary for life after school. To realize this objective close alignment of the training program with labor market requirements is advocated. In order for trainees to successfully complete the training program, they should demonstrate attainment of skills, knowledge and understanding to be able to perform duties of the relevant occupational sector (Ecclestone, 1996; McDonal et al, 1995; Rutayuga& Kondo, 2004).

In TVETcolleges as like in other educational institutions, assessment may be viewed as diagnosis of strengths and weaknesses, predication of potential abilities and aptitudes, provision of feedback to learners and teachers as well. However, due to the close alignment of the training program with labor market and complexity of learning outcomes to be assessed,

assessment has a unique place in TVET colleges. As McDonald et al (1995) indicated, assessment is perhaps the most vital of all processes in vocational education. In that case, a high quality assessment system provides the right emphasis on the different aspects of a course, gives students appropriate feedback, ensures that the right students are deemed to have learnt sufficient, and results in a qualification that is well understood. With the right procedures in place, students can be confident in the quality of their training, and employers can have confidence in qualified students. Without assessment, however as the researchers illustrated, any of these could be placed in jeopardy.

McDonald et al (1995) further elucidated that the limitations of traditional assessment and the importance of competence-based assessment in TVET colleges. The researchers pointed out that the traditional assessment emphasizes the comparison of individuals with each other. In vocational education, however, assessment needs to be thought of not as a comparison between individuals, but as a process of collecting evidences and making judgments on the extent and nature of progress towards the performance requirements set out as a learning outcome though it has rarely been the case.

Prior to Education and Training policy (1994), TVET was given little attention in Ethiopia. However, with introduction of Education and Training policy, it has gained great momentum both in specialized TVET collegesand comprehensive schools. The policy has given due attention to the prevision of this sector of education with intention of producing middle-level skilled human power that can harness the economic development.

Cognizant to this fact, many TVET in situations of different levels have been established at different parts of the country, and curriculum was developed for various areas of training based on workforce demand. According TVET curriculum developed by Ministry of education (MoE,2003), a specific training area consists of main course, supportive courses and common courses. The TVET document points out that the main course evaluation should include in-school training, project work and apprenticeship evaluations.

To the best knowledge of these researchers, no studies available with regard to assessment practices in Technical and Vocational Education and Training (TVET) colleges. Hence,the

objective of thisstudywas to survey the assessment practices in TVET collegesand critically examined the extent to which it fits intended purposes. Thus, the study specifically tried to answer the following research questions;

- What are the assessment techniques often used by teachers in TVET colleges?
- To what extents do data obtained from assessment are used to promote learning and teaching in the TVET colleges?
- To what extents do assessment practices fit theintended purposes in TVET colleges?

3. METHODOLOGY

3.1. Participants of the Study

The target population of the study was teachers and students in Technical and Vocational Education Training (TVET) Colleges which have been training students at 10+3 level in Oromia Regional State. These colleges wereAdama, Asella, Batu, Ambo, Woliso, Nekamte, Shanbu, Chiro, Shashamene, Sebeta, and Bale-RobeTVETColleges. The participants of the study included a sample of teachers, department heads, academic vice deans, and students from the colleges under the study.

3.2. Sample and Sampling Techniques

Among the target population of the study, five TVET Colleges were selected using random sampling technique. These include Woliso,Asella, Adama, Shashemene and AmboTVETColleges. From these colleges three teachers per department were selected using stratified and random sampling techniques. The bases for strata were teaching majors-supportive-common courses, and senior-beginner teachers. Besides, the final year high achieverstudents from two colleges (Ambo and Woliso), and department heads of these two colleges were used for focus group discussion. Focus group discussion with students and department heads were conducted separately. Interviews were also held with academic vice

deans of the two colleges. Generally, a total of 112 teachers, of which 105 properly completed and returned the questionnaire, 15 students, 11 department heads and two vice deans were participated in the study.

3.3. Tools, Procedures of Data Collection and Data Analysis

To obtain the required information from the samples identified above, questionnaires were developed for teachers. The component of the questionnaires include items related to assessment methods, assessors, purposes of assessment, competencies assessed, assessment issues and training on assessment. Most of the items in the questionnaire are closed ended where the subjects asked to indicate their response from suggested alternatives. On the other hand, there were some open ended items where respondents were also requested to deliver rich information. After orientation, the questionnaire was administered to the respondents at their respective college. In addition to the questionnaire, items for focus group discussions were developed both for students and department heads. In the same way, interview questions were developed for academic vice deans.

Items in the questionnaire were judged by three(two psychology and one curriculum)instructors from Adama university on “Yes” or “No” checklist for validation. Those items who received the support of two instructors selected for use. The remaining items were rejected.

The questionnaires were also piloted at BishoftuTVETcolleges to identify some pitfalls and possible misunderstandings. Cronbach Alpha coefficient method was used to analyze internal consistency of the questionnaire.The internal consistency for subscales were ranged from r = 0.70 to 0.77, which are acceptable for research in social sciences (George and Mallery, 2003).To analyze the data, descriptive statistics such as frequency and percentage were used.

4. RESULTS AND DISCUSSION

The major results obtained from the questionnaires, focus-group discussions and interviews are presented in this part.

4.1Methods of Assessment

Various assessment methods and the extent to which they are being used by TVET teachers are presented in Table 2. Teachers in TVET colleges under investigation identified observation (79%), asking and answering question (70.5%), written test (56.2%), and class work (40%), group presentation (33.2%) as most commonly employed methods. According to their responses these are methods which have been frequently used in TVET colleges.

Table 2: Assessment Methods and how frequently they are used

Assessment Methods	How frequently used					
	Always		Sometimes		Never	
	No	%	No	%	No	%
Observation	83	79	19	18.1	3	2.9
Self-assessment	25	23.8	37	35.2	43	41
Class works	42	40	63	60	-	-
Home works	21	20	76	72.4	8	7.6
Writer test(mid& final)	59	56.2	34	32.4	12	11.4
Evaluating students artifacts	21	20	59	56.2	25	23.8
Case studies/simulations	4	3.80	64	61.0	37	35.2
Portfolios evidence	7	6.7	51	48.6	47	44.8
Interview	3	2.9	52	49.5	50	47.5
Performance assessment	33	31.4	52	49.5	20	19.0
Individual presentation	17	16.2	58	55.2	30	28.6
Group presentation	37	33.2	58	55.2	10	9.5
Reflective logs	-	-	29	27.6	76	72.4
Open book test/book review	10	9.5	44	41.5	51	48.6
Peer assessment	18	17.1	52	49.5	35	33.3
Asking and answering questions	74	70.5	28	26.7	3	2.9
Micro task	10	9.5	67	63.8	28	26.7

Besides, methods rated high on the 'sometimes' level include homework (72.4%), case studies/simulation (61%), class work (60%) performance assessment (33% on always and 49.5 on sometimes) and micro task (with 63.8% 'sometime' though the mean is below 2).
On the other hand, the following methods are reported to be "never" used by the majority of the subjects. These are reflective logos (72.4%), open book (48.6%), Interview (47.6%), Portfolio evidence (44.8%) and self assessment (41%). Hence, these methods are the least employed methods in TVET colleges in generally.

In selecting and implementing assessment methods the crux of the matter is what to be assessed. It is clear that not every goal or educational objective always needs to be assessed. As CACPOLY (2005) pointed out planning for assessment requires setting priorities. Thus, selecting carefully those learning outcomes, the curriculum is most interested in having students to achieve is crucial.

Learning outcomes to be assessed specifically in TVET curricula as Eccleston (1996) pointed out include: knowledge (recall and recognition), personal skills (monitoring and evaluating quality of own work, interpersonal skills (working with others), cognitive skills, practical skills, and attitudes and values. To assess these learning outcomes check list, question and answer, written test, reflective logs, self-assessment, peer assessment, observation, presentations, task groups, micro task, progress sheets, case studies, and testimonies are among the assessment methods (Eccleston, 1996; McDonlad; 1995 Puhl, 1997).

The Ethiopian TVET curriculum document, MoE (2003) also pointed out the need to use continuous assessment in the training program. It is evident that continuous assessment implies frequent assessment of teaching learning process using a variety of most fit techniques in the ongoing process of instruction.

The results obtained in this study with regard to the low level utilization of methods such as self assessment, portfolio evidence, interview, and reflective logs elucidated the poor implementation status of modern assessment techniques in the TVET colleges. These are methods found to be most suitable for learning outcomes in the TVET colleges. Some of these methods even have long term effect. For instance, Puhl (1997) indicated that self and peer

assessments play crucial in the context of contemporary assessment process. These methods provide for a wider range of imputes to learners than those provided by a single person such as teacher. They are even skills to be developed the learners and take with them when they leave school and make use of them for life long learning. Similarly, McDonald et al (1995) underscore the importance of self -assessment in the technical and vocational education. According to these researchers, students must leave a vocational education course equipped to engage in self-assessment throughout their professional lives. They need to be able to make reliable judgments about what they know and what they do not know, and what they can do and cannot do.

4.2Assessors in TVET Colleges

The responses to the items related to the involvement of stakeholders in the assessment of trainees and their degree of involvement are summarized in the Table 3. These stakeholders are academic subject staff, workplace assessors, assessment unit in the college, career officers/vocational counselor, and trainees themselves. The results depicted that, among these stakeholders, academic subject teachers and workplace assessors are most frequently involved in the assessment process (48.6%and 24.8% respectively). However, assessment unit, career officer and trainees as self assessors are rated by the respondents as far less involved in the assessment process (with the rate of 61.9%, 52.4% and 48.6%, respectively).

Table 3: Assessors and Degree of their Involvement

Assessors body	Degree of Involvement					
	Always		Sometime		Never	
	No	%	No	%	No	%
Academic subject staff	5	48.	43	41	11	10.5
Work place Assessors/ line managers	2	24.	55	52.	24	22.9
Assessment Unit in the college	9	8.6	31	29.	65	61.9
Career officer/counselor	1	13.	36	34.	55	52.4
Trainees (self –assessors)	2	20	34	31.	51	48.6

As pointed out during the focus group discussions, regarding workplace assessors, though there are involvements during apprenticeship there is concern over its adequacy. Likewise, assessment unit, vocational counselor and trainees themselves (as part of peer and self-assessment) are considered as potential assessors; and yet the study reveals that their involvement is almost negligible. This does not seem consistent with literature reviewed in the area which holds the view that all stakeholders (e.g., trainers, employers, parents, trainees and others) should actively participate in the assessment process. This is due to the fact that all stakeholders could employ the results of the assessment for different purposes.

4.3Purpose of Assessment

With regards to the purpose of assessment, four major purposes of assessment, namely, initial guidance and to know entry behavior, certifications and proof of attachment, learning progress and achievement, and program evaluation and institutional development are presented along with rating scale specified in Table 4.

Table 4: Purpose of Assessment

Purposes	Responses					
	Always		Sometime		Never	
	N	%	N	%	No	%
Initial guidance and to know entry behavior	1	11.	3	28.	63	60
Learning progress and achievement	5	53.	4	41	6	57
Certification and proof of attachment	6	57.	3	30.	13	12.
Program evaluation and institutional development	1	11.	3	37.	54	51.

According to the responses, the results of assessment were mostly used for certification (57.1%) and learning progress and achievement (53.3%). However, results of assessment are never used for initial guidance and to know entry behavior by 60% of the respondents and program evaluation by 51.4% of them. It was also pointed out during focus group discussions that the results of assessment dominantly used for certification and for evaluating students' performance. In fact, entry behavior of trainees requires assessment to place trainees in appropriate fields of study. Besides, assessment should also be used as both evaluative and as a

learning tool. The results of the study which is presented above showthose teachers in the colleges under consideration emphasize the evaluative dimension of assessment, as this practice is pervasive and persistent in the other program in the Ethiopian education sector.

4.4Assessment process

The responses obtained with regards to the extent to which learning outcomes in the various components of major courses are assessespresented in Table 5. Among major course components, in-school training and project works were reported to be adequately assessed with the rate of 72.4% and 42.9%, respectively. On the other hand, apprenticeship was rated as the least assessed with the rate of 68.67%.

Table 5: Learning Outcomes in the Various Component of Major Course and their Assessment status

Components of main course	Assessment Status					
	Adequate		Somewhat adequat		Not adequat	
	No	%	No	%	No	%
In-school training	76	72.	28	26.7	1	1.00
Project work	45	42.	50	47.6	10	9.5
Apprenticeship	8	7.6	25	23.8	72	68.6

Moreover, focus group discussions made with department heads and students, and interviews conducted with academic deans confirmed the existence of serious problems in the assessment of apprenticeship. Among these problems, the major one is unwillingness of some organizations to expose trainees to gain the required skills in their fields of study. One of the reason cited by students and department heads about why these organizations are unwilling is that they do not trust the competency of the trainees and, thus, do not allow the trainees to practice and experiment with sophisticated and sensitive machine. Similarly, the results of interview held with vice dean revealed that lack of close supervision from both parties (College and workplace assessors) make students reluctant towards their objectives.

