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Research Articles

The Influence of Organizational Justice on Organizational Commitment of Instructors in the Public Universities in Amhara Region

Shimelis Mesfin Teshome[a1], Getnet Demissie Bitew (PhD)[b], Tilahun Gidey Gebremeskal (PhD)[c]

[a] PhD. Student, Dept. of Educational Planning and Management, Bahir Dar University
[b] Associate Prof., Dept. of Educational Planning and Management, Haramaya University
[c] Associate Prof., Dept. of Psychology, Bahir Dar University

Abstract

The purpose of this study was to examine the influence of organizational justice (OJ) on organizational commitment (OC) of instructors in the public universities of Amhara region. Descriptive survey and correlational research design were employed. The size of the population was 2170. Of these, 740 instructors were taken into the sample using proportional stratified random sampling technique. Standardized questionnaire was used to collect the data. One sample t-test, Structural Equation Modeling (SEM), multiple regression, and one way analysis of variances (ANOVA) were used to analyze the data. The result of one sample t-test indicated that distributive justice was observed moderately while procedural and interactional justice were found to a little extent in the universities as perceived by instructors. With regard to OC, instructors were moderately committed to carry out their jobs due to their emotional attachment with their universities and sense of responsibility. There was a positive and statistically significant relationship between OJ and OC with standardized correlation coefficient ($r=.754$) at $p<.05$. The result of multiple regression indicated that 56.5 % of the variance in OC is explained by the three dimensions of OJ with a significant model $F(3, 736) = 219.952$, $p= .000$. The result of one way ANOVA indicated that significant differences were observed among instructors in their perception of OJ and OC in the four generations of universities. Therefore, it is concluded that OJ had significant effect on OC of instructors even though procedural justice and interactional justice were observed to a little extent in the public universities in Amhara region. Thus, it is suggested that academic leaders need to improve the current status of procedural justice and interactional justice to make instructors more committed to carry out their duties effectively.

Keywords: Amhara region, Organizational commitment, Organizational justice, Public universities

[1] Corresponding author, email: shimelismesfin@gmail.com

Introduction

Background of the Study

It is evident that organizational effectiveness largely depends on various organizational variables. Though there are different factors that have their own contribution to improve the function of organizations, OJ and OC play vital roles in enhancing the performance of the organizations including educational institutions. If a leader wants to improve the performance of an organization, attention must be given to the issues of OJ and OC.

Organizational justice (OJ) is one of the numerous job related attitudes concerned with employees' perception of fair treatment in the organization (Fernandes & Awamleh, 2006; James, 1993). It is conceptualized in terms of distributive, procedural and interactional justice (Cohen & Spector, 2001). Distributive justice is viewed as workers' perception about the fairness of outcomes and its distribution (Toremen & Tan, 2010). It indicates how employees are fairly rewarded according to their performance (Gilliland, 1994). On the other hand, procedural justice is the fairness of procedures used to determine the outcomes that employees receive (Moorman, 1991). with the quality of interpersonal relationships among employees (Niehoff & Moorman, 1993). It is fostered when decision makers treat people with respect and dignity as well as explain the rationale for decisions carefully. This implies that OJ deals with not only the fair distribution of outcomes but also the fairness of procedures used to determine the outcomes and fairness of interpersonal treatment among employees.

Studies have shown that organizational attitudes and behavior can be directly linked with employees' perceptions of justice (Roch & Shannock, 2006). This means that if employees perceive the outcomes of their evaluations to be fair, they will be likely to respond by performing behaviors to benefit their organization that goes beyond their duties (Niehoff & Moorman, 1993). Employees want to be treated with respect and their contributions to be matched with the outcomes received. Not only do workers want to be equally compensated for their inputs, but they also choose the procedures that delegate outcomes and individuals associated with the delegation of outcomes to be fair as well. When employees perceive that they are fairly treated in the work place, they are more likely to be happy to support their organizations. Similarly, having the procedures that are consistent, unbiased and good interaction between employees and leaders is a basic element for ensuring fairness (Greenberg, 1993; Judge & Colquitt, 2004). On the contrary, employees with the feeling of unfair treatment in an organization will decrease performance, the quality of work and degree of cooperation among workers (Pfeffer & Langton, 1993). This indicates that OJ plays an important role in enhancing employees' level of OC (Robinson, 2004).

OC is another job related component which is viewed as the desire of employees to stay in an organization and get committed towards organizational goals and values. It also refers to the measure of strength of the employees' identification with the goals and values of their organization, having strong faith in it and showing considerable effort to continue in the membership of the organization (Nazari & Emami, 2012; Saglam, 2003). It is measured in terms of affective, continuance and normative commitment which are related to one another (Allen &

Meyer, 1990). Affective commitment refers to an emotional attachment and involvement with an organization while continuance commitment denotes employees' perceived costs associated with leaving an organization (Meyer et al.,1993). Normative commitment denotes an individual's feeling of an obligation to support an organization (Allen & Meyer, 1990).

Committed employees are contented and dedicated and work enthusiastically. Employees with a high level of OC have a strong belief in the goals of the organization and demonstrate high performance to attain the goals of their organizations (Balay, 2000), while organizations that have employees with low level of OC will not be successful in achieving their purposes (Kaya & Selcuk, 2007). Organizations must continually seek ways to keep their employees and work groups effective because the success of the organization depends on its ability to create conditions that attract best people to work there. Turnover rate and absenteeism were high in organizations which had employees with low level of OC (Gerhart & Judge, 1991). This indicates that employees who are committed to their workplace are more likely to exert much effort than employees who have low commitment.

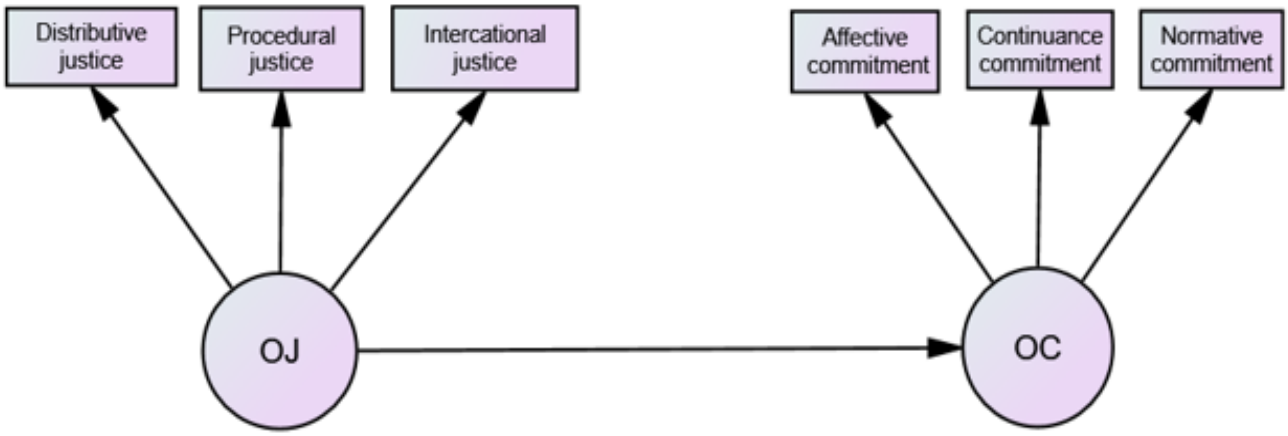
Employees want to stay in an organization as much as they are fairly treated in the system. The findings of many studies indicate that there is a significant relationship between OJ and OC (Kıray, 2011; Shekari, 2011). In an effort to keep employees committed to their job, organizations need to establish a system that treats employees fairly (Akanbi & Ofoegbu, 2013). According to various researchers, employees will remain within the organization when they perceive fair treatment, while the reverse state increases turnover that leads to a decrease in the performance of individuals and reduces the level of OC (Tremblay et al.,, 2010). This shows that OJ has the potential to affect the commitment of employees in organizations (Imamoglu, 2011).

Employees with a sense of equality and the feeling that they are rewarded fairly for their contributions to the organization are satisfied (Srivastava, 2015). Employees who are satisfied with the justice system of their organization will show high level of trust, commitment and performance (Aryee et al.,2002). Individuals with a higher level of OJ perception have a higher commitment to their institutions. In this respect, the results of the study revealed a positive relationship between employees' feeling of justice and commitment (Kıray, 2011; Lambert et al.,2007; Robinson, 2004; Yazıcıoglu & Topaloglu, 2009). Employees will be committed to serve their organization when are treated properly by their leaders. Similarly, the findings of McFarlin and Sweeney (1992) indicated that fair treatment of employees resulted in employees' desire to reciprocate by demonstrating behaviors that benefit the organization. In addition, employees who feel mistreated in the workplace incline to show deviant behavior and decrease the possibility to engage in OCB (Vardi & Wiener, 1996).

Based on the discussions made so far about OJ and OC as well as their relations, a new conceptual framework was synthesized for this study as indicated in Figure 1. The framework considers distributive justice, procedural justice and interactional justice as the dimensions used to measure an OJ construct. Similarly, affective commitment, continuous commitment and normative commitment are considered as the dimensions used to measure an OC construct.

Figure 1

Proposed conceptual framework of the study



Statement of the Problem

Currently there appears to be an increasing interest among scholars in OJ and OC. OJ and OC are important factors linked to the success of any organization. This indicates that employees with feeling of fair treatment and high level of commitment in organizations tend to be effective in carrying out their duties compared to other employees with the feeling of unfair treatment and low commitment. Thurston and McNall (2010) claimed that the feeling of fairness is considered as an important position in decision making process concerning rewards, benefits and other compensation issues. Fairness in pay received, decisions about the reimbursement process and the way this information is communicated to all employees are significant about the compensatory system (Milkovich & Newman, 2008).

Employees who perceive unfair treatment may have negative effect on the effectiveness of organizations. Numerous studies conducted in the past pointed out that employees exhibit workplace aggression (Kennedy et al.2004) due to lack of fair treatment in organizations. These situations lead to increase turnover intention and interpersonal deviance (Cohen & Spector, 2001), exhibit counter productive work behavior (Spector & Fox, 2002) and burnout, turnover, absenteeism and low productivity (Colquitt et al.,2001; Janssen, 2004) as well as low commitment, and eventually, they may pursue to leave the organization (Aslam et al.,2016). These indicate that employees who are deprived of justice in organizations will be susceptible to stress, dissatisfaction, lower level of commitment, frequent absenteeism, and aggression leading to low productivity.

Concerning commitment, the findings of many studies indicate that low level of commitment leads to turnover and attrition (Joiner & Bakalis, 2006; Meyer et al.,2002), absenteeism (Farrell & Stamm, 1988), counterproductive behavior (Dalal, 2005), and decline in altruism and compliance (Schappe, 1998). A survey conducted by Bosman et al.(2008) showed that high level of employee turnover was associated with poor function of an organization and

increased the cost involved in selecting and training the replacements. These can cause loss of work progress, productivity, organizational status and poor relationship with customers (Alzubi, 2018). High turnover rates can increase the cost of recruitment, training and retention of staff (Al-Hussami, 2008), as well as negatively affect the success of the organization in attaining strategic objectives, sustaining competitive advantage, and keeping the morale, productivity and quality of work in the organization (Alzubi, 2018). Mobley (1982) also described employee turnover as a serious problem facing many organizations including educational institutions.

Although some studies have been conducted on OJ and OC (Alemu, 2014; Endale, 2019; Endris & Dawit, 2019; Temesgen, 2011; Tesfaye, 2004), sufficient studies have not been done on the causal relationship between these variables in the context of Ethiopian higher education institutions in general and in the public universities of Amhara region in particular. This study, therefore, examines the influence of OJ on OC of instructors in the public universities of Amhara region. Thus, the following research questions are formulated to guide this study.