As pointed out by students regarding the assessment of apprenticeship, the results of assessment and actual apprenticeship practices do not correlate. It was reported by students that some students score maximum mark but have come back to college without any exposure to real workplace skills. In general, department heads, academic deans and students unanimously question the validity and reliability of the result of assessment in apprenticeship at large. However, as reviewed in the literature, apprenticeship is a core component, which requires the attention of all stakeholders to enable trainees to gain competence, confidence, productivity and creativity in their entire endeavor so as to produce creative minds and working hands in the societies at large (MoE, 2003; Eccleston, 1996).

Courses in TVET program have various required competencies: understanding and cognitive skills, practical skills, socialand interpersonal skills, and attitudes and values. The below table depicts the extent to which these competencies are assessed.

Table 6: The Extent to which Required Competencies are assessed

Competencies of main course	Assessment Status					
	Adequate		Somewhat adequat		Not adequat	
	No	%	No	%	No	%
Academic knowledge (understanding cognitive skills	51	48.	44	41.9	10	9.5
Practical skills	61	58.	37	35.2	7	6.7
Social and interpersonal skills	19	18.	30	28.6	56	53.3
Attitudes and values	9	8.6	23	21.9	73	69.5

As indicated in Table 6, four areas of competencies are presented along with their claimed assessment status. The results reveal that practical skills and academic knowledge (understanding, cognitive skills) seem to be more adequately assessed (with the rate of 58% and 48.6% respectively) than other competencies. The results are consistent with competency areas that have been advised to be assessed adequately in different literatures and TVET curriculum(MoE, 2003; Eccleston, 1996). However, attitudes and values and social and interpersonal skills as areas of competency were reported to be assessed inadequately with the

rate of 69.5% and 53.3%, respectively. However, the two areas have got a paramount contribution for training and producing responsible, competent, and transparent manpower in any fields of study. When these areas are assessed poorly, not as required, the consequences may have negative impact on social services.

It appeared that attitudes and values, and social and interpersonal skills areas of competencies might have been assessed by teachers offering common courses alone, civic and ethical education in particular. Nevertheless, the issue seriously raised during focus group discussion held with department heads who stated that these areas are underestimated both during in-school training and apprenticeship. Students themselves shared the same view. From focus group discussions, it can be deduced that the assessment of attitudes and values, and social and interpersonal skills appeared that they did not get sufficient attention.

4.5Authenticity of Assessment Practice in TVET Colleges

The degree of agreement of respondents with the notion that assessment practices in TVET colleges, is not authentic, is presented in Table 7.

Table 7: Respondents' Degree of Agreement with the Notion that assessment in TVET is not Authentic

Degree of Agreemer	No	%
Strongly agree	21	20
Agree	32	31
Undecided	5	5
Disagree	31	30
Strongly disagree	16	15.2

The results indicate that 20% of the respondents strongly agree with the notion, while 31% agree with it. In the contrary, 15.2% and 30% strongly disagree and disagree with the notion, respectively. It is apparent to believe that assessment practice in TVET does not seem authentic. This is inconsistent with what is suggested in the literature.Vocational assessments

are to be considered more authentic because the student's mastery is demonstrated rather than inferred from his or her responses to questions about the subject (Wiggins, 1990; Kerka, 1995).

5. CONCLUSION

Technical and Vocational Education and Training (TVET) refers to all forms and levels of educational process involving, in addition to general knowledge, the study of technologies and related sciences and the acquisition of practical skills, know-how, attitudes and understandings related to occupations in the various sectors of economic and social life. It plays a crucial role in the creation of knowledge and skills demanded by the world of work. Thus, it is an essential element of capacity building in many parts of the world including developing countries like Ethiopia.

Regarding TVET curriculum, experts in the field unanimously advocate that the program has to be closely linked to labor market requirements, and its training system should be competency- based. Intended learning outcomes in this program are mostly related to skills, knowledge and understanding that enable trainees to perform duties of the relevant occupational sectors, and they are hardly measured by formal written assessment procedures. In a context where what is important is not easily measured by written accounts, traditional means of assessments are not suitable.

However, the findings of the study elucidated that teachers in TVET Colleges under consideration mainly use assessment methods such as observation, questioning, written test, class work and group presentation. On the other hand, reflective logs, open book/book review, interview, portfolio evidence, and self assessment are the least used methods. Academic subject teachers and work place assessors (though various concerns arise on validity and reliability of work place assessment) are main assessors in TVET colleges under investigation. The involvement of assessment unit in the college (does not exist in many colleges), career officer/counselor and trainees themselves in the assessment process is quite limited.

The study also pointed out that data obtained from assessment are mostly used for certification and assessing learning progress and achievement. The tendencies to use assessment data for

initial guidance and to know entry behavior and program evaluation seem to be insignificant. From the components of the training program, apprenticeships and among competencies, attitudes and values and social and interpersonal skills appearedas poorly assessed areas.

In a nutshell, though there is a tendency to use assessment practices that fit intended purposes such as using some continuous assessment procedure, the general status of assessment in TVET colleges under consideration has not get the attention it deserves. It seems, like in many other learning institutions in the country, TVET colleges (though what is to be assessed in the program need improved assessment practices) have not droppedthe traditional assessment practices which have been prevalent in Ethiopian education system.

To improve the situation the researchers forward the following recommendations.

- Competency- based training program needs innovative assessment techniques. TVET teachers' knowledge and skills are crucial to implement this innovation. Thus, all teachers need to acquire necessary knowledge and skills on competency -based assessment through some form of training.
- To improve work-place assessment, further discussion should be conducted with workplace supervisor. Work -place assessment format should be also redefined and upon completion of apprenticeship, students must be requested to reflect what they achieved.
- To realize the assessment innovation in TVET colleges, establishment of assessment unit with a defined role is essential.

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Assessment of Malt Barley Production Technical Efficiency in South Eastern Ethiopia: Stochastic Parametric Estimation Techniques

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Abstract

The technical efficiency of malt barley production in Tiyo and Sinana-Dinsho districts of Arsi and Bale zones respectively was investigated using the stochastic frontier production function which incorporates a model for the technical inefficiency effects. Primary data were obtained using interview schedule from 2010/2011 cropping season from randomly selected household heads. The estimated stochastic production frontiers model indicates land size of malt barley, DAP, seed, labour and oxen labour are significant inputs that determine production level of malt barley. The mean technical efficiency of malt barley farmers is 0.725. This shows that the farmers are not using inputs efficiently. On average, farmers can increase their output by 27.50% without increasing the existing level of inputs by adopting techniques used by the best practice malt barley farmers. The estimated stochastic frontier production model together with the inefficiency parameters shows that education level, economically active family members, cooperative membership, extension visits, access to credit, and plots fragmentation are significant factors that determine efficiency/inefficiency level of malt barley farmers. The results of the study imply that to improve the technical efficiency of malt barley farmers, further promotion of rural household education, better access to credit facilities through improving rural financial market, increasing number of extension visits and promoting cooperative are key factors necessary for policy consideration.

Key words: *stochastic production frontier, Technical inefficiency, malt barley.*

Introduction

Barley is one of the most important cereal crops in Ethiopia. The country produces both malt and food barleys. Malt barley, however, requires favourable environment to produce a plump and mealy grain. The diversity of barley ecologies is high, with a large number of folk varieties and traditional practices existing in Ethiopia, which enables the crop to be more adaptable in the highlands (Fekadu *et al*., 2002).

Immense potential areas are available for malt barley production to meet demand of the local breweries. Most of the demand is met through imports, which account around 69% of total annual requirement (ORDA, 2008a). To satisfy the ever-increasing demand of the beverage industry, in addition to expansion of production area, increasing production efficiency at plot level is needed.

The modern theory of efficiency dates back to the pioneering work of Farell (1957).Technical efficiency measures how well individual farm transforms inputs into a set of outputs based on a given set of technology and economic factors (Aigner *et al.*, 1977). It reflects the ability of a farm to obtain maximum output from a given set of inputs. According to Jondrow *et al* (1982) and Ali *et al* (1996), technical efficiency can be measured either as input conserving oriented or output-expanding orientation.

A technically efficient farm operates on the production frontier. But, a technically inefficient farm operates below the frontier. If a farmer is found to be efficient, then productivity enhancement is possible via use of new inputs and technologies that could push the production frontier right ward. However, if farmers are found to be inefficient, then it is possible to improve productivity either by increasing output with the same input bundle or using less input to produce the same output. Hence, an empirical measure of

efficiency is needed to determine the magnitude of the gains that could be obtained by improving technical efficiency with a given technology.

Borts and Pinherio (1997) analysed technical efficiency of peasant farming fitting Cobb-Douglas Production Function (CDPF) to estimate Stochastic Production Frontier (SPF) and found average technical efficiency of 70%. Oluwatayo *et al* (2008) studied resource use efficiency of maize farmers and found average technical efficiency of 68%. Mohammad *et al* (2000) analysed technical efficiency of wheat and found the average technical efficiency of 51%.

Assessing technical efficiency of malt barley has the following significances. It helps to evaluate the impact of previous development programs. And based on the Technical efficiency level of each farmer, the determinants of inefficiency would be identified.

Thus, the efficiency scores in this study are relative values of best farmer in the study areas. The efficiency score of the frontier method are only relative to best farms in the sample, the inclusion of extra efficient firms from other place may reduce the efficiency scores (Coelli *et al*., 1998). This is the drawback of this study.

There are no documented empirical studies on technical efficiency of malt barley production in the study area. The objectives of this study are to determine the technical efficiency and determinant of technical efficiency of malt barley production.

Methodology

Study area

The study was conducted in Tiyo and Sinana Dinsho districts of Arsi and Bale zones respectively. Tiyo district shares border with Munesa, Ziway Dugda, Hitosa, and Digeluna Tijo. The district has 18 peasant associations (PAs). The district produces wheat and barley as primary crops. In 2007, population of Tiyo was 86,761(CSA, 2007). Sinana Dinsho district has Sinana and Dinsho sub-districts. Sinana-Dinsho district shares border with districts of Agarfa, Gasera-Gololcha, Berbere, Goba, Adaba, Goro and Ginir. *This study was conducted in Dinsho sub-district.* Dinsho has 13 PAs. The district produces wheat and barley as primary crops. In 2007, population of Dinsho sub-district was 39,124 (CSA, 2007).

Sampling Technique, Sample Size and Methods of data collection

A multi-stage sampling technique was used in choosing the sample to collect primary data. Tiyo and Sinana Dinsho were purposively selected for being they are some of the major malt barley producing districts. Two PAs from each district that have good potential of malt barley production were purposively selected. Rapid appraisals of the study areas were undertaken and lists of malt barley farmers in each chosen PAs were prepared and sample of malt barley farmers was selected using simple random sampling procedure. Overall, 68 malt barley farmers comprising 38 from Tiyo district, and 30 from Dinsho sub-district were selected for the 2010/2011 cropping seasons. Data collection instrument used was interview schedule. Primary data was collected by district agricultural development agents. If farmers had more than one plot of malt barley, then data were collected by aggregation. Random sampling was made only for male household

heads because the objective of this research was to assess the efficiency of the operator farmers (Table 1).

Table 1: Households, sample size and enumerators in each PA

Name of Peasant association	Districts	Number of households	Number of Male heads household that produce malt barley	Sample size	Number of enumerators
Shalla Cebeti	Tiyo	652	234	18	2
Dosha	Tiyo	793	265	20	3
Mio	Dinsho	638	182	14	2
Dinsho Zuria	Dinsho	670	210	16	2

Source: Keble offices

Econometric model specification

Crop production in the study area is likely to be affected by random shocks and measurement errors. Accordingly, choosing a model that accounts for the effect of random shocks and measurement errors is appropriate. Thus, stochastic frontier model was specified in the analysis of technical efficiency of malt barley.

The general stochastic frontier model developed independently by Aigner *et al* (1977) and Meeusen and Broeck (1977) in which an additional random error, v, is added to the non-negative random variable, u, is specified below:

$\ln(y_i) = X_i\beta + \in,\ i = 1,2,3, \ldots$

(1)

Where:
i – Number of firms in the study areas

$\ln(y_i)$- natural logarithm of the i^{th} firm output/hectare,

X_i = k+1 row vector whose first element is 1 and the remaining elements are the logarithms of the K input quantities used by the i^{ih} firm,

$\beta = (\beta_0, \beta_1, \beta_2, \ldots \beta_k)$ is a (K+1) column vector of unknown parameters to be estimated

$\in = v_{ij} - U_{ij}$,

v_i – disturbance error term, distributed as $N(0, \sigma_v^2)$ intended to capture events beyond the control of farmers; and

u_i – non-negative random variable, independently and identically distributed as $N^+(\mu, \sigma_u^2)$ intended to capture technical inefficiency effects of the i^{th} plot.

u_i - assumed to follow half-normal distribution with mean μ_i and σ_u^2,

$$\mu_i = \sum \delta_k Z_{ik} \quad (2)$$

Where: Z = (1×k) row vector of observable farm specific variables hypothesised to be associated with technical inefficiency; and

δ = (k×1) column vector of unknown parameters to be estimated.

The maximum likelihood estimates of parameters of the frontier model are estimated, such that the variance parameters are expressed in terms of the parameterisation

$$\sigma_s^2 = \sigma_v^2 + \sigma_u^2 \text{ and } \gamma = \frac{\sigma_u^2}{\sigma_s^2} = \frac{\sigma_u^2}{\sigma_v^2 + \sigma_u^2}. \quad (3)$$

Where, the variance ratio γ parameter has a value between 0 and 1. And γ equal to zero indicates, the deviations from the frontier are due entirely to noise, while a value of one indicates all deviations are due to technical inefficiency.

σ_u^2 - Variance parameters that denotes deviation from the frontier due to inefficiency;

σ_v^2- Variance parameter that denotes deviation from the frontier due to noise;

σ_s^2- Variance parameter that denotes the total deviation from the frontier ($\in$);

In the prediction of firm level technical efficiencies, Battese and Coelli(1988) pointed out that the best predictor of exp($-u_i$) is obtained by:

$$E[\exp(-u_i)/e_i] = \frac{1-\emptyset(\sigma_A+\gamma e_{i/\sigma_A})}{1-\emptyset(\gamma e_{i/\sigma_A})}\exp(\gamma e_i + {\sigma_u}^2/2) \quad (4)$$

Where $\sigma_A = \sqrt{\gamma(1-\gamma){\sigma_s}^2}$; $e_i = \ln(y_i)-x_i\beta$; $\emptyset$ = (.) is the density function of a standard normal random variables.

Cobb-Douglas Production Function specification:

$$\ln Y = \beta o + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + \beta_5 \ln X_5 + \beta_6 \ln X_6 + \beta_7 \ln X_7 + v_i - u_i \quad (5)$$

Where:

Y – Output of malt barley from the i^{th} plot in quintal/hectare.

X_1 – land size of malt barley (hectare),

X_2 – urea used (kg/hectare),

X_3 – DAP used (kg/hectare),

X_4 – seed rate (kg/hectare),

X5 - pre-harvesting man-day [(8 hours per day)/hectare],

X6 – herbicide used (litres/hectare),

X7 - oxen labour (oxen - pair days/hectare).

Hypothesis: It is hypothesised that all input variables under equation 5 affects malt barley output significantly.

Estimation of production frontier is not possible with variables having zero value. To avoid this problem, Battese (1997) suggested that it is possible to estimate production frontier by assigning very small value greater than zero for farmers who did not apply the given input.

Following Battese and Coelli (1995), mean technical inefficiency effects, μ_i is defined as:

$$\mu_i = \delta_0 + \sum \delta_k Z_{ik}, (K = 1, 2, \ldots, 13) \quad (6)$$

Where:

Z_{i1} – age of household head (year);

Z_{i2} – educational level of household head (years of schooling);

Z_{i3} – Total land size operated (hectare);

Z_{i4} – training; 1 = trained farmer and 0 otherwise;

Z_{i5} – economically active family members (number);

Z_{i6} – cooperative membership; membership =1and 0 otherwise;

Z_{i7} – slope of plots; 1 = plot is plain and 0 otherwise;

Z_{i8} –plot fragmentation (number)

Z_{i9} –oxen (number);

Z_{i10} – extension visits (number of visit per year);

Z_{i11} – access to credit; 1 = yes and 0 otherwise;

Z_{i2} - malt barley farming experience (year);

Z_{i3}- soil fertility status; 1 = fertile and 0 otherwise; and

δ_k – Unknown parameters to be estimated.

Hypothesis: It is hypothesised that all variables except plot fragmentation mentioned under equation 6, affect Technical Inefficiency negatively.

The one-stage estimation procedure of the inefficiency effects model together with production frontier function is implemented in the study. The technical efficiency predictor implemented in the program is obtained by replacing the unknown parameters in equation (4) with the maximum likelihood estimates.

The above Battese and Coelli (1995) models, in equations (1) to (6) can be estimated using the computer program, Frontier version 4.1 software developed by Coelli (1995). Before model estimation assumption of normality, multicollinearity and heteroscedasticity would be checked.

Result and Discussion

Descriptive Result

Table 2, the household head was on average 48.2 years old. The average year of schooling of the household heads was 2.56 years. Development agent visited the farmer 11.6 times for extension service per year on average.

Table 2: Descriptive statistics of continuous variables

Variables	Unit of measurement	Mean	Standard Deviation
Age of household head	year	48.2	14.5
Economically active family members	number	3.98	1.24
Education level	Year of schooling	2.56	1.03
Total land size cultivated	hectare	2.45	1.35
Oxen	number	2.86	1.4
Plot fragmentation	number	2.4	1.3
Extension visit	Number/year	11.6	1.2
Malt barley Farming experience	year	12.4	5.7

Source: own computation

Table 3 indicates, only 32.35 percent of the respondents have access to credit service. Among the respondents 70.59 percent reported that their lands are plain. This may be one of the reasons why 76.47 percent respondents articulated that their lands fertile.

Table 3: Descriptive statistics of dummy variables

Variables	Number	percent
Soil fertility status(fertile = 1)	52	76.47
Training (Yes = 1)	17	25.00
Access to credit(Yes = 1)	22	32.35
Slope (Plain = 1)	48	70.59
Cooperative (member = 1)	62	91.18

Source: own computation

Table 4, the sample respondents on average used 63.2 kg of Dap, 15.6 kg of urea, 28 oxen pair day, 58.9 man-day, 187.2 kg of malt barley seed and 0.5 litre of herbicide on a hectare. The output of malt barley from a hectare is 26 quintals.

Table 4: Descriptive statistics of Input and output variables of malt barley production

Variables	**Unit of measurement**	**Mean**	**Standard Deviation**
Output of malt barley	Quintal/hectare	26	8.2
land size of malt barley	hectare	0.68	0.85
Urea fertilizer	kg/ hectare	15.6	12.4
DAP fertilizer	kg/ hectare	63.2	24.1
Seed rate	kg/ hectare	187.2	32
Human labor	man-day/ hectare	58.9	20.4
Herbicide	liter/ hectare	0.5	0.42
Oxen labor	oxen pair day/ ha	28	12.15

Source: own computation

Parameter Estimates of the Stochastic Frontier Model

Equations 3 to 6 were used to estimate stochastic frontier model. Before undertaking the econometric analysis, the data was checked for its normality, multicollinearity and heteroscedasticity using different batteries of tests.

In Table 5, sigma square (1.45) is statistically significant. This indicates a good fit and the correctness of the specified distribution assumption of the composite error term. The variance ratio gamma is 0.95. The result suggests, over 95% of the variation in malt barley output among farmers in the study area is due to the differences in their technical efficiencies. This result is consistent with the finding of Yao and Liu (1998). The

generalised likelihood ratio test (LR = 7.6816) is significant. This means the presence of one-sided error component.

Table 5 shows, land size of malt barley, DAP, oxen labour, and seed and human labour have a coefficient of 0.53, 0.129, 0.220, 0.42 and 0.203, respectively. Land sizes of malt barley, Dap and seed rate are significant at 1% level. And oxen and human labours are significant at 5% level. The result agrees with the hypothesis that land size of malt barley, DAP, oxen labour, seed rate, and human labour have significant impact in determining the output level of malt barley

Table 5: The maximum – likelihood estimates of the frontier model

variables	**Cob-Douglas SPF**	
	Coefficient	**t-ratio**
Frontier functions		
constant	0.92	2.16**
Land size of malt barley	0.530	6.13***
UREA	0.056	0.179
DAP	0.129	3.45***
SEED	0.420	4.42***
LABOUR	0.203	2.152**
Herbicides	0.034	0.194
Oxen labour	0.220	2.07**
Sigma-squared	**1.45**	**3.78***
gamma	**0.95**	**57.57***
Log-likelihood function	**-74.2**	
LR test	**7.76**	

Source: model output
***, **,* indicate significance level of 1% 5%, and 10% respectively

Technical efficiency scores

Table 6, there is a considerable difference in technical efficiency among farmers that ranged from minimum of 0.060 to a maximum of 0.932 while the mean was 0.725. The implication of this statistics is that farmers are technically inefficient while producing malt barley. In the short run, there is a scope for increasing malt barley production by 27.50% without increasing the existing level of inputs by adopting techniques used by the best practice malt barley farmers.

Table 6: Estimated technical efficiency of malt barley farmers at plot level

Efficiency class	**Frequency**	**Percentage**
0.01– 0.10	3	4.41
0.11 – 0.20	2	2.94
0.21 – 0.30	6	8.82
0.31 – 0.40	4	5.88
0.41 – 0.50	6	8.82
0.51 – 0.60	5	7.35
0.61 – 0.70	7	10.29
0.71 – 0.80	10	14.71
0.81 – 0.90	11	16.18
0.91 – 1.00	14	20.59
mean	0.725	
minimum	0.060	
maximum	0.932	
Standard deviation	0.195	

Source: Model output

Determinant of technical inefficiency

Identifying factors that determine the efficiency level of individual farmers is the foremost interest behind measuring technical efficiency/ inefficiency. The technical inefficiency effect estimates revealed that education level, economically active family members, cooperative membership, plot fragmentation, extension visits, and access to credit are found to be the significant factors that affect Technical inefficiency. Since these variables are found to determine inefficiency, their sign should be interpreted carefully in case of determinant of technical efficiency (Table 7).

Education negatively and significantly (at 5% probability level) affects technical inefficiency (Table 7). Education can enhance farm productivity directly by improving the quality of labour, by increasing the ability to adjust to disequilibria, and through its effect upon the propensity to successfully adopt innovations which eventually leads to higher technical efficiency. The result is similar with the findings of Parikh *et al* (1995). This makes valid the hypothesis that education affects technical inefficiency negatively.

Economically active family members were found to have a negative and significant (at 5% probability level) effect on technical inefficiency (Table 7). This finding supports that of Parikh and Shah (1995). Larger and economically active family members are source of labours. It suggests that technical efficiency of malt barley increase as the number of economically active family members increase in the family. The result supports the hypothesis that economically active family members affect technical inefficiency negatively.

Extension visit was found to have a negative and significant effect (at 1% probability level) (Table 7). The possible reason may be farmers are able to use modern techniques

of malt barley farming involving land preparation, planting, application of agro-chemicals and harvesting timely due to the guidance of the development agents. The result supports the hypothesis when the number of extension visits increase it affects technical inefficiency negatively. The result supports the finding of Xu and Jeffrey (1998).

Availability of Credit service was found to influence technical inefficiency negatively and significantly (at 5% probability level) (Table 7). Application of modern farm technology to increase agricultural output had increased financing needs of farmers. Easy and cheap credit service availability is the quickest way for boosting agricultural production. Credit is provided for relief of distress and for purchasing seed, fertilizer, cattle and implements (Yusuf, 1984). As hypothesized, availability of credit service was found to be negatively and significantly affect technical inefficiency.

Plot fragmentation affected technical inefficiency positively and significantly (at 5% probability level) as it was hypothesized (Table7).The possible reason is the costs associated with fragmentation are seen principally in terms of inefficient resource allocation (labour and capital) and the resulting cost increase in agricultural production. The result is consistent with Parikh and Shan (1995).

Cooperative membership was found to affect technical inefficiency of malt barley productivity negatively and significantly (at 1% probability level) as it was hypothesised (Table 7). Cooperatives supply their members with inputs for agricultural production, including seeds, fertilizers, and machinery services timely to its members. Thus, timely availability of agricultural inputs enhances agricultural productivity. This agrees with the findings of Onyenwaku and Fabiyi (1991).