1. What is the perception of instructors towards OJ and OC in the public universities of Amhara region?
2. What is the relationship between OJ and OC in the public universities of Amhara region?
3. What are the influences of OJ dimensions on OC in the public universities of Amhara region?
4. Are there significant differences among instructors in perception of OJ and OC in the four generations of universities in Amhara region?

Significance of the Study

This study may generate empirical evidences about the status of OJ and OC in the public universities of Amhara region. It may create awareness on the part of academic leaders about the importance of OJ and OC in supporting the function of public universities. In addition, it may also contribute to the body of literature in the areas of OJ and OC in the context of Ethiopian higher education institutions. Moreover, the study may provide first-hand information about the result of OJ in enhancing instructors' commitment. Furthermore, it attracts the attention of policy makers and practitioners with regard to OJ and OC so that they can suggest the ways in which employees will be committed and feel good about their job. Moreover, less attention has been given to the issue of OJ and OC in Ethiopian higher education institutions; thus, the findings of this research may initiate other researchers to conduct further studies.

Delimitation of the Study

This study covered six public universities in Amhara region that were selected from the 1st, 2nd, 3rd and the 4th generations and focused on academic staff because academic staff are believed to have better understanding about the issue under investigation than supportive staff. With regard to variables, the study was delimited to OJ and OC. Specifically, OJ was measured in terms of distributive justice, procedural justice and interactional justices from the perspectives of instructors (Cohen & Spector, 2001; Moorman, 1991). Instructors' level of OC was measured using three

dimensions – affective commitment, continual commitment and normative commitment as was developed by Meyer et al. (1993). In addition, the establishment of universities was considered to check whether significant differences were found among instructors in their perception of OJ and OC.

Method

Design

Since this research aimed to assess instructors' perception about the status of OJ and OC as well as examine the relationship between these variables, descriptive survey and correlational research design were found appropriate. Therefore, descriptive survey and correlational research design were used as a guide using quantitative methodology.

Research Setting

This research was conducted in six public universities of Amhara region that were selected from the 1st, 2nd, 3rd and the 4th generations. These generations which contain universities with nearly similar characteristics such as infrastructures, staff profiles, academic programs, and so on were considered as strata.

Participants

Categorized into four generations based on years of establishment, there are 10 public universities in Amhara region These are two universities from the 1st generation, three from the 2nd generation, two from the 3rd generation, and three from the 4th generation. Of these, six universities were selected from the specified strata for manageability reason. That is, University of Gondar from the 1st generation, Wollo and Debre Markos Universities from the 2nd generation, Debre Tabor University from the 3rd generation, and Injibara and Debarq Universities from the 4th generation were selected using stratified random sampling technique. These stratifications allowed to ensure the representation of universities from each generation and make comparison among respondents in their perception of OJ and OC.

Then, a total of 21 colleges were selected from the six universities to determine the size of the population and subpopulations of the study. Specifically, five colleges from University of Gondar, four from each of Wollo, Debre Markos, and Debre Tabor Universities, and two from each of Injibara and Debark Universities were selected using simple random sampling technique through lottery method. In this regard, a total of 2170 instructors found in the selected universities were taken as the population of the study. Of the total size of instructors, 731 from the 1st generation, 710 from the 2nd generation, 427 from the 3rd generation, and 302 from the 4th generation universities were considered as the subpopulations of the study.

Although there is no single criterion that determines the necessary sample size, Comrey and Lee (1992) suggested that the sample size with 500 and above would be good to carry out factor analysis. Based on the suggestions of Raykov and Marcoulides (2006) and Tabachnick and Fidell (2007), 20 respondents per each item were used in the present study to determine the size of the sample. Accordingly, the sample size of this study was 740 since the number of items under the dimensions of the variables in the questionnaire was 37. After determining the total sample size of the study, the sample size of each stratum was determined based on the size of their population using proportional sample allocation method developed by Pandey and Verma (2008). This helps to select representative samples from each stratum with the assumption that numbers of instructors in the selected strata significantly varied. Hence, the sample size of each stratum was determined through dividing the population size of the k^{th} stratum by the total population size and multiplying by the total sample size using Pandey and Verma (2008) formula as given below. i.e.

$$n_k = \left(\frac{Nk}{N} \right) * n$$

Where;

n_k = Sample size of k^{th} stratum
N_k = Population size of the k^{th} stratum
N = Total population size
n = Total sample size

Of the total sample of 740 instructors, 249 from the 1st generation, 242 from the 2nd generation, 146 from the 3rd generation, and 103 from the 4th generation universities were taken into the sample using proportional stratified random sampling technique. The summary of population and sample of the study are shown in Table 1 below.

Table 1
Summary of population and sample of the study

Strata	**Name of universities**	**Population size of each university (N_k)**	**Sample size of each university (n_k)**
1st generation	University of Gondar	731	249
2nd generation	Wollo University	280	95
	Debre Markos University	430	147
3rd generation	Debre Tabor University	427	146
4th generation	Injibara University	145	49
	Debark University	157	54
	Total	N= 2170	n= 740

Instruments

Standardized questionnaire was used to collect the data with the intention to increase the reliability of the results. The questionnaire had three parts containing close ended items. The first part of the questionnaire consisted of an item related to respondents' universities where they were working. The second part of the questionnaire contained 19 items developed by Moorman (1991) and Niehoff and Moorman (1993) with the intent to assess respondents' feelings towards OJ in the workplace. These items were organized into three dimensions such as distributed justice, procedural justice and interactional justice. The third part of the questionnaire measured respondents' perceptions about OC. It was measured using 18 items organized in three dimensions developed by Meyer et al. (1993): affective commitment, continual commitment, and normative commitment.

Finally, respondents rated items using five points Likert type scales ranging from 1 (not at all) to 5 (to a very great extent) to measure OJ and OC in the workplace.

Validity and Reliability of the Questionnaire

The validity of the questionnaire was checked using theoretical support of relevant literatures and technical evaluation of research experts in relation to face and content validity. In this regard, face validity was evaluated through my colleagues about the appearance of the questionnaire in terms of feasibility, readability, consistency of style and formatting, and the clarity of the language used. Based on the given comments, problems related to the clarity of language, uniformity of style and formatting of the questionnaire were improved. The content validity of the questionnaire was also evaluated by the research advisors. Hence, the organization of the questionnaire related to relevance, simplicity and wording of items were adjusted based on the feedback obtained from the research advisors. In addition, statistical technique was used to test the content validity of the questionnaire using content validity index formula of Lawshe (1975). After items were identified to be included in the final questionnaire, content validity index was calculated for the mean of the content validity ratio values of the retained items. Thus, the content validity indices of items are .91 and .85 for OJ and OC respectively indicating that items were valid to measure their respective latent variables and dimensions.

Reliability is another aspect of quantitative research that was measured. Pilot test was conducted on 90 selected instructors of Bahir Dar University to assess the reliability of the questionnaire. The distribution of sample for pilot test followed the same procedures as in the main sample of the study. Cronbach Alpha was used to test the internal consistency of items. The reliability coefficients of the dimensions of the instruments as estimated by Cronbach Alpha (α) range between .87 and .94 for OJ and between .82 and .88 for OC. This indicates that items in the respective dimensions with reliability coefficients $\geq$.80 are considered as internally consistent to measure OJ and OC (George & Mallery, 2010).

Data Analysis Techniques

Inferential statistical analysis techniques were used to analyze the data using SPSS software version 23. Specifically, a one sample t-test was used to measure the status of OJ and OC in the workplace (Research question #1). SEM was used to assess the relationship between OJ and OC (Research question #2). Multiple regression was used to analyze the effect OJ dimensions on OC of instructors (Research question #3). Finally, one way ANOVA was used to assess whether instructors differ in their perception of OJ and OC in the four generations of public universities in Amhara region (Research question #4).

Ethical considerations

Initially, permission letter was sought from Bahir Dar University to collect the data from the research sites. Based on the given permission, the list of target respondents was accessed and the required samples were identified before starting to collect the data. Then, the researcher provided information for the research participants so that they could understand the purpose of the study before they took part in the study. Participants were also informed about the absence of both potential risks and benefits due to participation in the study. In addition, the collected data were confidential and anonymous in order to keep the rights of the research participants. Moreover, respondents were informed that their involvement in the study was totally voluntary and that they would withdrawal from the research at any time. More importantly, any communication with concerned bodies was not carried out without the consent of the research respondents. Finally, the questionnaire was distributed to the sample respondents, and they were given three days to fill the questionnaires.

Results

This section presents the results of the study according to the themes of the research questions. It begins with testing the construct validity of the respective dimensions of latent variables and measurement model fit through conducting exploratory and confirmatory factor analyses.

Factor analysis

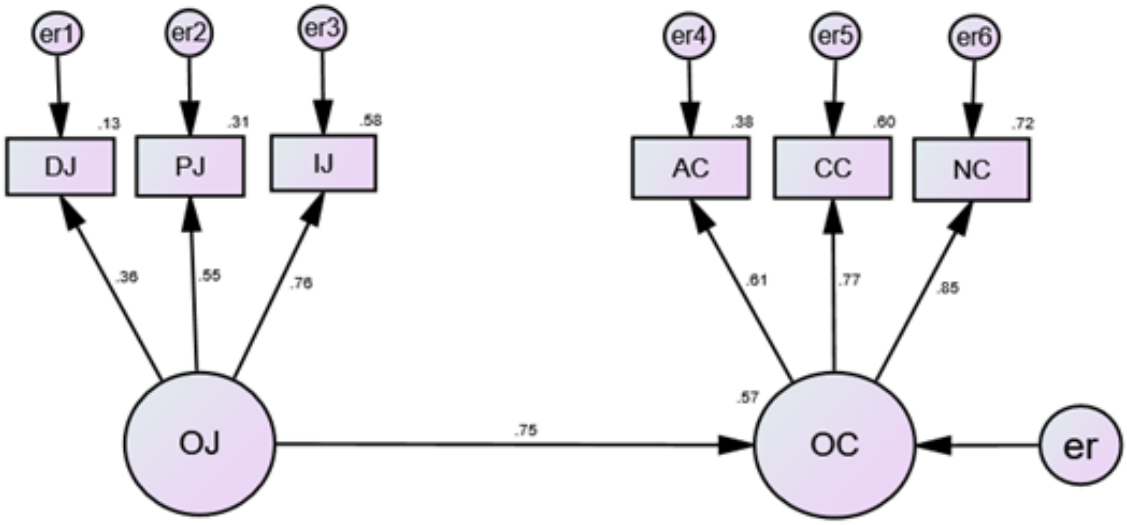
Although there is no clear criterion to decide what is large or small, items with factor loadings ±.33 and above are considered to meet the minimum level of threshold based on the recommendation of Ho (2006). The result of exploratory of factor analysis indicated that all items in the respective dimensions of OJ and OC had high factor loadings above the cutoff point of ±.33 which accounted for 10% of the total variances of variables. In this case, 32 items heavily loaded on the dimensions of OJ and OC with factor loading values ranging from .628 to .877 were retained, and they contributed more than 50% of the variance in OJ and OC constructs. However,

five items with low factor loadings were discarded from the analysis, for they suppressed the reliability of OJ and OC. This has reduced the number of items in the variables from 37 to 32. The results of principal component analysis also showed that the factor loadings of OJ and OC dimensions with eigen values ranging from 1.464 to 3.896 were greater than the minimum threshold of 1.

Based on the results of the construct validity, the three dimensions of OJ (distributive justice, procedural justice, and interactional justice) and three dimensions of OC (affective commitment, continuance commitment, and normative commitment) were identified as indicators. Taking the identified dimensions of the two latent variables, the measurement model was constructed using AMOS version 23 as shown in Figure 2.