Table 7: Stochastic Production Frontier for Determinants of malt Barley Output

Inefficiency Model	**Coefficients**	**Standard error**	**t-ratios**
constant	3.32	1.366	2.43**
Age	-0.29	0.240	-1.21
education	-0.14	0.063	-2.240**
Total land operated by farmer	-2.11	1.998	-1.056
training	-0.16	0.485	-0.33
Economically active family members	-0.20	0.089	-2.25**
Slope of the plot	-0.42	1.308	-0.321
plot fragmentation	0.21	0.097	2.167 **
Number of oxen	-0.01	0.010	-0.982
extension visit	-0.20	0.042	-4.76***
Access to credit	-0.42	0.212	-1.982**
Malt barley Farming experience	-0.284	0.095	-1.088
Soil fertility	-0.214	0.193	-1.11
Cooperative membership	-3.68	0.904	-4.07***
Variance Parameters			
Sigma-squared	1.45	0.381	3.78***
gamma	0.95	0.017	57.57***
Log-likelihood function	-74.2		
LR test	7.76		
Mean efficiency	0.725		
Number of observation	68		

Source: Model output

***, **,* indicate significance level of 1% 5%, and 10% respectively

Conclusion

The objective of this study was to examine technical efficiency and determinants of technical inefficiency of malt barley farmers in south eastern Ethiopia. The estimated stochastic production frontiers model indicates land size of malt barley, DAP, seed, human labour and oxen labour are significant determinant of malt barley output in the study area. The mean technical efficiency of malt barley farmers is 0.725. The result shows that the farmers are not using inputs efficiently. This implies farmers can increase the output they are getting by 27.50% without increasing the existing level of inputs by adopting techniques used by the best practice malt barley farmers on average.

Malt barley farmers' technical inefficiency will decrease with increase in their years of schooling, economically active family members, cooperative membership, extension visit and access to credit. On the contrary, as the number of plot fragmentation increase farmers' technical inefficiency also increase. The result implies that to improve the technical efficiency of malt barley farmers, further promotion of rural household education, better access to credit facilities, promoting number of extension visits and farmers cooperative are needed.

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Determinants of Parental School Choice in Adama Town

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Abstract

The purpose of this study was to examine factors that determine parental school choice in Adama town, Ethiopia. To meet the intended objectives of the study, the researcher used quantitative survey research method supported by qualitative data. Participants of the study included 100 parents, 4 school principals, 4 school board members and 2 Adama Town Educational experts. Closed and few open- ended Questionnaires and semi structured interviews were employed to solicit data from key informants in the study setting. Data were analyzed through both qualitative and quantitative methods. The study result showed that 14 factors influenced parents to choose schools. However, the major factors that influence parents to choose private schools were medium of instruction, assessment policy of schools, and national examination result. Thus, the study suggests the urgency of government intervention and community participation in public schools and the importance of strengthening experience sharing practices between public and private schools.

Key terms: parents, child, public schools, private schools, school choice

1. Introduction

Education is a life-long process that brings change in human behavior. It is the key to development, which every human being is seeking (Olaniyan and Okemmakinde, 2008). It improves human capabilities and helps an individual to improve personal health, increase productivity and earnings. Moreover, Education has poverty reducing effect, contributes to democratization, and promotes peace and stability (Ibid). Recognizing this, now a day's governments, families and individuals gives high attention to the provision of Education.

In this regard, several studies have been conducted on the contribution of Education for development and major factors influencing parents to choose schools to their children which is the major focus of this study. As it is indicated hereunder factors influencing parents to choose schools for their children are categorized in to three major parts (Bukhari and Randall, 2009). These are: parents and children related, socio-economic and school systems associated factors.

Parent-Child Related Factors: the study conducted by Gallop Poll (cited in Bukhari and Randall, 2009) reveled that parents chose schools for their child for reasons related to religion, a desire for strict discipline, moral values, and being closer to home. Another similar study was also carried out by Edwards and Richardson in 1981(cited in Bukhari and Randall, 2009) to determine why 1,927 students left the public schools in order to be enrolled in private schools. In the same way, the results of the study showed that lack of discipline, religious values, overcrowdings of classes and nature of curriculum content were the primary reasons that influence parents to choose private school for their children. Furthermore, Echols and Willms (1995) examined three government schools and reported 30 reasons for the same case. Happiness of the children was emerged as the most important reason, followed by good discipline of the school.

Socio-economic Related Factors: Le and Miller (2003) examined parental choice among schools and found out that public and private school parents tightly clustered around social and economic factors. Public school parents expressed most concern with the affordable school expenses and private school parents were mostly concerned about the student demographics of the school, which were similar to their family's high socio-economic status. Other study conducted in Hong-Kong by Shun-Wing (2000) revealed that school preference depends on

work, production and ownership relation as well as socio-economic status of each class.

Fossey (1994) also worked on factors determining parental preferences of schools and found out that low-income parents placed lower values on academic characteristics when choosing schools. Parental school choice is also associated with parent's occupational status. Parents with higher occupational status prefer private school over public school for their children. According to Gloman and Ravikumar (1992) private education can produce higher per capita income and the societies choose public education if majority of its agents' income is below average.

School Related Factors: according to Dronkers and Robert (2003) parental decision in educating their child depends on satisfaction and dissatisfaction of educational activities and the outcome of schools. According to the scholars, if parents are not satisfied with public schools, they will have no other option than the private schools. Moreover, parents consider educational environment, teacher-student ratio, teachers' qualification and class size as determinant factor in choosing best schools for their child (Lai, Sadoulet and Janvry, 2009). Furthermore, Hoxby (2002) found that school choice by parents has also relation with the increasing demand for high quality of teachers. Besides, at the time of school selection, parents most of the time keep in mind the institution's quality, teacher's effort, command over the subject and the academic achievement of their children.

To investigate the extent to which the findings of different countries are consistent with Ethiopian context the present researcher discussed with few parents, teachers and school board members found in Adama town and have recognized that there is perception difference among parents in selection of schools for their child. According to Adama Town Education office 2010 annual report, of town, the public education sector has been a major provider of

educational service, accounting for about 63.7% of primary enrollment in the year 2009/10. Besides, in the past five years (2006/7-2009/10), the rate of growth for private schools was 121% and 27.8% for public. Similarly, the rate of growth of student population was 110.4% in private schools and 27.6% in public schools.

Thus, the purpose of this study was to find out major factors that influence parental decision in selection of schools for their child in Adama town. To meet the stated objective the study was guided by one major question.

Main question:

1. What factors determine parental school choice in Adama Town?

   Sub Questions

2. How do parents weigh the teaching and learning processes alongside other aspects of their child's wellbeing when selecting schools?
3. How do parents in Adama town perceive private schools?

4. Methodology

This study aimed at finding out factors which influence parents' school preference in Adama Town. The methodological approach used in this study was quantitative survey research method supported by qualitative data. To make the study manageable, by using purposive sampling technique four schools (two public and two private, 50%) that are highly preferred by parents and that had presented candidates for grade 8 national examinations for more than 8 years were selected. Then, 100 parents (25 from each school) of grade six high ranked students (Rank 1-10) were chosen by using simple random sampling technique. Moreover, by using purposive sampling techniques 4 school principals and 4 school board members from each school as well as 2 educational officials from Adama town education office were taken as sample respondents and interviewed. The main data collection instrument was researcher constructed questionnaires. To ensure the reliability of the instrument and establish its validity the questionnaires were pilot tested in one private and one public school

which were not involved in the actual study. Interview was also used to supplement the data collected through questionnaire. Finally, the quantitative data were analyzed by using percentage, mean and standard deviations while the data collected through interview were analyzed by using case by case and cross case analysis.

5. Results and Discussions

5.1 Determinants of Parental school Choice

5.1.1 Parental perception on Private schools

Table 1. ***Assessment on Parental Perceptions on Private Schools (N=100)***

Items		
When compared to public school, private schools:	Mean	SD
• Educate child properly	4.05	.79
• Have teachers with required qualification	4.29	.62
• Have teachers with required educational experience	1.67	.58
• Have teachers which are more committed to work	2.47	1.05
• Have teachers which are better motivated in terms of remunerations	2.36	1.11
• Gives attention for foreign languages	4.11	.78
• Environment encourage the process of teaching and learning	3.98	1.04
• Offer more diversified and flexible curriculum	4.60	.49

Mean $\leq$ 2.50 low; mean 2.51-3.75 average; mean 3.76 -5.00 high

As indicated above, parent informants perceive that private school have teachers with required qualification; give more attention to foreign language and educate their children more than public school. In addition, the environment of private schools encourages the process of teaching and learning and the schools also offer more diversified and flexible curriculum than public schools. Contrary to the above, during interview session, one public school board member said "public school teachers can educate children better than private schools and I evaluated that the competence of my students both in public and private schools and I observed much better achievement from my child who attend in public school".

Nevertheless, teachers in private school lack the required educational experience, less commitment for work and they are not motivated in terms of remunerations. Regarding the commitment of teachers one of the private school board members said that "the reason for the commitment of private school teachers is not the love they have to work; rather the strict control made by owners of the school and school principals.

In addition, I (the researcher) also physically observed both private and public schools and confirmed the difference. According to my personal observation in public schools one combined desk is used for four students, the blackboards are cemented on the wall and teachers have no chair to take a seat and correct classroom assignments and to do other related works. School board members, school principals, and educational officials also verified the inadequacy of teaching and learning facilities in public schools. According to them, the root cause of the problem is the existence of large number of students in the class, low parental involvement, and inadequacy of budget allocated for schools from the government. In general, the environment of private schools is more conducive for teaching and learning process than public schools.

5.1.2 Status of School Resources

The study included two public primary schools (Adama Number 3 and 4) and two private schools (Nafyad and St. Joseph). To know the major differences among them, documents were assessed and the following results were obtained.

Table 2. Availability, Adequacy and Usability of Education Resources

School Resources		Private Schools		Public Schools	
		Nafiyad	St. Joseph	Adama No. 3	Adama No. 4
No. of teachers	Male	18	17	21	19
	Female	16	21	20	23
	Total	34	38	41	42
No. Students	Male	546	455	1254	1221
	Female	412	432	1312	1134
	Total	958	887	2566	2355
Teacher-student ratio		1:47	1:45	1:62	1:56
No. of Classrooms		24 (full day)	20(full day)	24 (two Shift)	28 (two Shift)
Student-classroom ratio		1:40	1: 44	1: 107	1: 84

No. of Computers	25	32	1	1

Source: Adama Town Education Office, 2010

As it can be seen from Table II, teacher- student and student-classroom ratio in private schools is smaller than public schools. Besides, the teaching and learning process in private schools is full day, however, in public schools, it is in two shifts. Moreover, private schools have few computers, however, public schools do not have adequate computer even for office work. This data is consistent with Elacqua, Gabierno, & Ibanez (2005) findings that showed class size, availability of adequate quality teachers and school facilities determines parental school choice.

5.1.3 Teaching and Learning Process

Table III. Assessment of Teaching/Learning Process in Schools

No	Type of Actions	Mean of respondents (N=100)	
		Public school parents (N=50)	Private school parents (N=50)
1	Teacher gives relevant homework/ assignment on all subjects	1.65	3.75
2	Teachers promptly mark the assessment	1.78	3.98
3	Teachers are ready to assist child	4.56	3.43
4	Teachers are friendly with child	3.98	3.78
5	Child complains about not understanding what teachers teach	4.12	3.76
6	Child complains about being beaten by the teacher	4.15	3.85
7	How often do you check your children school work	2.11	4.54
8	parents come to discuss their children academic performance	1.33	4.57

Mean $\leq$ 2.50 low; mean 2.51-3.75 average; mean 3.76 -5.00 high

As can be seen from Item 1 of Table III, the extent of giving assignments for children by the teachers on all subjects was rated low in public schools and high in private schools. Besides, teachers marked the assignment punctually in private schools than in public schools. However, the level of assistance given for the child and the degree of relationship teachers have with students as a father, mother and close friend was good both in public and private schools. Besides,

both in public and private schools child has more right to ask question regarding the subject matter and to complain not to be beaten by teachers. Finally, the extent of parental involvement in teaching and learning process was forwarded for informants. In this regard, private school parents were better involved than public schools in checking children school work and in discussing with teachers and school management about their children's academic performance. However, the finding of the study showed that parental involvement in supporting students at home and discussing on academic issue in public schools were low.

5.1.4 Students Academic Achievement

After taking into account differences on the availability, adequacy and usability of Education resources, the next issue assessed from school document was the result of students in grade 8 national examinations over the past 3 years.

Table 4. Grade 8 National Examination Result of Sample Schools

School's Name	2007/8			2008/9			2009/10		
	Admitted	Pass	Fail	Admit.	Pass	Fail	Admit.	Pass	Fail
Adama No. 3	498	404 (81.12%)	94 (18.88%)	670	524 (46.4%)	146 (53.6%)	518	236 (45.56%)	282 (54.44%)
Adama No. 4	456	321 (70.4 %)	135 (29.6%)	545	322 (59.1%)	223 (40.9%)	564	287 (50.9%)	277 (49.1%)
Nafyad Private	412	396 (96.1%)	16 (3.89%)	312	311 (99.68%)	1 (0.32%)	436	378 (86.7%	58 (13.3%)
St. Joseph Private	207	202 (97.6%)	5 (2.4%)	190	190 (100%)	-----	251	218 (86.85%)	33 (13.15%)

Source: Adama Town Education Office, 2010/11

As it can be seen in Table IV above, students in private schools achieve better result than public schools. This was also true for Coulson (1999) findings that said parental school choice in private schools are determined by academic quality and school's good academic performance.

Unexpectedly, however, one school board member from public school said that "the result of national exam doesn't necessarily show the excellence of private schools; it rather can be the outcome of the commitment of the child and may be the support given at home". He backed up this argument with the evidence that

almost all private school students were admitted at private school had to pass entrance examination at the beginning of the academic year.

6. Conclusion

This study explored the determinants of parental school choice in Adama town. The study showed that: national examination result, medium of instruction , attention given for foreign language, availability of educational resources, assessment policy of schools the strict follow up and support given to their child and child influence were the most important variables which affect parents' decision regarding selection of public or private school in the study area. Moreover, national examination results, the way children are treated, freedom of a child to complain, parent teacher relation, class size and teacher student ratio were also factors that determines parental school choices in Adama town.

In general, in most cases the findings of this research are consistent with the previous researches findings conducted in various countries and cited in this study. However, unlike the previous finding medium of instruction and the assessment policy of schools are found to be new factors that determine parental school choice in Adama town. Finally, the result of the finding implies the importance of government intervention in allocating adequate fund and the society ought to know that the current status of public schools is poor and they should participate in all educational matters. Besides, public and private schools should share their experiences with each other and work together to attain educational objectives.

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TECHNICAL AND VOCATIONAL EDUCATION STUDENTS' PERCEPTION OF GENDER ROLE DIFFERENCE

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ABSTRACT

This study is aimed at investigating perception of gender-role stereotypes and the associated factors for students in technical and vocational education and training (TVET) colleges. Specifically, it is to: determine the gap between female and male students' in perceiving gender role stereotypes, identify the socioeconomic factors bringing significant variance students' perceived gender-role stereotypes, and identify whether males or females are affected by perceiving gender role stereotypes. The study is important to revise and to implement TVET curriculum and strategy. Quantitative survey research method was employed for the study. The study participants were 310 students drawn from TVET colleges in Oromia Regional State using multistage sampling technique. Data collected using items of Likert scale format were analyzed using descriptive statistics, t-test, and analysis of variance. The result indicated moderately high pervasiveness of perceived gender-role stereotypes with no significant gender difference in perceiving gender-role stereotypes during employment. The socioeconomic factors, except income, have predicted participants' perception of gender-role stereotypes significantly. It implies,females are more prone to pursue masculine roles than males pursue feminine roles. It requires gender sensitization, particularly for males to build understanding of gender neutral career attainment.

Key terms: *Gender Stereotypes, Gender-inappropriate role, Perceived gender-role, Perceived employment opportunity*

INTRODUCTION

1.1 Background

This study is aimed at investigating students' perception of gender-role stereotypes (PGRS) and associated factors. Gender-based early skill training traditions in Ethiopia included cultural instructions to boys and girls by parents. Mothers give traditional home-based skill training and education to girls. Fathers give traditional skill training and knowledge on agricultural tasks to boys in the rural. Urban fathers instruct boys on hand crafts (Teklehaimanot, 1999).

However, society values the traditional skill training negatively and the skilled craftsmen are given low social status (Teklehaimanot, 1999). This situation might have a carryover effect on the modern skill trainings in the technical and vocational schools of the country that had been working since 1940's.The curriculum of the then modern technical and vocational education was organized and taught based on gender difference (MOE & Fine

Arts, 1944), until its reorganization in the year 2002. It involved purposeful gender differentiation in designing courses for boys and girls. As related to early traditions of career attainment, there was perception of the study fields in the TVET schools as "gender-appropriate" and "gender-inappropriate."

For the purpose of this study, the traditional "gender-based," grouping of the TVET study fields was used. The "gender-appropriate" study fields for females were related to Home Science, Secretarial Science and Nursing. The "gender-appropriate" study fields for males were related to Technical and Agricultural areas.The"gender-neutral" study fields were related to Business areas (MOE, 1973; writer's observation during pre-pilot survey at TVET School, April, 2008)**.**

1.2 Statement of the problem

It has been observed that TVET colleges face problem of admitting students to the traditionally "female study fields or male study fields." Currently, there is no investigation made onthe TVET Collegestudents' perception of gender role stereotypes related to their study fields in Ethiopia. Therefore, here are the basic research questions addressed in this study:

1. What is the magnitude of perceived gender-role stereotypes of the respondents?
2. Which elements of the socioeconomic factors bring about significant variance in the students' perceived gender-role stereotypes?
3. Which one of the genders is affected by perception of gender- role stereotypes more than their counter part?

1.3 Objectives of the study

The major objective of the study is to investigate the magnitude of the TVET school students' perceived gender-role stereotypes and factors associated to this effect. The specific objectives are to:

1. determine the magnitude of the incidence of female and male students' perceived gender-role stereotypes (PGRS)
2. identifythose socioeconomic factors varying significantly with PGRS.
3. identify if males or females are favored by the condition of PGRS than their counter part

1.4 Significance of the study

The result of this study may provide evidence on the extent of PGRS. Policy makers, curriculum designers, and teachers may use the evidences to revise TVET implementation strategies. It can be used as a base-line survey to conduct research on the issue of gender role perception about TVET.

1.5 Scope of the study

This study is delimited to the investigation of the magnitude of first year TVET School students' PGRS and factors related to this effect.

LITERATURE REVIEW

The prevailing societal and individual attitudes towards gender roles for boys and girls are more of traditional as cited in Canadian Apprenticeship Forum consultation report (January, 2004). In Ethiopia, culturally girls and boys have segregated job orientation (Teklehaimanot, 1999). Role divisions based on gender had been widely exercised in Ethiopia, at the disadvantage of women. Traditionally, in Ethiopian TVET schools, boyswere trained in technical (handicraft) courses and girls were trained in domestic sciences (GirmaZewdie, Mehari Haile, and NigatuFantaye, 1994).

Similar practices are also observed among societies' of the world in perceiving males and females as different in roles. For example, findings in India indicate a wide gender gap in education, skill development, and upward mobility (Sakhi Resource Center for Women, 2007). As stated in the same document, compared to men's attainment of these opportunities, the society of India gives low value to women in all socioeconomic opportunities. India exhibits a gender development index (GDI) of 0.591 (as of 2005 survey) which Fitzenbergery and Kunze (2005) argued that women suffer the double deprivation of overall achievement in human development.

METHODS

3.1 Research Design

The general research design employed for this study was descriptive survey research method.

Participants and Sampling Design

The study participants were first year students admitted to the regular program of all government TVET ccolleges of Oromia during 2008/09 academic year. Multistage sampling design (including simple & stratified random sampling techniques) was used to obtain 310 participants (160 females, 150 males) out of the 9707 total population (6506 females and 3201 males) TVET students in Oromia Regional State. The sample TVET Colleges were Adama, Ambo, Bishoftu, Fiche, and Metehara TVET Colleges.

3.2 Data collection Tools

Questionnaire items used were: Individual Data Form used to obtain demographic data, Likert-type scale, named PGD scale, used to measure PGRS, and additional items of closed and open types.

3.2.1 Standardization of the scale

Content validity of the scale was estimated using Lawshe's (1975) statistical method of estimating content validity ratio(CVR). The CVR result was 0.87. Analysis of pilot test data resulted in Cronbach alpha valueof 0.88 reliability estimate for the scale items. Five response options were assigned for the scale items. The scores were made to range from 1 to 5. The highest score indicated high magnitude of PGRS.

3.3 Methods of Data Analysis

The statistical techniques used to analyze the data were descriptive statistics, t-test, analysis of variance and stepwise multiple regression. The SPSS 15.0 for windows was applied for this purpose.

RESULTS AND DISCUSSION

4.1 Perceived gender-role difference

The age ofthe respondents ranged from 15-34 years. The majority of the respondents were within 15-18 and 19-22 age groups. The average age was 18.49 (SD = 1.64). Analysis of the data on PGD scale indicates moderate pervasiveness of perceived gender role stereotypes (PGRS) for the total respondents, $\overline{X}$ = 118.The maximum and minimum scores are 188 and 55, respectively.Themaximum possible score is 200 as indicated in

T-test indicates statistically significant difference between female and male respondents.The descriptive statistics in Table 2 displays that both male and female respondents in gender

appropriate study fields (TSFs) had reflected PGRS.

Table 1: Descriptive statistics and t-test valuefor scores on PGD scale by gender

Sex	N	$\overline{X}$	SD	Min	Max	t	P
F	160	116	22	55	182		
M	150	120	22	61	188		
T	310	118	23	55	188	2.6	.01

Table 2: Descriptive statistics for scores on PGD scale by TSFs and gender

Study Field	Female			Male		
	N	$\overline{X}$		N	$\overline{X}$	SD
TFSF	65	114.65	22.60	15	112.57	23.34
TMSF	54	119.90	21.72	97	120.91	20.66
SFTCB	41	113.24	21.66	39	122.73	22.95
Total	**150**	**116.04**	**22.17**	**141**	**120.54**	**21.65**
TFSF = traditionally female study fields; TMSF= traditionally female study fields; SFTCB= study fields traditionally common to both genders						

The ANOVA summary in Table 3 explains that F value for the main effect, study fields is statistically significant. Gender has no statistically significant influence. The difference among students in different fields of study is statistically significant on PGD measure.

Table 3: Summary of ANOVA for data on PGD scale by TSFs and gender

Source	Sum of Squares	df	Mean Square	F	P
Study Field	3373.833	2	1686.916	3.546	.029
Gender	880.061	1	880.061	1.850	.174
Gender by Study field	2580.719	2	1290.360	2.712	.067
Between Groups	4169.867	2	2084.934	4.348	.013
Within Group	295893.738	617	479.568		
Total	300063.605	619			

The F-ratio for interaction effect between gender and study fields is not statistically significant. F-test for the between groups mean score differences is statistically significant. This finding is similar to the finding in Lavy (2008) that male subjects were more normative and stereotypical in their thinking about the study fields.

4.2 Parental education as a factor

Male respondents from educated fathers were more normative compared to female respondents. The overall mean scores on PGD scale is highest for respondents whose fathers had diploma and lowest for respondents whose fathers had Primary education.

Table 4: ANOVA Summary for PGD scale data by mothers' education and gender

Source	Sum of Squares	df	Mean Square	F	P
Mothers' Educ	6531.533	5	1306.307	2.777	.017
Gender	173.191	1	173.191	0.368	.544
Mothers' Educ. by Gender	5307.598	5	1061.520	2.256	.047
Between Groups	5414.569	5	1082.914	2.257	.047
Within Group	294649.000	617	479.884		
Total	300063.600	619			

The main effect mothers' education has statistically significant association with respondents' mean scores. The main effect gender could not bring significant differences in the respondents' mean scores. The interaction of gender with mothers' education is not significant. The mean difference in the overall mean scores for the between groups effect in relation to mothers' education is only slightly significant. F-ratio for

the main effect, fathers' education is statistically significant. The F-ratio is statistically highly significant for the main effect, gender (see Table 5).

Table 5: Summary of ANOVA for data on PGD scale by fathers' education and gender

Source	Sum of Squares	df	Mean Square	F	P
Fathers' Educ	5984.073	5	1196.815	2.542	.027
Gender	4027.703	1	4027.703	8.555	.004
Fathers' Educ. by Gender	541 9.938	5	1083.988	2.302	.043
Between Groups	5329.705	5	1065.941	2.257	.047
Within Group	294638.100	613	480.649	2.218	.051
Total	299967.800	618			

The F ratio is statistically significant for the effect of two-way interaction between fathers' education and gender. The F-test for the between groups mean differences resulted in statistically non significant value for the overall mean scores across fathers' educational levels.

4.3. Parental occupation as a factor

The highest mean score on PGD is of the respondents from mothers of professional employee. However, respondents of mothers with no job also had relatively high scores. Conversely, subjects with the lowest mean score were from day laborer mothers for both female and male respondents. Respondents whose fathers had no job have the highest mean score. Among the male groups those respondents from professional fathers had the highest mean score. Female respondents with the lowest mean score were from day laborer fathers. Male respondents with the lowest mean score were from merchant fathers. On the other hand, the analysis of variance indicated statistically significant mean difference for the main effect, mothers' occupation (see Table 6). The main effect gender also had a statistically significant F ratio. However, no significant interaction effect was observed.

Table 6: Summary of ANOVA for scores on PGD scale by mothers' Occupation and gender

Source	Sum of Squares	df	Mean Square	F	P
Mothers' occupation	6641.564	5	1328.313	2.804	.027
Gender	2285.584	1	2285.584	4.825	.004
Mothers' occupation by Gender	2124.481	5	424.896	0.897	.043
Between Groups	5756.728	5	1151.346	2.402	.047
Within Group	294306.877	614	479.327		
Total	300063.605	619			

One-way ANOVA resulted in a statistically significant F-ratio. Post hoc test for the six groups of respondents in terms of mothers' occupation was statistically non significant. The significant main effects imply that mothers' occupational status had meaningful effect on the respondents' variation in PGRS. The analysis of variance of scores by fathers' occupation and gender did not yield in any statistically significant F ratios for both main effects and the interaction effects tested (Table7).