Figure 2

Measurement model of the study



After testing the construct validity, confirmatory factor analysis was carried out to assess the parameter estimates of the latent variables and the overall fit of the measurement model to the data. Although there is little agreement among scholars on the type of fit indices and their cutoff points, relative chi-square (CMIN/DF), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), normed fit index (NFI), incremental fit index (IFI), Tucker-Lewis index (TLI), comparative fit index (CFI) and root mean square error of approximation (RMSEA) were used to evaluate the fitness of the measurement model to the data. Accordingly, absolute and incremental fit measures such as CMIN/DF values less than <3 (Kline, 2005) and GFI, AGFI, NFI, IFI, TLI and CFI values greater than .90 (Ho, 2006) were considered as the cutoff point to assess the measurement model of this study. Finally, RMSEA value lower than .05 was used as the criteria to assess the overall fit of the proposed measurement model (Byrne, 2010). Thus, summary of goodness of fit indices to assess the measurement model are indicated in Table 2.

Table 2

AMOS outputs on the fitness indices against the criteria of the measurement model

Criteria	Obtained values	Threshold
Relative chi-square (CMIN/DF)	2.580	<3
Goodness of fit index (GFI)	.988	>.90
Adjusted goodness of fit index (AGFI)	.968	>.90
Normed fit index (NFI)	.978	>.90
Incremental fit index (IFI)	.984	>.90
Tucker-Lewis index (TLI)	.971	>.90
Comparative fit index (CFI)	.984	>.90
Root mean square error of approximation (RMSEA)	.044	<.05

As indicated in Table 2, the measurement model satisfied all of the fit indices. That is, the results indicated that the measurement model fits to the data by the $\chi 2$ (N = 740, df = 8) = 20.644, p <.05. In addition, the fit indices of GFI (.988), AGFI (.968), NFI (.978), IFI (.984), TLI (.971) and CFI (.984) were higher than the threshold of .90, and a RMSEA (.040) was lower than the cutoff of point .05 with p= .022. This indicates that the possible improvement of the measurement model ranging from .012 to .032 appears to be as small as of little practical significance.

The maximum likelihood estimates of regression and standardized regression weights confirmed that all the path coefficients in the model are significant at p< .05 as shown in Table 3.

Table 3

Unstandardized and standardized regression weights of the measurement model

Parameters/dimensions			Unstandardized				Standardized
			Estimate	S.E.	C.R.	P	Estimate
Distributed justice	<---	OJ	.428	.053	8.081	***	.363
Procedural justice	<---	OJ	.574	.050	11.380	***	.553
Interactional justice	<---	OJ	1.000				.763
Affective commitment	<---	OC	.663	.041	16.059	***	.615
Continuous commitment	<---	OC	.882	.045	19.707	***	.774
Normative commitment	<---	OC	1.000				.850

As it has been indicated in Table 3, the unstandardized regression weights of all the dimensions of OJ and OC are significant with the critical ratio test greater than ±1.96 at $p < .05$. From this, it is possible to conclude that the critical ratio tests of the six dimensions are far away from the threshold of ±1.96 which indicates a significant path at $p <.05$.

Likewise, the standardized regression weights also ensured the significance of the dimensions of the latent variables. The standard regression estimates of all the six dimensions were significantly represented by their respective latent variables. Specifically, the standardized regression weights of the observed variables in the measurement model ranged from .363 (distributive justice) to .850 (normative commitment). This implies that the observed variables explained the respective latent constructs ranging from 13.2% (distributive justice) to 72.3% (normative commitment). These values indicated that OJ and OC were significantly measured by their respective dimensions at $p<.05$. This shows that all dimensions in the measurement model are internally consistent and structurally valid to measure OJ and OC.

Status of Organizational Justice and Organizational Commitment

Table 4

A one sample t-test for the dimensions of OJ and OC

Dimensions	Mean	Std.	Test value	Mean difference	t-value	Sig.(2-tailed)
Organizational justice						
Distributive justice	13.49	2.797	12	1.486	14.455	.000
Procedural justice	10.99	3.954	15	-4.008	-27.572	.000
Interactional justice	19.51	4.004	21	-1.493	-10.146	.000
Organizational commitment						
Affective commitment	22.19	5.753	18	4.195	19.834	.000
Continuance commitment	15.48	4.621	18	-2.516	-14.811	.000
Normative commitment	14.89	3.359	12	2.893	23.433	.000

N=740, df = 739, *Sig. <.05

The results in Table 4 indicated that the mean score of distributive justice (13.49) is greater than the test value at (t = 14.455). The positive mean difference and t-value also confirm that the observed mean score is significantly higher than the test value at $p<.05$, df =739. This means that instructors fairly perceived the state of distributive justice in the workplace. On the other hand, the mean scores of procedural justice (10.99) and interactional justice (19.51) are less than the

respective test values at (t = -27.572) and (t = -10.146) respectively. The respective negative mean differences and t values of these dimensions ensure that the obtained mean scores are significantly lower than the test values at p<.05, df =739. This indicates that procedural justice and interactional justice are observed to a little extent in the universities.

With regard to OC, the results of one sample t test indicated that the mean scores of affective commitment (22.19) and normative commitment (14.89) are higher than the respective test values at t = 19.834 and t = 23.433. The positive mean differences and t-values also confirm that the observed mean scores are significantly greater than the test values at p<.05, df =739. This implies that instructors are moderately committed to carry out their job due to their emotional attachment with their universities and sense of responsibility to serve their universities. Conversely, the mean score of continuance commitment (15.48) is lower than the test value at t = -14.811. The negative mean difference and t value of this dimension prove that the obtained mean score is significantly lower than the test value at p<.05, df =739. This means that instructors are committed to a little extent to perform their job due to continuous commitment.

The Relationship between Organizational Justice and Organizational Commitment

Table 5

Standardized Correlation Coefficient of OJ and OC

Latent variables			Unstandardized				Standardized
			Estimate	S.E.	C.R.	P	Estimate
OJ	<-->	OC	.658	.054	12.238	***	.754

As can be seen from Table 5, positive and statistically significant relationship is observed between OJ and OC with standardized correlation coefficient (r=.754) by the critical ratio test greater than ±1.96 at p<.05. This implies that the commitment of instructors increases when there is OJ in the workplace.

The Influence of Organizational Justice on Organizational Commitment of Instructors

Table 6

Regression of organizational commitment on the dimensions organizational justice

Dimensions of OJ	Adjusted R Square	Unstandardized Coefficients		Standardized Coefficients		
		B	S.E.	Beta	t-value	Sig.
Constant		1.272	.091		13.947	.000
Distributive justice	.565	.503	.021	.634	23.687	.000
Procedural justice		.091	.013	.185	6.859	.000
Interactional justice		-.105	-1.84	-1.85	-6.827	.001

As shown in Table 6, the results of multiple regression indicated that 56.5% of the variance in OC is predicted by the three dimensions of OJ with a significant model at F (3, 736) = 219.952, p= .000. The values of regression coefficient are found significant as.634, .185 and -1.85 for distributive justice, procedural justice, and interactional justice respectively. This shows that all dimensions of OJ significantly contribute to predict OC although they do not have equal contribution in explaining OC. In nutshell, the rest 43.5% of the variation in OC is attributed to the residual variances that cannot be explained.

One Way ANOVA for University Generations

Table 7

One way ANOVA on differences in perception of OJ and OC among instructors in the four generations of universities

Variables	Generations of universities	Sum of Squares	df	Mean Square	F	Sig.
OJ	Between Groups	190.763	3	63.588	49.989	.000
	Within Groups	936.215	736	1.272		
	Total	1126.978	739			
OC	Between Groups	124.201	3	41.400	32.624	.000
	Within Groups	933.983	736	1.269		
	Total	1058.184	739			

As shown in Table 7, the result of one way ANOVA indicated that there are statistically significant differences among instructors in their perception of OJ at F (3, 736) = 49.989, p = .000 and OC at F (3,736) = 32.624, p = .000 in the four generations of universities. The mean scores of the 1st, 2nd, 3rd and 4th generation universities in the four variables also confirmed that instructors differ in their perceptions of OJ and OC. This shows that instructors in the four generations of universities perceived the status of OJ and OC differently.

Although the F-ratio indicates significant differences among instructors in their perception of OJ and OC in the four generations of universities, it did not indicate the location of these differences. As a result, post hoc analysis was computed using Scheffé test to identify which generations of universities differed significantly from each other at .05 level of significance. This is shown in Table 8 below.

Table 8

Post hoc tests of multiple comparisons among instructors in perception of OJ and OC

Variables	(I) Generations of universities	(J) Generations of universities	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
OJ	1st	2nd	.1969	.1056	.325	-.0990	.4930
		3rd	-1.1330*	.1129	.000	-1.4494	-.8166
		4th	.0909	.1259	.914	-.2620	.4438
	2nd	1st	-.1969	.1056	.325	-.4930	.0990
		3rd	-1.3300*	.1196	.000	-1.6652	-.9948
		4th	-.1061	.1319	.886	-.4759	.2637
	3rd	1st	1.1330*	.1129	.000	.8166	1.4494
		2rd	1.3300*	.1196	.000	.9948	1.6652
		4th	1.2239*	.1378	.000	.8376	1.6103
	4th	1st	-.0909	.1259	.914	-.4438	.2620
		2rd	.1061	.1319	.886	-.2637	.4759
		3rd	-1.2239*	.1378	.000	-1.6103	-.8376
OC	1st	2nd	.47632*	.1055	.000	.1807	.7720
		3rd	-.60118*	.1128	.000	-.9172	-.2852
		4th	.46349*	.1258	.004	.1110	.8160
	2nd	1st	-.47632*	.1055	.000	-.7720	-.1807
		3rd	-1.07750*	.1195	.000	-1.4123	-.7427
		4th	-.01283	.1318	.892	-.3822	.3566
	3rd	1st	.60118*	.1128	.000	.2852	.9172
		2rd	1.07750*	.1195	.000	.7427	1.4123
		4th	1.06467*	.1377	.000	.6788	1.4506
	4th	1st	-.46349*	.1258	.004	-.8160	-.1110
		2rd	.01283	.1318	.892	-.3566	.3822
		3rd	-1.0647*	.1377	.000	-1.4506	-.6788

The results of Scheffé test indicate that instructors in the 1st generation universities are significantly different from instructors in the 3rd generation universities in perception of OJ. On the contrary, instructors in the 2nd and 4th generation universities do not differ significantly from the 1st generation universities in perception of OJ. Significant differences are observed between instructors in the 2nd and 3rd as well as between the 3rd and 4th generation universities in perception of OJ. But, instructors in the 2nd generation universities do not differ significantly from instructors in the 4th generation universities in their perception of OJ.

With regard to OC, the results of Scheffé test reveal that instructors in the 1st generation universities are significantly different from instructors in the 2nd, 3rd and 4th generation universities in perception of OC. Significant differences are also observed between instructors in the 2nd and 3rd as well as in the 3rd and 4th generation universities in perception of OC. However, instructors in the 2nd generation universities do not differ significantly from instructors in the 4th generation universities perception of OC.

Discussion

The findings of this study indicated that OJ was observed in public universities to some extent or to a little extent. Specifically, distributive justice is found moderately in the workplace while procedural justice and interactional justice are observed to a little extent as shown in Table 4. This finding is similar to the works of Awang and Ahmad (2015) and Nguni et al.,(2006) that distributive justice is observed to some extent in the workplace. Other researchers also reported that distributive justice is moderately observed in the organizations (Mahrani et al.,2013; Wajde et al., 2018) that enable employees rewarded fairly according to their contribution. The findings of Gulluce et al.(2015) and Wajdee et al. (2018) are similar to the result of the current study as regards procedural justice and interactional justice.

With regard to OC, the finding of this study indicated that instructors have moderate level of affective commitment and normative commitment; however, they have low level of continuous commitment in their universities. The works of Endale (2019), Temesgen (2011) and Tesfaye (2004) are similar to the findings of this study related to affective commitment and normative commitment. In the same way, the findings of Endris and Dawit (2019), Mahrani et al. (2013) and Gulluce et al. (2015) are also similar to the findings of this study concerning affective and normative commitment. With regard to continuous commitment, research conducted by Mahrani et al. (2013) indicated that employees demonstrated a modest level of continuance commitment in

the workplace. The result of this study is further supported by the findings of other studies on the status of continuance commitment as perceived by employees (Karanja, 2016). This shows that employees' commitment is affected by different factors.