Table 7: Summary of ANOVA for data on PGD scale by fathers' occupation and gender

Source	Sum of Squares	df	Mean Square	F	P
Fathers' occupation	3660.836	5	732.167	1.551	.172
Gender	600.053	1	600.053	1.271	.260
Fathers' occupation by Gender	4331.442	5	866.288	1.835	.104
Between Groups	2088.200	5	417.640	0.869	.502
Within Group	293314.071	610	480.843		
Total	295402.271	615			

Application of one-way ANOVA resulted in non significant mean differences. This implies that change in fathers' occupational status had no relation with change in the respondents' PGRS.

4.4 Parental income as factor

The data on parental monthly income is obtained through self report items included in the questionnaire (Table 8). The table reveals that female respondents whose parents' monthly income was within the range of Birr 501 - 1000 had the highest mean score. Female respondents with the lowest mean score were from parents whose monthly income was Birr 2001 and above. Females' mean scores on PGD scale progressively decreased from low income parents to high income parents. This trend explains that female respondents from well-to-do parents are less sensitive to PGRS as compared to female respondents from lower income parents. For male respondents, no pattern is observed.

Table 8: Descriptive statistics of data on PGD scale by parental income and gender

Income	Female			Male		
	N	$\overline{X}$	SD	N	$\overline{X}$	SD
500 & below	30	116.10	21.05	34	120.64	25.58
501 – 1000	52	117.23	24.49	40	115.48	21.99
1001 – 1500	22	116.57	18.81	24	124.94	20.40
1501 – 2000	26	115.47	20.16	21	118.00	16.39
2001 & above	30	113.67	23.50	31	125.65	19.38
Total	160	115.97	22.17	150	120.56	21.65

F- ratio for the main effect, income, is statistically significant. The main effect, gender is statistically non significant for variation of the respondents in responding to PGD scale.

Table 9: Summary of ANOVA for data on PGD scale by parental monthly income and gender

Source	Sum of Squares	df	Mean Square	F	P
Income	1665.308	4	3794.557	7.934	.005
Gender	3794.557	1	416.327	0.870	.481
Income by Gender	3874.282	4	968.570	2.025	.089
Between Groups	1721.798	4	430.449	0.887	.472
Within Group	296673.838	611	485.555		
Total	298395.636	615			

The F-ratio for interaction effect between income and gender was statistically non significant. Moreover, one-way ANOVA resulted in statistically non significant F- ratio. This result partly contradicts with Salam's (2007) finding that socioeconomic status has contribution to his subjects' attitude towards gender-roles.

CONCLUSIONS

The data analyzed justifies that perception of gender role stereotypes was moderately pervasive for both female and male respondents. The respondents conform to the traditional norm of gender role stereotypes. PGRS has statistically significantly different for female and male respondents. PGRS, in general, and conformity to gender role stereotyping, in particular, is decreasing for females. Males show resistance to change their mind. It means males are more normative than females in maintaining the statuesque of males' dominance in the social roles. It implies wider gap between the current education and training policy issues, the strategy of training, thinking level and practices of students, parents, employers and other social agencies.

Parental education influences TVET students' perception of gender role stereotypes moderately. Mothers' education has some relationship with the students' perception of PGRS but influences females and males differently. Comparatively, fathers' education relates to students' PGRS more than mothers' education does. A specific finding worth mentioning is that male subjects whose fathers are better educated experience PGRS in employment more as compared to female subjects from fathers of the same educational level. The socioeconomic factors, except income, have predicted perception of gender-role difference highly significantly for both male and female groups. It was generalized that females were more prone to pursue masculine roles than males pursue feminine tasks.

RECOMMENDATIONS

The objectives achieved in this study helped to recommend the following:

1. Ethiopia has a promising policy to achieve the objective of gender equality through TVET for career attainment. It needs gender sensitization practices to alter the current biased perception of jobs as gender-appropriate/ gender-inappropriate" from the mind of the society.
2. There should be attitude change through provision of community based education and guidance services aimed at disclosing the societal tradition of limiting social roles to either male or female group.
3. In order to minimize the number of unemployed female and male graduates of TVET Schools, gender neutral job attainment ideology should be inculcated.
4. Automation of the traditional manual labor in the home science fields and the industrial fields requiring physical strength enhances attainment of societal norm of gender neutral career aspiration.
5. Labor market of all occupations should invite both females and males at equal ease in terms of work conditions.
6. For the required paradigm shift of the traditional culture of gender-based career attainment to modernized culture of gender neutral career attainment TVET program organizers of all levels, have to work on creating awareness and in developing positive attitude toward equality of all jobs.

7. Detailed investigation has to be made in order to identify why educated fathers and well to do parents tend to preserve the traditional gender-role stereotypes.

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PERCEPTIONS OF STUDENTS AND INSTRUCTORS TOWARD EFFECTIVE TEACHING PRACTICES: THE CASE OF SELECTED UNIVERSITIES IN ETHIOPIA

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ABSTRACT

The purpose of this study was to explore perceptions of students and instructors toward effective teaching practices in selected universities of Ethiopia. To conduct the study, a mixed research method was employed. The study was conducted in four experienced universities and the data were collected from 69 students and 64 instructors of the sample universities. In selection of the sample population, systematic and random sampling techniques were used. The main instruments of data collection were interviews and questionnaires. The data were analyzed using percentage, mean and standard deviation. The findings of the study revealed that instructors and students have positive perception toward effective teaching. Effective teaching was regarded as respectful, interesting, and caring about students' success. Good teachers were regarded as those who are friendly, love their subject, encourage questions and discussions, are fair in their evaluation, well prepared and organized, and make difficult subjects easy to learn. The findings also showed that, by contrast, ineffective instructors are unplanned, unknowledgeable, unapproachable, boasting, and biased in their evaluation of their students' performance. Finally, recommendations were forwarded based on the major findings so as to minimize the problems observed and maximize the implementation of effective teaching.

Key words: *Effective teaching, instructors, perceptions, practice, universities.*

INTRODUCTION

The government of Ethiopia has placed great emphasis on quality education and effective teaching. It recognizes effective teaching as an essential component for development needs of the society. Effective teaching and learning require the use of different methodologies and strategies to meet the demands of the students. The recent policy of quality improvement focuses on the complex interaction that takes place in the teaching-learning process at the university level to emphasize effective teaching (MoE, 2005). When students' and teachers' perceptions towards effective teaching are analysed, it is found out that they vary regarding their perspectives of effective teaching: some are concerned with student-centered issues such as motivation and classroom climate while others have made their concerns on instructional and management techniques (Tootoonchi, Lyons & Hagen, 2002). In this study, the focus is based on perceptions of students and instructors toward effective teaching practices. Effective teaching is lecturing that creates an environment in which deep learning outcomes for students are made possible, where high quality student learning is promoted and where superficial approaches to learning are discouraged (Hay,

2000; Raymond, 2001; Witcher, Onwuegbuzie & Minor, 2001). The characteristics of effective teaching based on personality view encompass personal human qualities such as intelligence, self-confidence, fairness, respect, caring, sensitivity, flexibility, enjoyment of students, open-mindedness, friendliness, providing individual attention, kindness, enthusiasm, having a good sense of humour, making learning interesting, being serious, being hospitable towards students, teaching style, trust, credibility, and even teacher attractiveness and height (Oredbeyen, 2010; Okpala & Ellis, 2005). Regarding ability characteristics, researchers believe that effective teaching can be defined in terms of an embarrassment of skills and behaviours (efficient, reflective, insightful), knowledge (content, pedagogical, social, tacit knowledge), and experience of good teachers (Beishuizen, Hof, vanPutten, Bouwmeester, & Asscher, 2001; Berk, 2005; Cheng, Mok, & Tsui, 2001; Raymond, 2001).

Effective teaching is an art and not an easy endeavour. Recent findings shed light on two characteristics of effective teaching: their personality and their ability. From the personality perspective, an effective teaching is the one which demonstrates *"... closeness, warmth, and enthusiasm (immediacy) ... perceived physical and psychological closeness of the instructor to the student* …" (Walls, Nardi, vonMinden & Hoffman, 2002:40). From the ability perspective, the crucial factors of effective teaching are being skilled, knowledgeable and experienced (Beishuizen, et al., 2001; Hay, 2000). Effective teaching knows how to create an effective learning environment by being organized, prepared, and clear (Cheng, et al, 2001; Torff, 2003; Walls, et al., 2002). Therefore, the main objective of the present study was to assess perceptions of students and instructors toward effective teaching practices, with the intent of comparing their responses to cross cultural descriptors provided in empirical studies.

Statement of the problem

Education systems seek to provide instructors with opportunities for on-going professional development to fully prepare them for their effective teaching and to retain a high-quality instructor workforce. This study examined the take-up of professional development, that is, the degree of unsatisfied demand for effective teaching and the factors that support or hinder meeting development needs. The belief of instructors and students shows that strong university-level evaluation tends to nurture and improve effective teaching, which in turn can lead

to improvements in the quality of education. This is true not just for evaluation in general but for specific aspects of effective teaching such as teaching students from diverse backgrounds.

This study was conducted on engineering instructors and students because this field is given emphasis by the government. The researcher has observed students complaining frequently about their instructors being ineffective. Instructors' perceptions, practices and attitudes are important for understanding and improving educational processes. The researcher focused on examining a variety of these issues which previous research has shown to be relevant to effective teaching practices. In addition, the differences between instructors' and students' views regarding effectiveness and characteristics of instructors and experiences have inspired the researcher to conduct this study. The researcher decided to explore perceptions of effective teaching practices because instructors' and students' perceptions and beliefs can lead to change and improvement.

Objectives of the study

This study was aimed to respond to issues with regard to engineering education at selected universities in Ethiopia. In particular, the study has attempted to:

- explore the relationship between effective teaching and the instructors' personality and ability;
- assess students' and instructors' perceptions of effective teaching practices;
- examine predominant instructors' characteristics perceived by the study participants to describe effective teaching;
- identify whether instructors' characteristics have any effects on effective teaching;
- provide useful information to instructors on teaching approaches and instructor characteristics that affect effective teaching.

Accordingly, this study is designed to address the following questions:

1. What are students' and instructors' perceptions of effective teaching?
2. To what extent are students' perceptions of effective teaching similar to those of instructors?
3. To what extent are students' perceptions of ineffective teaching similar to those of instructors?
4. Are the descriptors used to describe effective teaching focused more on the ability or on the personality view?

Significance of the study

The results obtained and implications drawn could be beneficial to instructors who are receiving students from all corners of the country to better understand the needs of students from another culture in the classroom environment. In addition, the researcher considers this work as a helpful guide to those who are involved in the development of future research on similar settings. In view of the above, this study will help university instructors, students, academic department heads, deans, the Ministry of Education, the Regional Education Bureaus and other concerned bodies to design preventive and rehabilitative measures regarding problems influencing successful implementation of effective teaching practices and instructors' characteristics in engineering education.

Definition of the terms

Effective teaching/instructor– is synonymous with, successful, outstanding, expert, good, above average, superlative, and superior teaching. Other 'criteria' used throughout this study is the synonymous terms effective/excellent teaching and teaching excellence/effective.

Perception: the view/feeling of instructors or students on the implementation of active learning.

Personality traits – can be described as the inherent skills each unique, individual human being possesses inside. Examples would include passion for one's subject matter, sensitivity to students' needs and friendliness to students.

Ability skills – can be described as learned or practiced cognitive and psychomotor skills such as the ability to operate a computer or an overhead projector, or the ability to effectively relate difficult theoretical topics to real-life examples.

Instructors' characteristics –an effective university level instructor is one who demonstrates closeness, warmth and enthusiasm; perceived physical and psychological closeness of the instructors to the students. Effective instructor is being skilled, knowledgeable and experienced in teaching-learning activities.

Experienced university*:* In this study, it includes university, which service more than 20 years.
Perceptions: It includes attitudes of instructors and students toward effective teaching.

MATERIALS AND METHODS

Research design

A mixed-method approach using a survey design for obtaining descriptive statistics supported by a qualitative investigation was employed because of the complexity of the research issues. Further, the researcher primarily selected descriptive survey method because it is found to be the most appropriate technique for collecting vast information and opinions from quite a large number of respondents (Creswell, 2009).

Sampling techniques

The sample universities (Adama, Addis Ababa, Haramaya and Hawasa) were conveniently selected, for the researcher had contact persons for easy data collection. The sample for this study was selected using systematic and random sampling techniques.

Sources of data

The primary sources included in this study were engineering students and instructors, deans and vice deans, and department heads selected from the four experienced sample universities. The secondary sources for the present study were printed materials.