Employees want to stay in the organization as much as they are fairly treated in the system. The result of this study indicated that there is a significant relationship between OJ and OC. This finding is congruent with a result of Ghafori and Golparvar's (2009) study that OJ had positive and significant correlation with OC because the staff perceive their leaders to be fair, respectful and unbiased in their dealings. Kıray (2011) and Shekari (2011) also found a significant relationship between OJ and OC. This indicates that employees with the feeling of fair treatment have high level of commitment in the workplace. Similarly, other studies conducted in different organizations indicated that OJ is significantly related to OC (Camerman et al., 2007; Lemons & Jones, 2001; Yazıcıoglu & Topaloglu, 2009). Moreover, a finding of this study is consistent with the finding of Robinson (2004) that there is a positive and significant relationship between OJ and OC. When employees' rewards are equal to the inputs, they develop the feeling of fair treatment while the reverse situation leads to a state of mistreatment. Employees become committed when they develop the feeling of fair treatment; however, the opposite feeling does not bring this result (Imamoglu, 2011).

Justice is vital if employees are to be committed to the organization. The findings of the previous studies also indicated that OJ had significant effect on OC similar to the findings of the current study. Concerning this, Imamoglu (2011) reported that OJ had significant effect on OC. In the same way, other researchers also supported the significant influence of OJ on employees' level of commitment in the workplace (Cropanzano et al., 2007; Demir, 2011). Moreover, the findings of other studies proved that employees' perceived justice had significant effect on employees' commitment towards their job (Rezaiean et al.,2010). Therefore, it is possible to say that the fairness of outcomes distributed within the organization and its function improve the level of commitment of employees to the organizations.

Furthermore, the finding of the current study that OJ is an important factor determining employees' commitment in the workplace is congruent with the works of ***Ogunyemi and Ayodele (2014)*** and Sarnecki (2015). Likewise, various studies conducted in various areas proved that OC tends to improve for those employees whose leadership gives them the opportunity to partake in decision-making (Steyrer et al., 2008). The findings of other studies also indicated that staff who were satisfied with the way they were treated by their leaders were committed to the organization

(Aryee, et al., 2002; Baotham, 2011). This finding was consistent with that of Bakhshi et al. (2009) and Mowday et al. (2013) who reported that fairness in organization makes employees committed in the workplace.

This study has some limitations First, since it used a new conceptual framework, sufficient literature related to OJ and OC has not been found in the context of higher education institutions in general and Ethiopian public universities in particular. Because of this, literatures reviewed related to these variables in the context of other organizations are used for the purpose of this study. The other limitation of this study was that it has considered only the academic staff working in the public universities in Amhara region due to time and resource constraints. As a result, the findings of this study may not be generalized to all Ethiopian public universities. Shortage of recent studies related to OJ and OC in the context of higher education institutions was also another limitation of this study

Conclusions and Implications

Conclusions

Based on the results obtained, the following conclusions are drawn.

- The dimensions of OJ such as procedural and interactional justice are observed to a little extent, while distributive justice is found moderately in the workplace as shown in Table 4. With regard to OC, affective commitment and normative commitment are observed to some extent, but continuous commitment is found to a little extent as perceived by instructors.
- There is a positive and statistically significant relationship between OJ and OC with standardized correlation coefficient ($r = .754$) at $p < .05$ as indicated in Table 5.
- The results of multiple regression indicate that 56.5 % of the variance in OC is predicted by the three dimensions of OJ, while the rest 43.5% of the variance in OC is attributed to the residual that cannot be explained (See Table 6).
- As shown in Table 7, there are statistically significant differences among instructors in their perception of OJ and OC in the four generations of universities.

Implications

To improve the current status of OJ and OC, academic leaders at all levels need to give high attention to the issue of employees' justice and commitment in order to enhance the performance of their institutions. Academic leaders also need to improve the current status of procedural and interactional justice through validating the fairness of procedures used to make decisions and interpersonal treatment in the institutions. Instructors shall be committed enough to serve their institutions without considering perceived costs associated with their job. Moreover, further studies need to be conducted on OJ and OC in the context of Ethiopian higher educational institutions to broadly generalize the results that will be obtained.

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Trends in Mathematics Learning in Ethiopia: 2012 - 2019

Dawit Tibebu Tiruneh[a2], Ricardo Sabates[a], Caine Rolleston[b], John Hoddinott[c]

[a] REAL Centre, University of Cambridge
[b] Institute of Education, University College London
[c] Cornell University

Abstract

While access to basic education has increased greatly in Ethiopia and funding for education has improved notably, learning levels among pupils do not appear to have improved commensurably and have likely deteriorated. We explore in this paper the trend in mathematics learning in relation to the General Education Quality Improvement Programme - Phase II (GEQIP-II). We make use of a unique longitudinal dataset on 33 schools in six regions of Ethiopia covering the period 2012 to 2018. We found that pupils' progress in mathematics in the 2018-19 academic year improved slightly compared to 2012-13, but there is a difference in magnitude of learning progress for the two periods between pupils across rural-urban locations, regional states, and family economic backgrounds. There is an overall improvement in measures of school infrastructure and in teacher qualifications between 2012 and 2018, and there is evidence of changes in student composition between the two periods. Consistent with the GEQIP-II reforms in terms of supporting access and retention, pupils in 2018-19 were more likely to have attended pre-school, have lower absence rates, and have fewer episodes of dropout compared to pupils in the same grade in 2012-13. Compared to pupils in 2012, those in the 2018 cohort had caregivers that were less likely to be literate, and had fewer assets at home. Differences in mathematics learning levels and learning progress between disadvantaged pupils and their relatively advantaged counterparts are discussed in relation to the GEQIP-II reforms.

Keywords: Educational reforms, GEQIP, mathematics, quality & equity in primary education, Ethiopia.

[2] corresponding author, email: dtt24@cam.ac.uk, or dawittibebu@yahoo.com

Introduction

Despite being among the lowest-income countries globally, Ethiopia has greatly increased funding for the education sector over the past two decades. In 2016-17, education accounted for 27% of total government expenditure, which is significantly higher than the government's commitment to internationally agreed targets of 20% of the national budget for education (UNICEF, 2017). International development agencies have also been calling for greater resources to be devoted to education and have increased their levels of assistance for education projects in Ethiopia (Ministry of Education, 2015; World Bank, 2017).

In line with Sustainable Development Goals (SDG) 4.1 and 4.2, education investment in Ethiopia has focused on increasing pre-primary and primary school enrolment, while there has also been a focus on improving learning outcomes equitably for all. Accordingly, pre-primary gross enrolment has expanded from less than 300,000 pupils in 2008-09 (4%), to over 3.5 million (45%) in 2019-20, and primary education enrolment from 3 million learners in the early 1990s to over 20 million in 2019-20 (Ministry of Education, 2020). However, despite the tremendous progress in expanding access to pre-primary and primary education, learning levels have remained low or have declined (Ministry of Education, 2010, 2015; World Bank, 2017). A large share of children complete their primary education lacking basic literacy and numeracy skills (e.g., NEAEA, 2016; Tiruneh et al., 2021; USAID, 2019).

In this paper, we explore the possible explanations for the decline in learning levels among primary school pupils in relation to the General Education Quality Improvement Programme (GEQIP) reforms that were intended to improve quality and equity in the Ethiopian basic education system. We examine the extent to which mathematics learning levels for Grade 4 pupils have declined over time, despite the implementation of reforms to improve them, as well as the lessons that may be drawn from this. We also examine whether there is any difference in the benefits of the educational reforms for pupils from disadvantaged backgrounds (i.e., from rural areas, emerging regions, and from the lowest socio-economic background). We make use of a unique longitudinal dataset on 33 schools in six regions of Ethiopia covering the period 2012 to 2019.

Educational Reforms in Ethiopia: The General Education Quality Improvement Program (GEQIP)

Recognising the inadequacy of the primary education system to equip children with the required knowledge and skills, Ethiopia began to undertake major efforts in 2008 to raise learning outcomes equitably through the introduction of government- and donor-supported programs. In the latter category, one of the most prominent programs is the GEQIP reform (World Bank, 2008, 2013). The set of GEQIP reforms have been implemented in Ethiopia since 2008 in three consecutive phases: GEQIP-I (2008-2012); GEQIP-II (2012-2018); and GEQIP-for Equity (GEQIP-E: 2018-2022). The reforms have been comprehensive and nationwide, and their overall aim is to enhance pupils' learning outcomes equitably by improving teaching and learning conditions in schools, and to strengthen educational institutions and service delivery

at the federal and regional levels (World Bank, 2008, 2017). GEQIP-I and GEQIP-II reforms focused on providing essential inputs to all public schools to improve teaching and learning, including building additional classrooms, improving library and pedagogical resource centres, increasing the supply of qualified primary school teachers, providing continuous in-service training for teachers to enhance their content knowledge and pedagogical content knowledge, providing pupils with textbooks for each subject, and funding school improvement plans through per capita school grants based on enrolment (World Bank, 2008, 2013). GEQIP-II differed from GEQIP-I largely through the inclusion of information and communication technology as an additional component.

Although the implementation of GEQIP-I and GEQIP-II reforms was completed some years ago, large-scale longitudinal studies to evaluate their impact have not been conducted to date. In particular, the reforms' effects on the most marginalised pupils, including girls, those from the lowest income families, from rural locations and so-called "emerging" regions are not well understood. The Ministry of Education (MoE) in Ethiopia conducted national-level assessment studies focusing on mathematics and reading comprehension with Grade 4 and Grade 8 children in 2011 and 2015, parallel to the implementation of the GEQIP-I and GEQIP-II reforms, respectively. The findings indicated that average mathematics and reading comprehension scores for these grades were below the minimum expected standards set by the MoE (Ministry of Education, 2015; NEAEA, 2016; USAID, 2019). Although these and other similar findings from the national learning assessments are useful, the studies use cross-sectional data, which are less suited to assessing the contributions of GEQIP-I and GEQIP-II reforms to children's learning progress over time.

Objectives

Our study focuses on comparing the learning levels and learning progress over time between pupils in rural areas and their urban counterparts, and between those from the lowest family socio-economic background and their relatively wealthier peers. The study employs unique longitudinal large-scale data collected in Ethiopia at the start and end of the GEQIP-II reforms. This study is broadly based on an education production function framework (Hanushek, 1979). We examine changes in 'inputs' in relation to corresponding 'outputs' in a descriptive rather than a regression framework. Our data includes repeated measures of learning outcomes as well as relevant associated information such as the child's background, teacher training, and school characteristics. We use the data to address the following research questions:

(1) How have mathematics learning outcomes among Grade 4 pupils in Ethiopia changed over the period 2012 and 2018?
(2) Are there differences in mathematics learning levels between disadvantaged pupils (i.e., from rural areas, emerging regions, and lowest socio-economic backgrounds) and their relatively advantaged counterparts for the same period?

Method

Data

Our data came from two sources: (1) the Young Lives Ethiopia (YL) 2012-13 School Survey and (2) the RISE Ethiopia 2018-19 Household and School Surveys. Young Lives is a longitudinal study of childhood poverty conducted in Ethiopia starting from 2002, tracing the lives of children using school surveys. The YL 2012-13 School Survey included nearly 12,000 pupils studying in both Grades 4 and 5, in purposely selected sites located across seven regions in Ethiopia: Addis Ababa, Afar, Amhara, Oromia, Southern Nations, Nationalities and People's (SNNP), Somali, and Tigray. The school survey offers a unique perspective on regional and site differences across child, teacher and school characteristics, and the factors influencing progress in mathematics and reading over the course of a single school year.

The YL 2012-13 survey was conducted in two phases. Phase 1 was done at the start of the 2012-13 school year in October 2012, and Phase 2 towards the end of the school year in May 2013. In Phase 1, the survey included a pupil questionnaire, an assessment of mathematics and reading comprehension, an assessment of teacher content knowledge, and a principal questionnaire to gather some indicators of school and class quality. In Phase 2, pupils completed a second set of learning assessments in mathematics and reading comprehension. A total of 10,068 pupils in 94 schools and 280 Grade 4 and Grade 5 classes were surveyed in both Phase 1 and Phase 2 (for details, see Aurino et al., 2014). For this study, we have used data which focuses only on Grade 4 pupils and their associated characteristics (household, teacher and school levels) to analyse the determinants of progress in maths over a school year.

RISE Ethiopia used a longitudinal design that is very similar to the YL survey (see Tiruneh et al, 2021). The target population of the RISE Ethiopia 2018-19 household and school surveys included Grade 1 and Grade 4 school children from 166 schools, their parents (or primary caregivers), school principals, and Grade 4 mathematics and reading teachers distributed across seven regions: Addis Ababa, Amhara, Benishangul Gumuz (Be-Gu), Oromia, SNNP, Somali and Tigray. The survey and sample design have been described in Hoddinott et al. (2019). Similar to YL, the 2018-19 RISE Ethiopia surveys were conducted in two phases: Phase 1 at the start of the 2018-19 school year in November, and Phase 2 towards the end of the 2018-19 school year in June. Phase 1 included both the school and household surveys. In Phase 2, pupils completed a second set of learning assessments in mathematics and reading comprehension, and teachers completed a questionnaire and an assessment of their mathematics content knowledge. The RISE Ethiopia data employed in this study focuses on Grade 4 children only.

Participants

Among the total 166 schools in the RISE Ethiopia 2018-19 surveys (hereafter, 2018-19), the sampling strategy included 33 schools that had also participated in the YL 2012-13 school survey (hereafter, 2012-13). These overlapping schools were identified in six regions (excluding Benishangul-Gumuz region). The 33 schools in the 2012-13 and 2018-19 surveys

enable us to explore how GEQIP-II reform's indicators of school resources (e.g., pupil-textbook ratio, access to key educational inputs, etc.) and pedagogical supplies (e.g., teacher content knowledge, qualification, experience, etc.) changed between 2012 and 2019 in the same schools.

For the 2012-13 survey, all Grade 4 pupils from the 33 schools were selected as participants. However, for the 2018-19 survey, only two Grade 4 classes were randomly selected from each of the 33 sample schools. At a pre-survey tracking exercise, 28 pupils were randomly identified from up to two Grade 4 classes in each sample school. Because the number of Grade 4 classes varies across schools, and as the sample of 28 pupils per school for the 2018-19 survey was drawn from classes that vary in student population, we weighted the observations taking into account the number of Grade 4 classes and the number of Grade 4 students per school. In effect, the weights reflect both the selection of Grade 4 classes and the probability of a Grade 4 child being included in the sample, determined largely by school size (pupils in smaller schools have a higher probability of being included). We have estimated the key descriptive statistics using these weights to adjust for sampling effects. We compared the average scores from the YL 2012-13 with the RISE 2018-19 weighted scores.

Attrition

Table 1 shows that 2,652 Grade 4 pupils participated in the baseline surveys for YL 2012-13, and 816 pupils for the RISE 2018-19. Attrition between baseline and endline samples was approximately 17% for YL 2012-13 and 16% for the RISE 2018-19 sample. Although the total RISE sample expected at baseline from the 33 schools was 924 (33 schools x 28 pupils per school), it should be noted that the actual number of pupils available per school at the baseline was less than 28 pupils in some schools due to student absenteeism. For YL 2012-13, we have 2,190 pupils who had both baseline and endline scores, and for the RISE 2018-19, we have 689 pupils who took both the baseline and endline tests. The main reasons for attrition between the baseline and endline for both surveys were class absenteeism at the time of test administration, dropouts, a change of school because parents relocated to other areas, and a failure to track some pupils due to lack of proper class rosters in the surveyed schools.

To avoid non-response bias arising due to high attrition rates for both YL 2012-13 and RISE 2018-19, we predicted endline test scores for attriters who were absent at the endline, using a regression model. Independent variables included in the regression model to predict endline scores are baseline average score, gender, family economic background, preschool attendance, and primary caregivers' literacy. On average, these pupils were lower scorers than those retained in the sample for both YL 2012-13 and RISE 2018-19. We used the model predictions to impute an endline test score for attriters and we were then able to compare the mean score at endline with and without these imputed values. Including the imputations reduced the mean endline score slightly, as expected, given that attriters are both lower performing and more disadvantaged pupils. The change in mean endline scores is small enough that it does not alter the interpretations of the findings of this paper.

Table 1

Young Lives 2012-13 and RISE 2018-19 sample size and attrition rate by region

Region	Number of schools	YL 2012-13 sample size			RISE 2018-19 sample size		
		Baseline	Traced in Endline	Attrition rate (%)	Baseline	Traced in Endline	Attrition rate (%)
Addis Ababa	3	260	220	15.4	83	79	4.8
Amhara	6	513	427	16.8	159	141	11.3
Oromia	6	505	409	19.0	157	122	22.3
SNNP	7	674	550	18.4	177	143	19.2
Somali	4	191	137	28.3	62	49	21.0
Tigray	7	509	447	12.2	178	155	12.9
Total	**33**	**2,652**	**2,190**	**17.4**	**816**	**689**	**15.6**

Source: Young Lives 2012-13 and RISE Ethiopia 2018-19

It should be noted that the sites in the six regions in the 2012-13 survey were selected purposively with a pro-poor bias, i.e., with a focus on sites that are food-insecure and drought-prone (for details, see Aurino et al., 2014). Thus, the findings presented in this paper based on the 33 common schools between the two surveys are not representative of the impacts of GEQIP-II at regional or national levels because the school selection was not random or representative while GEQIP-II was implemented across the country. However, the 33 common schools provide a unique panel dataset with comparable test scores and a rich set of indicators at the pupil, teacher, and school levels. This allows a robust analysis of trends in learning outcomes across location, regional states, and economic background, and their potential causes and consequences, including in relation to the GEQIP-II reforms as implemented in these 33 schools at least.

Instruments

Mathematics test for Grade 4 pupils

Comparable mathematics tests were administered both at the start and end of the school year for both the 2012-13 and 2018-19 cohorts in order to measure pupils' learning outcomes in the subject. The 2012-13 survey included 25 multiple-choice items in each test phase, i.e., at the start (baseline) and end (endline) of the 2012-13 school year. The endline test included 19 common (anchor) items from the baseline test and six that were unique. The 2018-19 tests were adapted from the 2012-13 versions. The baseline test contained 25 items and were administered at the start of the 2018-19 academic year. The endline test, administered at the end of the 2018-19 academic year, included 15 common (anchor) items from the baseline test

and 10 items that were unique. Taking both the 2012-13 and 2018-19 school surveys together, there were 13 items common across the four test phases. In total, there were 41 unique items and our analysis of item fit (using item response analysis as discussed below) indicated that the items overall functioned well across the four test phases with acceptable item difficulty and item discrimination indices.

Teacher mathematics content knowledge test

In the 2012-13 survey, 30 subject content knowledge test items were administered to Grade 4 mathematics teachers. Twenty of the same items were administered to Grade 4 mathematics teachers in the 2018-19 survey. All the items in both surveys functioned well, with acceptable item difficulty and item discrimination indices.

School principal and teacher questionnaires

School principal and teacher questionnaires were administered in the common sample schools in both the 2012-13 and 2018-19 periods. The principal questionnaires in both rounds focused on gathering information on the school principals' levels of education, and their experience, as well as on indicators of school quality, for example, pupils' access to educational resources (library, textbooks, computers, radio, working toilets, access to school grants, etc.), the and provision of continuous professional development (CPD) opportunities for teachers. The teacher questionnaire focused on gathering data related to the teacher's age, experience, education levels, and teacher training qualifications.

Item Response Theory Modelling

To enable comparable estimations of learning levels and progress in mathematics over the school year between the 2012-13 and 2018-19 cohorts, and to compare teachers' mathematics content knowledge over time, we employed a concurrent calibration approach in an Item Response Theory (IRT) modelling framework. A two parameter-logistic IRT model (2PL IRT) was fitted to the item responses. The 2PL IRT model provides parameter estimates on a common interval scale. In concurrent calibration, item parameters are estimated simultaneously using pooled data from all phases, with responses to the items that were unique to each group treated as missing for respondents that did not receive them. The anchor items provide the link between tests while the unique items increase the precision of estimates for individual tests. This approach has proven to be effective in accurately estimating item parameters for all the test takers, especially when we link scores across time. Following our earlier work (Rolleston et al., 2013; Tiruneh, et al., 2021), we transformed the pupils' latent trait estimates for the entire pooled sample to a scale with a mean of 500 and a standard deviation (SD) of 100, for ease of reference. Similarly, IRT methods were employed to calibrate a common scale metric for teacher knowledge items across both YL and RISE surveys.

Results

Learning level and learning gain for the common sample in 2012-13 and 2018-19

Table 2 presents the Grade 4 mathematics mean scores and their standard deviations for the 2012-13 and 2018-19 common school sample, by region, locality, and socio-economic background. The table contains a considerable amount of information. We begin with broad trends, then turn into a more detailed examination of these data.

We start with the baseline means (results from the mathematics test administered at the start of the school year) for the 2012-13 and 2018-19 samples. The striking result is that this mean falls from 493 in 2012 to 451 in 2018, a 0.42 SD drop. In both samples, learning occurs over the course of Grade 4 as evidenced by increases in end-of-year test scores: gains of 31 and 37 points (0.31SD and 0.37 SD) in 2012-13 and 2018-19 respectively. Put differently, with yearly learning gains falling somewhere between 0.31-0.38 SD, the 2012-2018 drop of 0.42 SD in the start-of-school scores is equivalent to one year of instruction in mathematics. Furthermore, the conjunction of much lower start-of-school scores in 2018-19 and the slightly larger gains over the 2018-19 school year (compared to those in 2012-13) means that the end-of-year scores in 2018-19 were lower, not only when compared to end of the school year scores in 2012-13, but also when compared to the beginning of the 2012-13 school year scores.