Sample size and sampling procedures

According to the information obtained from the sample universities, a total of 690 fourth year students and 106 instructors were available in the universities. Accordingly, 69 or one-tenth of the senior year engineering students and 64 or three-fifth of the instructors were included in the study. In order to secure additional information, three classes were observed three times. Furthermore, the three observed instructors and three students were interviewed. All together, 68 students and 64 instructors were included in the study.

Instruments

Three main instruments of data collection, namely, questionnaire, classroom observation and interview were used in the study.

Questionnaire: The questionnaires were prepared and completed by engineering instructors and students. The questionnaires implemented a four point Likert Scale with the following meanings: 1=Not Important (NI), 2= Somewhat Important (SI), 3= Important (I), 4= Very Important (VI).

The questionnaires had three parts. The first part of the questionnaire was intended to gather background information of the instructors and students. The second part of the questionnaire consisted of items that intended to examine instructors' and students' perception of effective teaching. The third part was about the practices of effective teaching strategies. The researcher validated the instruments that were developed as follows. Before the actual data collection, the instruments were given to colleagues so as to get valuable comments and criticisms on the strengths and weaknesses of the items. Based on their comments, necessary modifications were made and given to the thesis advisor for further comments, criticisms and evaluation. Then, the instruments were tried out in small-scale study that was undertaken in a similar university. The total number of participants in the pilot study was 5 instructors and 15 students. After administering the instrument, some participants were asked for feedback. Based on their feedback, some of the questions were refined. The reliability of the instruments was tested by Cronbach alpha method. The computed reliability of the instruments was 0.81. Thus, the instruments were found reliable to collect data for the main study and then administered as scheduled.

Classroom Observation: observation in the actual classroom teaching and learning process was used as data gathering instrument. For the purpose of observation, checklist was employed. Based on this, the three selected classes were observed three times each. Hence, a total of 9 observations were marked using the checklist developed for the purpose. The observations were focusing on instructor-student interaction in relation to effective teaching, classroom facility, student population in the classroom, instructors' and students' activities.

Interview: to supplement the data obtained through questionnaire, the researcher conducted interviews with department heads, deans and students using open- ended questions, which are related to knowledge and practices of effective teaching.

Procedures: The researcher adopted three steps in collecting the data for the study. First, relevant literature was reviewed to get adequate information on the topic. Second, objectives and research question were formulated to show the direction of the study. Third, data gathering tools were developed and piloted. After the questionnaire had been distributed and collected, classroom observations took place. Finally the interview with instructors and students was conducted.

Methods of data analysis

The data collected through different instruments (questionnaires, observations and interviews) were organized, presented in tables and then analyzed statistically using statistical methods. Presenting Likert Scale is of benefit in understanding the results since all judgments and comparisons are based upon it. Means, ranks, standard deviations and minimum/maximum counts were derived for each individual question. This data was then manually collapsed and average rating comparisons were made between how the four population groups rated personality and ability measures.

RESULTS AND DISCUSSION

Research question one: *What are students' and instructors' perceptions of effective teaching?* Since the questionnaire items were categorized under two separate categories of effective teaching characteristics (*personality and ability*), the results are presented in two different tables (Table 1 for *personality* & Table 2 for *ability*) and addressed in separate sub-sections. In describing effective teachers, respondents identified six personality characteristics that were perceived 'Very Important' (VI): effective instructors are *respectful of their students (M=3.73); make classes interesting (M=3.70); are fair in grading and evaluating student work (M=3.67); care about students' success in their course (M=3.56); show that they really like the subject they teach (M=3.53), and are friendly to students (M=3.50)* (See Table1). Also worthy of mentioning is the fact that all remaining personality characteristics of effective instructors were perceived by the respondents to be 'Important' (I). Thus, each one of the 11 personality characteristics specifically designed for the questionnaire was rated either 'very important' or 'important'. This indicates that all personality characteristics that make effective teaching reflected by the respondents were essential (average mean of 3.37, Table1) to the entire sample population to describe effective teaching.

Table 1: Personality traits measure of effective teaching by entire sample (α=0.05)

Personality characteristics	Min	Max	Mean(M)	Rate	S D	Rank
. … are respectful of their students.	1	4	3.73	VI	0.538	1
. … make classes interesting.	1	4	3.70	VI	0.522	2
. … are fair in grading and evaluating student work	1	4	3.67	VI	0.612	3
. … care about students succeeding in their course.	1	4	3.56	VI	0.632	4
. … show that they really like the subject they teach.	1	4	3.53	VI	0.713	5
. … are friendly to students.	1	4	3.50	VI	0.735	6
. … welcome students' opinions/ suggestions.	1	4	3.38	I	0.682	7
. … are available to help students outside of class.	2	4	3.33	I	0.693	8
. … use humour in the classroom.	1	4	3.33	I	0.781	10

. … make an effort to get to know their students.	1	4	3.11	I	0.794	10
. … have a unique teaching style.	1	4	3.11	I	0.049	11
Average of means			**3.37**			

Thus, instructors' and students' perceptions towards effective teaching closely matches the high (2nd place) ranking of Feldman's trait "is concerned with, is friendly to and respects students" and matches the results from studies conducted by other researchers (Saafin, 2005; Raymond, 2001). As seen in the literature review, other researchers also report that instructors must demonstrate respect for their students from the moment of first encounter for effective teaching to transpire (Colker, 2008; Day, 2004 & Hay, 2000). Respect for students emerged as the highest trait mentioned in the qualitative, open-ended portion of the questionnaire.

The importance of this trait to effective teaching has been discussed methodically in the literature reviewed (Beishuizen *et al.,* 2001; Day, 2004; Miller, *et al.,* 2001; Raymond, 2001; Saafin, 2005). The fourth highest rated personality characteristic of effective teaching emerged from this study was "caring about students succeeding in their course" and it was also ranked the fourth highest, according to the open-ended question of the survey instrument. Students ranked this trait as their second most important indicator of teaching effectively. Making a link between this study's results and the literature, Borich (2000) describes effective instructors are those who "… provide a warm and encouraging classroom climate by letting students know help is available". Following on from the previous findings, students rated this trait as their premier characteristic, while the more experienced, more independent students ranked this item 6th of the eleven personality characteristics measured in the questionnaire (Berk, 2005 & Cheng et al., 2001). According to the study, three ability attributes emerged as dominant (very important) by the study participants to describe effective teachers: they *encourage students' questions and discussion (M=3.70); are always well prepared and organized (M=3.60); and make difficult subjects easy to learn (M=3.50).*

Table 2: Descriptive statistics of the ability characteristics measure of effective teaching by entire sample (α=0.05)

Ability characteristics	**Min**	**Max**	**Mean**	**Rate**	**S D**	**Rank**
. … encourage students' questions and discussion.	1	4	3.7	VI	0.62	1
… are always well prepared and organized.	2	4	3.6	VI	0.62	2
… make difficult subjects easy to learn.	1	4	3.5	VI	0.69	3
… have expert, up-to-date knowledge of their subject.	1	4	3.4	I	0.73	4
… require students to think critically.	1	4	3.4	I	0.69	5
… expect students to become independent learners.	1	4	3.3	I	0.73	6
… give frequent feedback about student progress.	1	4	3.2	I	0.71	7

… encourage students to learn in pairs/groups.	1	4	3.0	I	0.89	8
… maintain strict control over the class.	1	4	2.8	I	0.78	9
… use the latest computer technology in their teaching.	1	4	2.5	I	0.98	10
… give many quizzes and tests.	1	4	2.3	SI	0.81	11
… have many years of teaching experience.	1	4	2.2	SI	0.96	12
… assign a lot of homework.	1	4	2.0	SI	0.74	13
… lecture (talk) for the entire class period.	1	4	1.7	SI	0.87	14
Average of means			**2.89**			

Results from the open-ended question also indicate the importance of being prepared for instructors to deliver well-organized materials and lessons to their students. The literature review meta-table ranks this practice as the 4th most important ("explains using simple terms") and shows it was important to preceding researchers (Barnes & Lock, 2010; Walls et al., 2002).

Research question two: *To what extent are students' perceptions of effective teaching similar to those of instructors?* Even though numerous matches appeared amongst the respondents regarding effective teaching, some minor mismatches did surface.

Table 3: Major matches between instructors and students in descriptors used to describe effective teaching

Personality characteristics of effective teaching	Student rating	Instructor rating
Make classes interesting	VI	VI
Are respectful of their students	VI	VI
Are friendly to students	VI	I
Care about students succeeding in their course	VI	VI
Show that they really like the subject they teach	I	VI
Are fair in grading and evaluating student work	I	VI
Are available to help students outside of class	I	I
Welcome students' opinions/suggestions	I	I
Make an effort to get to know their students	I	I
Have a unique teaching style	I	SI
Use humour in the classroom	I	I

Both group of respondents (students & instructors) consider *making classes interesting, being respectful of students, and caring about students' success* to be 'very important' (VI) or predominant characteristics of effective teaching (Table 3). Furthermore, both respondents share the perception that effective teaching is exhibited by instructors who remain available to students outside of class, who are open to students' input, who make efforts to learn their students' names, and who employ appropriate humour in the classroom. Three other personality items– *being friendly to students, demonstrating that they like their subject, and being fair when dealing with students* – were also considered as either 'important' or 'very important' to both groups. This once

again suggests a high degree of similarity in their opinions of what constitutes effective teaching (Cheng et.al. 2001; Oredbeyen, 2010).

Both respondents (students & instructors) consider effective instructors to be always well prepared for their classes and have the ability to make difficult topics easy to learn (Table 4). Despite this finding, however, it can be reasonably concluded that student and instructors perceptions of what constitutes effective teaching are to a large extent very similar. Other sub-group differences which have emerged will be discussed below.

Table 4: Major matches between instructors and students in descriptors used to describe ability characteristics of effective teaching

Ability characteristics of excellent teaching	Student rating	Instructor rating
Are always well prepared and organized	VI	VI
Make difficult subjects easy to learn	VI	VI
Have many years of teaching experience	I	SI
Encourage students' questions and discussion	I	VI
Have expert, up-to-date knowledge of their subject	I	I
Require students to think critically	I	VI
Give frequent feedback about student progress	I	I
Expect students to become independent learners	I	I
Maintain strict control over the class	I	I
Encourage students to learn in pairs/groups I	I	I
Use the latest computer technology in their teaching	I	SI
Give many quizzes and tests	I	SI
Lecture (talk) for the entire class period	SI	NI
Assign a lot of homework	SI	SI

To support the data from the questionnaire and to better understand the characteristics of effective teaching, the interview questions were used and elicited responses such as:

S1: In my opinion, an effective teacher is the one who is strict and controls the class, has a unique teaching style, and gives many quizzes or tests.

S2: An effective instructor gives many tests and frequent feedback to students.

Instructors, on the other hand, rated the ability characteristics of requiring students to become critical thinkers, encouraging questions and discussion as well as expecting students to become independent learners as 'more important' than did their young charges who are likely to be inexperienced with these concepts of higher education. Responses to the open-ended questions in the questionnaire help us to understand instructors' perspectives of these attributes: ***In1****: An effective instructor should regularly succeed in inculcating a love of knowledge.* ***In2****: An effective instructor is one who understands the student needs and learning preferences and, thus, can facilitate high-order thinking in the learning process.* Relative to how instructors assess encouraging students' questions and discussion, as well

as to the importance of assisting students to become independent learners, instructors had this to say: ***In1****: An effective instructor is one who is always open-minded–who actually welcomes students' questions, opinions, and suggestions, and one who uses what students say and contribute to bringing the learning process to life!* ***In2****: … listen to them, have time for students outside of class, be creative and fun in class, be a friend and an instructor.* ***In3****: The ability to motivate students to learn.* Thus, findings from this study appear to correspond with what Beishuizen *et al.* (2001:185) found in their study conducted in the Netherlands. Similar to students in this study, primary students in Holland "… described effective instructors primarily as competent instructors, focusing on transfer of knowledge and skills …" whereas secondary students and instructors at the same institute in Leiden "… emphasised relational aspects of effective instructor …" reflecting what has just been discussed with the instructors' comments. Furthermore, "Young students displayed an ability view while mature students and instructors showed a personality view on instructors" (Beishuizen *et al.*, 2001:196).

Finally, a comparison of the significant differences between the students and instructors views indicate that instructors rated six ability characteristics to be more important indicators of effective teaching than did their students. Instructors would more likely describe the effective instructor as one who requires students to think critically, encourages students to work in small groups or in pairs, gets to know their students, and encourages students' discussion and questions. To help us identify with the environment at the time the study was conducted, the following quotes taken from the open-ended qualitative questions are presented: ***In1****: Someone who can get the students to question ideas/concepts –create a genuine interest in learning. Someone that "pushes" the students to do their best.* ***In2****: Student-centered learning manoeuvres that guide students to independent knowledge and skills acquisition.* ***In3****: … engage the students in critical thinking and new ways of looking at the world & their learning who then reflects on the process & seek ways to improve. In4: Interact with students on a professional and personal level.* Students, on the other hand, would place more emphasis on ability descriptors of effective instructors such as being current with the latest technology and up-to-date with their subject knowledge. As it has seen in the literature review, opportunities to work in groups were also reported as a learning preference by students according to Saafin (2005), and Raymond (2001).