Table 2

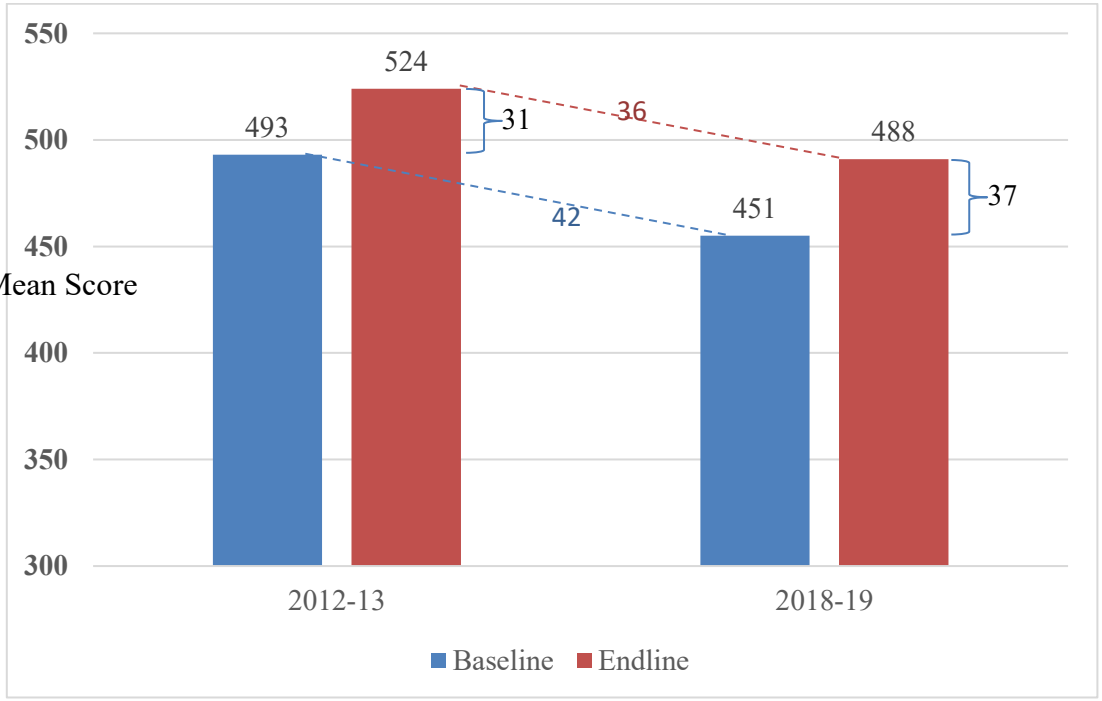
Learning levels and learning gain for the 2012-13 and 2018-19 cohorts, by region, locality and socio-economic background

			2012-13				2018-19			
	Total	**N[1]**	**Baseline Mean (SD)**	**Endline Mean (SD)**	**Gain**	**N**	**Baseline Mean (SD)**	**Endline Mean (SD)**	**Gain**	**Decline in baseline scores between 2012 & 2018 in SD**
		2,190	**493 (84)**	**524 (97)**	**31*****	**689**	**451 (89)**	**488 (97)**	**37*****	**.42**
Region	Addis Ababa	220	524	568	**44*****	79	508	544	**36*****	**.16**
	Amhara	427	502	536	**34*****	141	472	501	**29*****	**.30**
	Oromia	409	484	530	**46*****	122	425	489	**64*****	**.59**
	SNNP	550	503	529	**26*****	143	439	468	**29*****	**.64**
	Somali	137	461	488	**27*****	49	417	446	**29*****	**.44**
	Tigray	447	474	490	**16*****	155	463	501	**38*****	**.11**
Locality	Urban	1,325	503	537	**34*****	308	464	499	**35*****	**.39**
	Rural	865	477	503	**26*****	381	435	474	**39*****	**.42**
	Difference		**27*****	**34*****			**29*****	**25*****		
Family economic background	*Wealthiest*	809	508	542	**34*****	148	463	493	**30*****	**.45**
	Poorest	772	477	504	**27*****	346	441	486	**45*****	**.36**
	Difference		**31*****	**38*****			22***	7		

Note: t-test of the maths mean gain is significant at $^{***}p<0.001$; $^{**}p<0.05$; The mean score is an interval scale centred on 500, with 500 defined as the mean of the pooled sample - from 2012-13 and 2018-19 cohorts

Figure 1

Decline in mathematics achievement for the 2012-13 and 2018-19 common sample



Next, we consider three disaggregations: by region, by rural/urban location, and by household wealth. We begin with region. Start-of-school test scores decline in all regions between 2012 and 2018, but the magnitude of these declines differ markedly. They fall by 0.30SD, 0.16SD, and 0.11SD in Amhara, Addis Ababa, and Tigray regions respectively, and by the even greater magnitudes of 0.64SD, 0.59SD, and 0.44SD in SNNP, Oromia and Somali respectively. Learning gains were slightly higher in 2018-19 than in 2012-13 in all regions except Addis Ababa and Amhara. However, once again, there is a considerable variation in learning gains across those regions, as shown in Figure 2: learning gains increased in Oromia (from 0.46SD in 2012-13 to 0.64SD in 2018-19), SNNP (from 0.26SD to 0.29SD), Somali (from 0.27SD to 0.29SD), and Tigray (from 0.16SD to 0.38SD), but fell by 0.08SD in Addis Ababa and 0.05SD in Amhara region. Overall, during the period in which the implementation of GEQIP-II reforms occurred, regional inequality in learning levels widened substantially over the six-year period, either because of differences in the size of the decline in start-of-school-year test scores, or because of changes in the magnitudes of learning gains, or both.

Figure 2

Decline in mathematics learning levels over time, by region

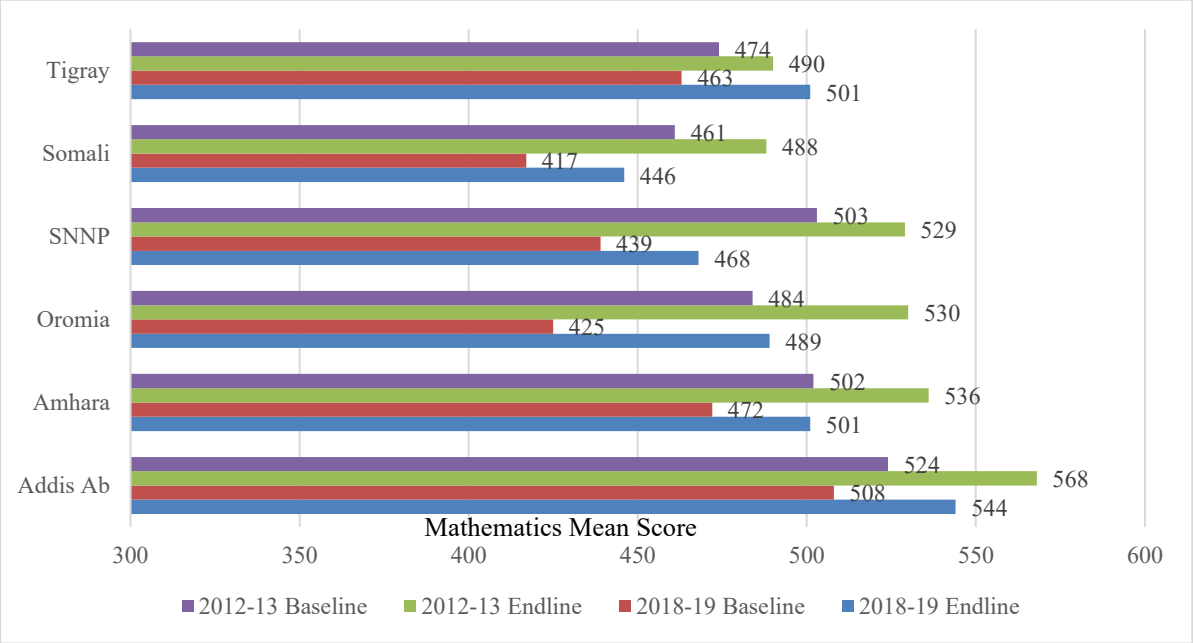
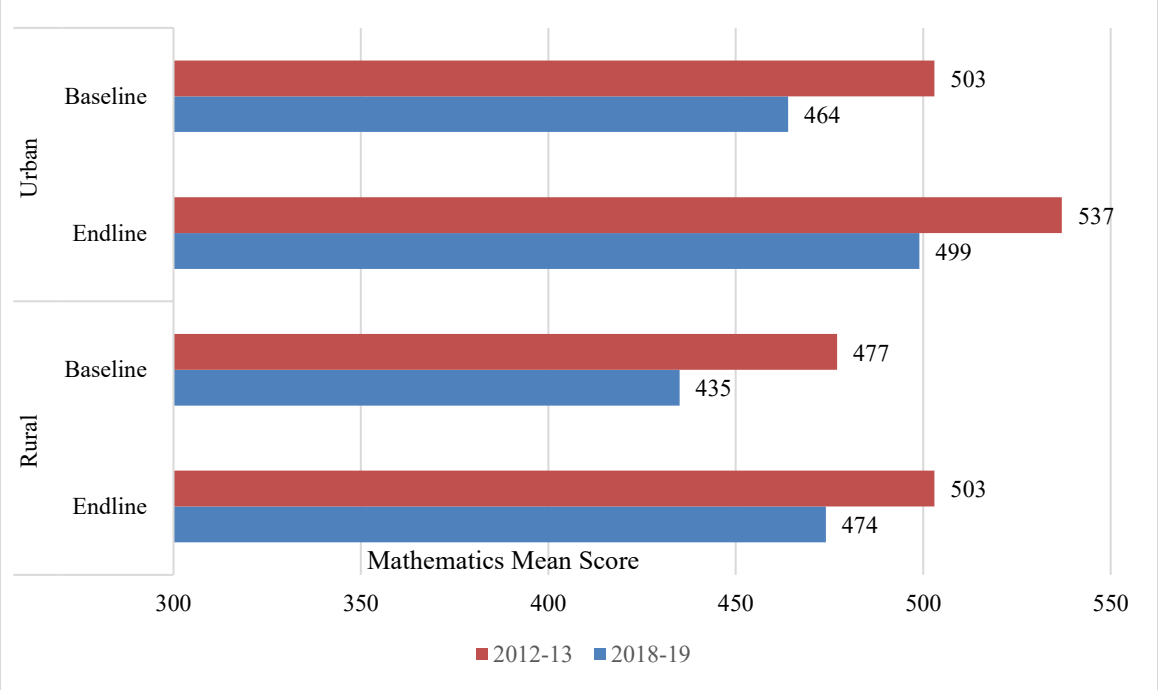


Figure 3. Decline in mathematics learning levels over time, by rural-urban location



In terms of rural-urban location, again, pupils from both locations made significant progress over the school year (in both 2012-13 and 2018-19). As shown in Figure 3, the progress in mathematics over a school year for urban pupils in 2018-19 was similar to that of their counterparts in 2012-13 (nearly a third of standard deviation). The progress for rural

pupils in 2018-19, however, was significantly higher (39 points) compared to the progress made by their counterparts in 2012-13 (26 points).

It should be noted again that there was an overall decline in average mathematics learning levels between 2012 and 2018 for both the urban and rural cohorts. The most notable finding is that the average *end of school year* mathematics score for rural pupils in 2018-19 (474 points) is lower than the average *start of school year* score for Grade 4 rural pupils in 2012-13 (477 points). This means that despite the strong progress in mathematics in the 2018-19 school year (39 points), after one year in school, Grade 4 rural pupils in 2018-19 did not reach the level that rural Grade 4 students achieved in 2012-13 before starting the school year. However, the urban-rural learning level gap decreased significantly between 2013 and 2019. The average gap at the end of Grade 4 in 2013 was 34 points, but it decreased to 25 points in 2019.

Lastly, we constructed a wealth index. This index was constructed based on households' durable assets, which serves as a proxy measure for the overall household economic advantage. Having done so, we divided our sample into tertiles and report results for children in households in the wealthiest and poorest tertiles. In both 2012 and 2018, start-of-year scores are lower for children residing in households in the poorest wealth tertile. This wealth gap in mathematics average scores shrinks slightly between 2012 and 2018. In 2018-19 the poorest group made significantly higher progress (45 points) over a school year, compared to the wealthiest group (30 points). Consequently, the gap in mathematics learning levels at the end of Grade 4 between the relatively wealthiest and poorest group declined markedly from 38 points in 2013 to 7 points in 2019.

There may be several possible explanations for these findings in the common school sample over the six-year period in question. In the following sections, we discuss all the findings in relation to pupils' backgrounds and GEQIP-II related school-resources and teacher-quality indicators.

Key pupils' background factors in 2012-13 and 2018-19: Rural and urban cohorts

Table 3 below provides descriptive statistics for key background indicators between the 2012-13 and 2018-19 cohorts, first for the overall sample, followed by rural-urban localities. Overall, pupils in the 2018-19 sample appear more disadvantaged in that: (i) their caregivers are less likely to be literate; (ii) they have fewer household assets; (iii) they travel relatively longer distances to school; and (iv) they are slightly older. These trends suggest that over time, increased school enrolment has been accompanied by an increase in the number of students from more relatively disadvantaged pupils in terms of their household assets and backgrounds, i.e., groups of pupils who might not have enrolled in the 2012-13 school year. When we look at the rural vs. urban sample, the results with respect to some of the indicators are mixed. Although the overall trend shows a decline, the proportion of literate primary caregivers for urban pupils has increased slightly (2 percentage points), and these pupils actually travelled shorter distances to get to school. The differences are statistically significant. By contrast, in

rural areas, there is an increase in the percentage of pupils from disadvantaged backgrounds as measured by caregivers' literacy and distance to school.

Table 3

Key pupil background indicators for the 2012-13 and 2018-19 common school cohorts, by rural-urban location

Indicator	2012-13				2018-19			
	Overall (*n*=2,190)	Rural (*n*=865)	Urban (*n*=1,325)	Difference (urban-rural)	Overall (n=689)	Rural (*n*=381)	Urban (*n*=308)	Difference (urban-rural)
Average student age	11.04	11.05	11.03	-0.02	11.13	11.4	10.8	-0.6***
Proportion of students who attended preschool, %	42.0	21.0	55.0	34.0***	50.0	36.0	66.0	30.0***
Proportion of students ever dropped out before Grade 4, %	19.0	20.0	18.0	-2.0	11.0	10.0	11.0	1.0
Average number of absent days in the current school year	1.64	2.44	1.11	-1.33***	1.46	2.03	0.71	-1.32***
Household durable assets, average	0.12	-0.72	0.67	1.39***	-0.47	-1.00	0.20	1.20***
Primary caregivers' literacy, %	50.0	45.0	52.0	7.0**	41.0	31.0	54.0	23.0***
Average time taken to walk to school (in minutes)	18.35	20.22	17.15	-3.07***	21.84	26.59	16.0	-10.56***

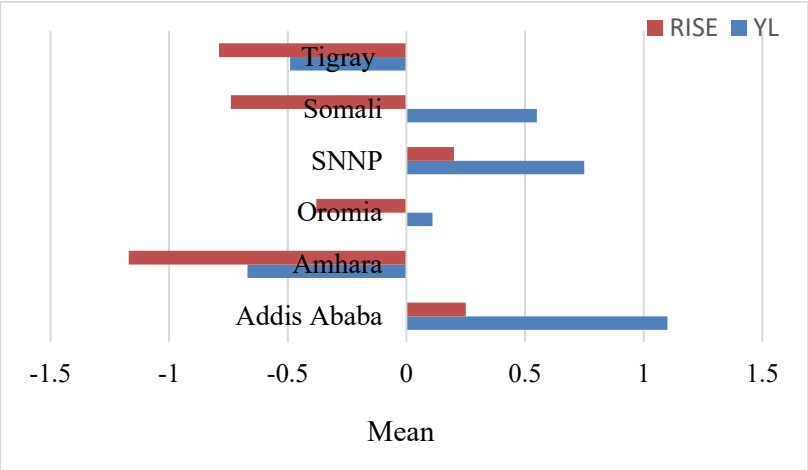
Note: t-test of the differences is significant at ***p<0.001; **p<0.05; Households' durable assets were used to measure household economic status, which serves as a proxy measure for overall household economic advantage. We decided to exclude items related to access to electricity, access to tap water and other services because they do not apply to rural areas of Ethiopia.

Despite being more disadvantaged on average in wealth terms, pupils in 2018-19 benefited from supply-side policies and improvements: they were (i) more likely to have attended pre-school; (ii) absent from school less frequently; and (iii) less likely to have dropped out (perhaps related to "automatic promotion"). The trend is the same when we look closely at pupils in rural and urban localities. While we cannot make strong statements about causality,

it is important to note that these improvements are consistent with the GEQIP-II reforms, in terms of supporting access, and pupil retention.

Figure 4

Household assets by region for 2012-13 and 2018-19 common sample



When we look specifically into household assets, patterns vary somewhat by region, as illustrated in Figure 4. Tigray region—where declines in start-of-school scores were modest—saw the lowest decline in pupils' background indicators in the form of household assets, while Somali region (where declines in start-of-school scores were much higher) saw the steepest decline between 2012 and 2018.

Indicators for School Resources- and Teacher-Quality

Table 4 reports the indicators of school resources for rural and urban schools, focusing on those related to GEQIP-II reforms as recorded in both surveys while Table 5 presents selected background characteristics of teachers. At the school level, the pattern of change for the overall sample is mixed, but broadly positive, with some improvement in the availability of: (i) a pedagogical resource centre, (ii) computers and internet access, and (iii) full-day shift schooling being recorded, while fewer schools reported receiving money from a school grant. Looking at the rural-urban differences in key school resources, the pattern is similar. The proportion of functional libraries, working computers, functional pedagogical resource centres, and separate toilets for girls and boys increased for both rural and urban schools in each of the two cohorts. Rural schools showed better improvement across some indicators than their urban counterparts, including the number of additional classrooms built, access to working radios for instructional purposes, and the proportion of schools operating a full-day shift.

Table 4

School resource indicators related to GEQIP-II reforms, by rural-urban location

		2012-13			2018-19		
	Indicator	Rural	Urban	Diff.	Rural	Urban	Diff.
1.	Schools that provide one G4 maths textbook per student, %	63.0	85.0	22.0	58.0	64.0	6.0
2.	School received funding from school grant last year, %	95.0	93.0	-2.0	84.0	71.0	-13.0
3.	Average number of classrooms in the school	8.95	20.0	11.05***	11.05	19.71	8.66**
4.	Average number of students per class	51.0	56.0	5.0	50.0	53.0	3.0
5.	Presence of a functional library, %	58.0	86.0	28.0*	68.0	100.0	32.0**
6.	Average number of working computers used by the students	0.42	2.0	1.58	0.68	5.07	4.39**
7.	Schools with access to functional Internet for the students, %	0	7.0	7.0	0	29.0	27.0**
8.	Schools with access to working radios, %	53.0	86.0	33.0**	74.0	79.0	5.0
9.	Schools with a functional pedagogical resource centre, %	47.0	64.0	17.0	79.0	93.0	14.0
10	Schools operating a full-day shift, %	0	21.0	21.0**	11.0	21.0	10.0
11	Average number of working toilets in the school	5.79	10.5	4.71**	5.37	13.29	7.9***
12	Schools with separate toilets for girls and boys, %	89.0	86.0	-3.0	95.0	100.0	5.0

Notes: Diff. = Difference between urban and rural scores for the indicators; Total number of rural schools is 19, and urban schools is 14; *t*-test of the differences is significant at ***p*<0.05; **p*<0.1

In terms of teacher quality, as shown in Table 5, the trends were broadly positive. The proportion of qualified and specialised teachers improved notably, as did the average levels of mathematics content knowledge, and the proportion of teachers who had completed level 2 CPD training. However, teachers were more likely to be younger and less experienced in 2018-19 than in 2012-13. A closer look at the urban-rural differences across the 2012-13 and 2018-19 cohorts reveals a similar trend. The proportion of mathematics teachers with a diploma or university degree, teachers who completed level 2 CPD training, and teachers' mathematics content knowledge improved notably for rural schools compared to those in urban settings. For example, the 2012-13 urban-rural gap in teachers' mathematics content knowledge was 44

points (nearly half a standard deviation, in favour of teachers from urban schools). For the 2018-19 cohort, however, the urban-rural gap got reversed, with rural teachers scoring 11 points higher. It is unclear why this has occurred. It is possible that the GEQIP-II related educational reforms on the provision of in-service training benefited rural teachers more than their urban counterparts.

Table 5

Teacher quality indicators related to GEQIP-II reforms, by rural-urban location

	2012-13			2018-19		
	Rural	Urban	Diff.	Rural	Urban	Diff.
1. Proportion of male mathematics teachers, %	50.0	57.0	7.0	50.0	62.0	12.0
2. Teachers' age, average	31.39	38.93	7.54**	29.69	33.38	3.70
3. Teachers' years of teaching experience, average	9.77	15.33	5.56*	4.41	6.2	1.79
4. Proportion of teachers with a diploma/university degree/ teacher training qualification, %	72.0	64.0	-8.0	100.0	77.0	-23.0**
5. Proportion of teachers who completed level 2 CPD training, %	50.0	43.0	-7.0	50.0	69.0	19.0
6. Proportion of teachers who specialised in mathematics, %	17.0	21.0	4.0	71.0	100.0	29.0**
7. Teacher experience of teaching Grade 4, average	9.28	18.36	9.08**	4.0	5.92	1.92
8. Teacher's mathematics content knowledge, average	460.0	504.0	44.0*	520.0	510.0	-10.0

Notes: Diff. = Difference between urban and rural scores for the indicators; total number of teachers in rural schools is 19, and in urban schools is 14; *t*-test of the differences is significant at $^{***}p<0.001$; $^{**}p<0.05$; $^{*}p<0.1$

Discussion

The GEQIP-II reforms (2012-2018) in Ethiopia focused on improving quality, equity, and learning outcomes through investment in critical areas of the general education system. Within this context, we provide descriptive statistics relating to scores on mathematics tests administered at the beginning and end of Grade 4 in a purposefully selected sample of 33 schools in six regions of Ethiopia. We found that learning *levels* declined over the six-year GEQIP-II reforms period, while pupils demonstrated slightly higher learning *progress* over a school year. There is some evidence of differences in learning progress among pupils across regions and rural-urban localities. In turn, this generates two questions: (1) Why did mathematics learning levels decline over the six-year period while pupils made relatively higher progress in the 2018-19 school year compared to 2012-13?; and (2) Why did progress in mathematics over the school year differ for the two periods between pupils across rural-urban locations, regional states, and family economic backgrounds?

The overall decline in learning levels, the continued gap in learning levels between what are termed established regions (such as Addis Ababa) and emerging regions (e.g., Somali), and between urban and rural pupils appear to raise questions regarding the equity effects of the GEQIP-II reforms. Looking at learning *levels* alone, one may conclude that pupils from rural schools, from the poorest socio-economic backgrounds, and from emerging regions may not have benefited equally from the GEQIP-II reforms. That said, there is also evidence of changes in student composition between 2012 and 2019. For example, there is an increase in enrolment in the Somali region among students from disadvantaged backgrounds, which may explain the lowest learning levels for pupils in this region in 2019 at the end of Grade 4. As previously noted, pupils in the Somali region made relatively lower progress over the 2018-19 school year, and performed the lowest both at the start and end of the school year compared to the other regions.

Accordingly, the decline in mathematics scores should not be seen as a failure of the GEQIP-II educational reforms, although our findings do raise questions about the design and scale of reforms that may be needed to improve learning outcomes for all. As shown above, there is little evidence to suggest that school and teacher quality worsened between 2012 and 2019. In fact, there is some evidence that some of the key school and teacher quality indicators improved over the reform period. We also found that the Grade 4 2018-19 cohort (right after the GEQIP-II reforms began) was more likely to have attended pre-school, have lower absence rates, and have fewer episodes of dropout compared to pupils in Grade 4 in 2012-13 (prior to the reforms). These pupil-level improvements are linked to the GEQIP-II reforms in terms of supporting access and student retention. At the same time, there are several indications to suggest that the enrolment of pupils from relatively disadvantaged backgrounds increased between 2012 and 2018. It could be that the influx of more disadvantaged pupils (i.e., those from the poorest economic backgrounds, with caregivers who are illiterate) into the primary education system contributed to the decline in average learning levels. As literate or educated caregivers are more likely to make a greater investment in their children's education (e.g., Rolleston, 2014), the decline in the proportion of literate caregivers for rural pupils may have contributed to the decline in learning levels. Besides, given the expansion in enrolment among the most disadvantaged children in Ethiopia, it is possible that pupils in 2018-19 may have entered Grade 4 under-prepared to learn, compared to those in 2012. Overall, given that in some respects pupils became more disadvantaged over time, the fact that progress in mathematics improved slightly for the 2018-19 RISE cohort and notably so for the RISE rural cohort suggests that the potentially negative effects of home disadvantages were overcome by countervailing factors, including some of the GEQIP-II related improvements in school and teacher quality.