Research question three: *To what extent are student perceptions of ineffective teaching similar to those of instructor?* To answer this question, descriptive data that was collected through interviews and respondents' answers to an open-ended question of the questionnaire was compared. Information extracted from interviews and open-ended question, it can be observed that students' and instructors' perceptions of ineffective teaching coincide with regard to a number of attributes.

Both groups describe the ineffective instructor as someone who does not respect his/her students, does not care, is boring, can not explain the subject matter well, is unprepared for class and is unfair in grading . Table 4.5 below, which compares the characteristics of effective teaching extracted from research question alongside the results of the ineffective instructor revealed from the interviews and open-ended question, suggest that at least to the population sampled in the selected universities, Ethiopia, there is agreement that study participants do view the two extremes as polar images of each other.

Table 5: A comparison of effective and ineffective teaching characteristics

Effective instructors (Results of research question 2)	Ineffective instructors (Results of research question 3)
Are respectful of their students	*Are disrespectful of students*
Care about students succeeding in their course	*Don't care if students understand*
Make classes interesting	*Are boring*
Make difficult subjects easy to learn	Cannot explain well
Are always well prepared and organized	Are unprepared for class
Are fair in grading and evaluating student work	*Are unfair in grading*

Note: personality measures are highlighted in *italicized* **bold** font.

The first descriptor of the ineffective instructor to emerge from Table 5, above is disrespectful of students. This finding is particularly interesting for three reasons. First, it represents a very close match in that it appeared with nearly the same frequency in both students' and instructor's data from the open-ended question. Second, supportive evidence is provided for researcher earlier argument in favour of the mixed-methodology approach to the questionnaire instrument wherein it was claimed that unforeseen and beneficial results can often be revealed by the use of qualitative methods. Third, it was indeed an unexpected result since the researcher had not anticipated that lack of respect would be an issue raised by students in answering the open-ended question, especially in the level where this study was conducted. An uncaring instructor would most likely meet with resistance and minimal academic performance from his or her students. However, even though researcher's observations stem mainly from teaching experience in an Ethiopia context, it appears that this characteristic is not unique to the universities. One student said:

> *The bad instructor is not concerned about the students. Researcher: What do you mean? Student: I mean he/she can't tell when someone is distracted in class because he/she doesn't care of this guy. For me I don't usually work hard for an instructor that has no care to me … or doesn't ask me if I have a personal problem or not. An engineering instructor said: Oh!!! To tell you the truth, I have a well developed Emotional Quotient(EQ), so for me an ineffective instructor would be someone who didn't show his/her emotional side … who was uncaring, frigid, unfeeling, lacked compassion … actually, it's just the opposite of what I've just answered in effective instructors. Researcher: Are you saying that the characteristics of the effective instructors are merely the opposite of the ineffective one? Instructor: Essentially, yes!*

Previous research on teaching effectiveness has established caring as an important factor in distinguishing between good and ineffective teaching. "Is concerned with, and is friendly to …" have been reported by other authors as an essential personality component (Saafin, 2005; Walls *et al.*, 2002). This is consistent with Brookfield's in Saafin (2005) argument discussed in the literature review, that effective teaching requires the instructor to relate new concepts to something that is familiar to students. Thus it can be concluded that unless an instructor can explain his/her topic in a meaningful manner, effective learning will be unlikely to transpire in the classroom or lecture hall. Respondents in this study described ineffective instructor as being unprepared and disorganized. For example, Saafin (2005) would all agree that effective instructors must be prepared and organized. If instructors fail to capitalize on this opportunity, students will rapidly lose interest and respect, causing the instructor to resort to wielding power in an autocratic manner in order to maintain classroom order. Last in this discussion of features describing the ineffective instructor is being unfair with grades (Barnes & Lock, 2010).

Research question four: *Are the descriptors used to describe effective teaching focused more on the ability or on the personality view*? Of the 25 questionnaire items utilized to evaluate respondents' opinions of effective teaching characteristics, 11 were purposely designed to reflect personality traits while 14 were included to measure ability characteristics. The average of means of the personality measure was calculated as 3.4 whereas the average of means of the ability category was less than 2.9. In addition, by examining column one in Table 6 below which represents findings from two different sources, two of the top six ranked traits are the top ranked personality characteristics.

Table 6: A comparison of the six highest ranked characteristics of effective teaching across respondents (students & instructors) sources

Questionnaire	**Transcribed interviews**	**Open-ended question**	**Literature review**
1. Are respectful of their students.	1. Makes lessons understandable	***1. Makes class interesting/fun***	***1. Is enthusiastic for subject/towards teaching***
2. Make classes interesting.	***2. Is friendly to students***	***2. Is friendly to students***	***1. Is available to help students***
3. Are fair in grading and evaluating student work.	***2.Respects students***	3. Really knows subject knowledge	***2. Is concerned with, is friendly to, and respects students***
4. Encourage	***3. Encourages***	***4. Cares about***	***2. Is open to students' opinions,***

students' questions and discussion.	***students***	***students' learning***	***ideas and discussion***
5. Are always well prepared and organized.	***4. Makes classes interesting/fun***	5. Makes lessons understandable	***3. Stimulates interest in course/subject***
6. Care about students succeeding in their course.	5. Makes students think	6. Is well prepared for class	3. Encourages students to think critically
			4. Is prepared, organized
			4. Is knowledgeable of subject
	6. Answers all students question		4. Explains using simple terms
			5. Is sensitive to and concerned with class level and progress
			5. Is fair and impartial in marking/evaluating students
	6. Really knows subject knowledge		6. Provides frequent, prompt, useful feedback
			6. Is dedicated, committed

Note: personality measures are highlighted in italicized bold font.

It can be observed that from the transcribed interviews of study respondents, 54% of the traits mentioned by instructor and student respondents were attributed to personality measures while the remaining 46% were categorized as ability, indicating that when verbally discussing effective teaching traits, respondents in this study slightly favoured personality traits. Of the two comparative measures, personality traits were indicated to be more dominant than ability characteristics when both instructor and student respondents described the characteristics of the effective instructor in the open-ended question. Out of the 46 attributes which were synthesized, 71% were classified as personality characteristics while ability characteristics occupied the remaining 29% of the total characteristics extracted from the questionnaire. As can be seen from column three in Table 4.6 above, personality measures occupy the top two of the first six characteristics reported in the open-ended question found in the questionnaire. Consistent with the results of the questionnaire and with the transcribed interviews, personality measures are once again indicated to be the more frequently mentioned of the two by the study respondents.

CONCLUSIONS

The findings of this study support the results of previous studies on teaching effectiveness which demonstrate that many traits or practices are common, regardless of culture, age, and/or academic discipline. Results from research question one which attempted to capture predominant characteristics of effective instructors have revealed that all of the predominant personality and

ability measures used by this study's respondents to describe effective teaching coincide with principal characteristics revealed in the literature review. Common personality characteristics of effective teaching therefore appear to be: *demonstrating respect to students, delivering interesting classes, caring about students' welfare, exhibiting a love for the subject being taught, and being friendly to students*. Common ability attributes of effective teaching are demonstrated by educators who *encourage two-way communication with students, are organized and well-prepared, and present topics in ways that students can relate to and easily understand*. Instructors who are aware of students' expectations and are willing to amend their behaviours based on student feedback are armed with important knowledge to dismantle walls of miscommunication. Improved communication and understanding between students and instructors will enhance classroom environments, lead to higher instructors' ratings, and knowledge transfer, improve retention of students and ultimately, boost institute reputation and image.

Research questions two and three examined the degree to which student perceptions of effective and ineffective instructors are similar to instructors' perceptions. The two questions, to be discussed jointly, were included in this study to attempt to determine if differences in opinion exist at the institute under study between instructor and student respondents in their opinions of what constitutes effective and ineffective teaching. Question three was purposely designed to assess respondents' opinions to determine if mirror images of the effective instructor were held by study respondents as well as to determine effective attributes from an alternate approach. Only two personality traits appear to have raised significant differences of opinion between the study's two population groups. Instructor respondents rated the use of humour in the classroom to be an essential ingredient to effective teaching in contrast, engineering students, with less developed Engineering skills needed to interpret humour, understandably placed a low value on this quality. Having a unique teaching style is perhaps being expressed by inexperienced students who are expecting to be entertained in the classroom or those do learn more effectively from instructors who vary their instructional delivery. This leads us to the suggestion that instructors who employ a variety of methods of communication in the classroom may concurrently improve knowledge transfer and secure higher student ratings on their assessments.

The instructors' expectation of students to interact in two-way dialogue at their university was encouraging to see, lecturing is not viewed as a favourable method of effective teaching according to both the literature results and the study's respondents. The lower rating of this trait by students

is probably once again an example of students' inexperience with this manner of communication, and with their expectation or misconception that university classes are of the lecture format. Student and instructor respondents agreed on a number of characteristics they believe distinguish the effective from the ineffective university instructor. Both students and instructors regarded the effective quality to treat learners with respect and caring as very important. The respondents' perceptions also correspond with regard to making classes interesting, caring about their students' success, demonstrating a love for teaching and being friendly. Thus, according to these study respondents, both skills and affective factors are necessary virtues to paint a portrait of the effective university instructor. As we have seen above, all of these personality and ability factors used to describe effective teaching were highly compatible with the literature reviewed for this study.

Conversely, instructors rated "the ability to think critically" ,"being fair in grading", "encouraging students' questions and discussion", and "expecting students to become independent learners" as more important compared to the students' rating,. From this potentially important finding and it can be concluded that instructors' judgments of effectiveness are founded on strong pedagogical principles and the acquisition of a more global view of education learned in their professional development programs. Further, according to this study's respondents, ineffective instructors are: *disrespectful of students, do not care, are boring, can not explain topics well, are unprepared for class and are unfair with their grading*. What has resulted from examining the characteristics of ineffective instructors has produced mirror images of most of the traits that were considered predominant effective teaching measure by the same sample population.

Finally, the findings of this study conducted in the selective universities, are consistent with past researches conducted at various locations around the globe. Findings support a widespread view that certain personality and ability traits are critical to effective teaching. Both personality and ability characteristics are used by respondents in describing effective and ineffective teaching, with personality traits appearing to be the more important of the two. Most instructor respondents appear to be aware of their students' expectations of requisite ingredients for teaching effectiveness.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made. First, induction programs for new instructors entering university, particularly engineering departments in the universities of Ethiopia should include a discussion of the impact of established, objective and unalterable evaluation and grading procedures on students who might be unfamiliar with this approach. Vital communications such as this could avoid potential conflict with students receiving their mid-or final semester grades, and thus improve classroom relationships.

Second, this study could provide university policy makers with an applicable list of effective teaching characteristics to help them design appropriate, sensitive and reliable instruments to evaluate and encourage teaching effectiveness of their instructors. Since both student and instructor perspectives have been ranked in order of importance, a valid evaluation form of teaching effectiveness used by students and administrators to evaluate their instructors could be developed. If the same form is used by both administrators and students to evaluate instructors, the students' feedbacks are more seriously consider, thereby administrators could become more enlightened as to the constantly evolving demands of the classroom environment, and thus validity of the evaluation instrument could be ensured. Second, attributes of what constitutes effective teaching in the eyes of the students specific to the universities where this study was conducted could become a valuable part of recruitment and in-service offerings. Providing such information and training to new and/or adjunct instructors as well as to veteran instructors with consistently low student ratings could contribute to student satisfaction and improved learning, better instructors' performance, institute reputation for the provision of service excellence, and improved student retention.

Third, this study may impart valuable information to universities and curriculum program development specialists by providing them with the results of university students' and instructors' perspectives in universities environment to guide them in creating more effective and culturally sensitive education programs. Equally important, if the attributes of what is required to be effective instructors are made available to students considering the teaching profession prior to their commitment to the program, frustration, loss of self-esteem and waste of time and money could be reduced. Similarly, attrition rates from university programs could be reduced if job performance criteria were made transparent to potential instructors prior to their commitment to the program.

Fourth, results of this study could be used in proper preparation for instructors entering the classroom environment as an instructor for the first time could include not only what constitutes effective teaching and as well as instruction and training on how to aspire to those characteristics, but also create an awareness that student perceptions are similar to instructor perceptions and are considered in research to be valid. Finally, the results of this study could also be used to develop workshops to disseminate information on what constitutes effective teaching throughout the Ethiopian universities and made available to all who opted to attend.

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