It should also be noted that improvements in key measures of school infrastructure and teacher characteristics associated with the GEQIP-II reforms may take a significant amount of time to produce improvements in learning levels in a system that is expanding rapidly while simultaneously targeting more children from disadvantaged backgrounds. In countries such as Ethiopia, where enrolment among the most disadvantaged is increasing rapidly, the immediately observable effects are reductions in start-of-school year test scores. Educational reforms such as GEQPI-II that target school environments as sites for systematic intervention may well be promising responses to such trends in the long term.

In turn, our findings suggest that the equity dimensions of GEQIP-II may be well-chosen, with pupils from rural schools being able to make significantly higher progress in mathematics over the 2018-19 academic year compared with similar learners prior to the reforms (2012-13). It is possible that the decline in start-of-school year test scores is driven by the effects of expansion into more marginalised segments (e.g., rural areas, deprived economic backgrounds, and emerging regions, in this case). This enrolment profile, combined with improvements in teacher qualifications for schools in rural areas, strong improvements in rural school teachers' mathematics content knowledge, and the notable progress in mathematics over time in favour of pupils from relatively poorer economic backgrounds could instead be viewed as both access and equity successes of GEQIP-II in Ethiopia.

Direction for Future Research

We noted from our analysis that pupils from relatively advantaged backgrounds, who were on target to succeed, seem to fail to continue to make comparable learning progress over time. For example, with respect to urban pupils in the 2018-19 cohort, learning progress did not improve, compared to the same group in 2012-13; and pupils from relatively wealthier economic backgrounds made slightly lower progress in mathematics in 2018-19 compared to that made by the same group in 2012-13, prior to the GEQIP-II reforms. Moreover, mathematics content knowledge among teachers of Grade 4 urban pupils in 2018-19 did not improve compared to the same urban group in 2012-13, although the content knowledge for the 2018-19 rural teachers saw notable improvements. A key question, therefore, is whether some pupils are made relatively 'worse off' by expansion, even though a large number are much better off (those who had very limited access previously). Ensuring that more pupils benefit from educational reforms without disadvantaging historically more advantaged pupils (e.g., urban pupils and those from relatively wealthier backgrounds) seems to be a reasonable and just strategy for future education reforms. Our findings appear to suggest that GEQIP-II has fallen slightly short on 'raising the roof', and going forward. This may be a lesson for Ethiopia and for other countries undertaking reforms with similar aims and within similar contexts. Understanding key inputs of educational reforms that improve learning outcomes for all children is an important topic for future research.

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The Experience of Bahir Dar University Teacher Educators in Practicing Society-centered Instruction

Mulugeta Yayeh Worku (PhD)[3]

Associate Prof., Institute of Pedagogical and Educational Research, Bahir Dar University

Abstract

The purpose of this study was to understand the practice of society-centered instruction in teacher education classrooms. Hence, a qualitative research approach focusing on phenomenological design was employed. Participants of the study were six teacher educators from the College of Education and Behavioral Sciences, Bahir Dar University. They were selected through purposive sampling technique. Semi-structured interviews and document analysis were used to collect data essential for the study. An adapted five-stage data analysis model was also used to analyze the data collected through the above methods. The findings of the study revealed that the experience of teacher educators in practicing society-centered teaching methods and assessment techniques was minimal. The study also revealed that the instructional processes in teacher education classrooms of Bahir Dar University were not satisfactorily interconnected with major issues of society. Towards the end of the article, the implications of these findings for classroom practices and policy initiatives are highlighted.

Keywords: Social reconstructionism, societal problems, society, society-centered instruction, teacher education

Introduction

Though the central purpose of education is still debatable, its role in alleviating societal problems and ameliorating life in society is indisputable. By preparing citizens who could actively participate in the multifaceted issues of society, education plays an indispensable role in sustaining the existence of societies and their cultural heritage. Its role in bringing about social justice and better social orders is also worth mentioning (Brameld, 1971; McNeil, 1996; Stanley, 1992).

Despite this, many countries today are besieged with lots of problems. For instance, global warming, ozone depletion, desertification, environmental pollution, and drought are among the challenges that are threatening the survival of mankind today (Desha & Hargroves, 2014; Ornstein

[3] Corresponding author, email: gashu65@gmail.com

& Hunkins, 2004; Quisumbing, 2002). Likewise, many societies around the world are suffering from absence of democratic socio-political systems. Racial, gender, economic, and political inequalities are pervasive problems in many parts of the world (Cogan & Derricott, 2000; Quisumbing, 2002; Schiro, 2013). Terrorism, according to many writers, has also become a challenge in many societies. In a nutshell, as Desha and Hargroves (2014) succinctly indicated, peoples of the 21st century are living in 'urgent' and 'challenging' times. Many educators (e.g., Brameld, 1971; Ellis, 2004; Hill, 2006; McNeil, 1996; Ornstein & Hunkins, 2004; Schiro, 2013) contend that the societal problems that many societies have been experiencing emanated partly from the failure of educational and instructional practices to give adequate attention to society and societal issues. As many research findings revealed, the social function of education and the society-centered educational approach have been marginalized in the education system of many countries (Brameld, 1971; Ellis, 2004; Stanley, 1992). Overwhelmed by the progressive educational philosophy and the learner-centered instructional approach, many educational systems did not give society and societal problems considerable attention. Due to this, many societies are not benefiting much from the educational services they are delivering. For these scholars, rethinking the relevance and appropriateness of instructional practices is of paramount significance if educators are to meaningfully discharge their social and professional responsibilities.

It was with this general educational belief and concern of educators to society and societal issues that the present study was initiated. Of course, the absence of research on the place of society and societal issues in the teacher education programs of Ethiopia was the most important reason to undertake this study. As of the researcher's best knowledge, full-fledged research that aims at investigating these topics has not been conducted in the education system of Ethiopia. This study, therefore, aimed to understand the practice of society-centered instruction in teacher education classrooms focusing on the lived experiences of Bahir Dar University teacher educators. Reflecting this purpose, the present study is organized under the following two research questions: What are the experiences of Bahir Dar University teacher educators in practicing society-centered instructional methods? and What are the experiences of Bahir Dar University teacher educators in employing society-centered assessment techniques?

Theoretical Framework

In this study, Social Reconstructionism is used as a theoretical framework. Social Reconstructionism is an educational philosophy started in the United States of America in the first half of the 20th century (Brameld, 1971; Ellis, 2004; Hill, 2006; McNeil, 1996; Orenstein & Hunkins, 2004; Stanley, 1992; Thomas, 2010). Nevertheless, ideas similar to this philosophy have been reverberating throughout the history of mankind. As the name of the philosophy suggests, Social Reconstructionism is much concerned with issues of society, societal problems, social reform, social justice, and social transformation (Belbase, 2011; Brameld, 1971; Ellis, 2004; Hill, 2006; McNeil, 1996; Stanley, 1992). Because of this, some educators (e.g., Ellis, 2004) use the phrase *society-centered educational philosophy* while referring to Social Reconstructionism. For

many educators, Social Reconstructionism is a relevant educational philosophy for societies entangled with various societal problems. In line with this, Theodore Brameld, one of the founding fathers of the philosophy, described Social Reconstructionism as a crisis philosophy appropriate for a society that experiences social crisis (Brameld, 1971).

In Social Reconstructionism, teachers are expected to play many professional roles. These include (1) understanding the major foundations of the philosophy, (2) prioritizing society and societal issues in different professional endeavors, (3) using society-centered teaching and assessment methods, (4) exercising democratic teaching in the classroom, (5) developing students' social conscience, (6) envisioning better society, and (7) taking part in various society-related projects. Taking sides in favor of society, posing and discussing sensitive societal issues, acting as a social activist, and serving as an agent of social change are also among the duties of Social Reconstructionist teachers (Brameld, 1971; Ellis, 2004; Hill, 2006; Schiro, 2013; Stanley, 1992).

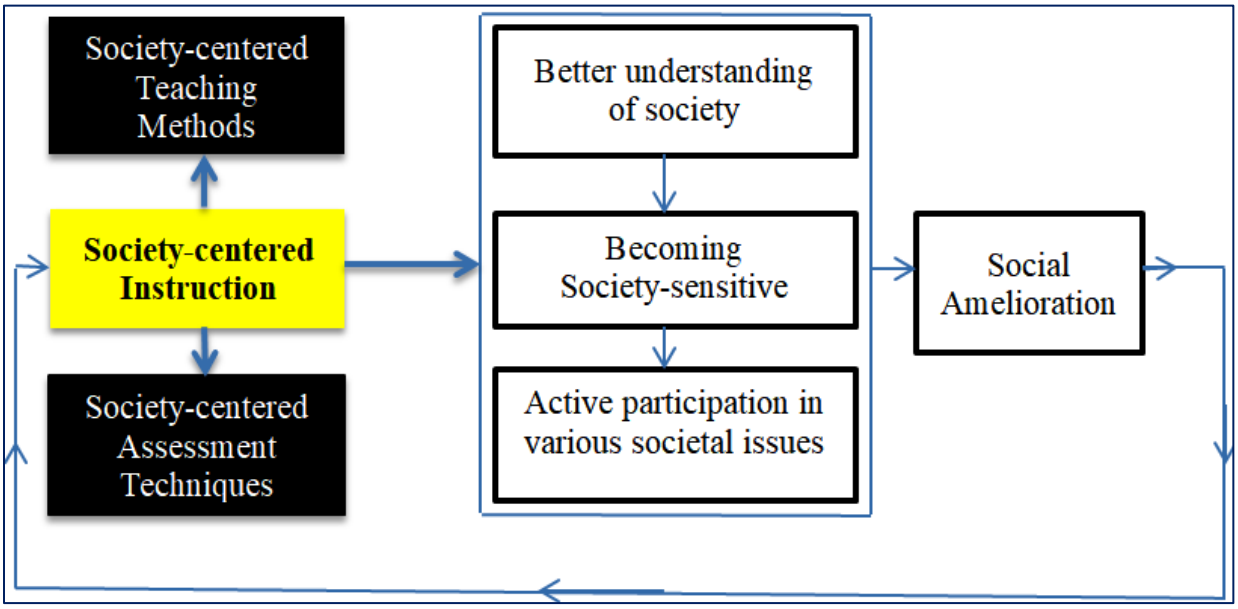
Of the above Social Reconstructionist duties, this study sought to investigate the practice of the society-centered teaching and assessment methods. The phrase society-centered teaching method refers to any teaching method that aims at developing students' understanding of the real nature of contemporary societies. For this purpose, teachers are required to utilize methods that encourage students to explore the community and figure out their problems. In other words, instead of employing traditional methods that aim at knowledge acquisition, teachers are expected to use methods that encourage students to learn and explore the community and its problems (Brameld, 1971; Ellis, 2004; Freire, 1970; Hill, 2006). In this regard, the use of such specific instructional methods as community service learning, community-related team projects, pageants, dramas, school assemblies, and school governments are considered important society-centered teaching methods (Ellis, 2004; McNeil, 1996).

Also in Social Reconstructionism, teachers are expected to employ society-centered assessment techniques. Society-centered assessment is an approach of assessment that encourages students to take active part in various society-related activities (Ellis, 2004; Hill, 2006; McNeil, 1996; Stanley, 1992). It includes assessment techniques that encourage students to apply the knowledge they acquired to solve various practical problems of the society and to contribute their parts in the social reconstruction process.

Teachers' practice of society-centered instruction, i.e., the use of teaching and assessment methods directly related to society and societal problems, plays a crucial role in developing students' understanding of their society. Its contribution in making students society-sensitive and active participants in diverse issues of their society is also very important. In Social Reconstructionism, all these student behaviors embrace a central position in the process of social amelioration and, indeed, in establishing better social orders.

Figure 1

Conceptual Framework



This study, therefore, aimed at examining the experience of Bahir Dar University teacher educators in utilizing instructional methods that center society and employing assessment techniques that enhance society-centered learning.

Method

The present study employs phenomenological research design. As Creswell and Poth (2018) explained, phenomenology is a research design that aims at understanding people's lived experiences within a specific phenomenon. In this study, phenomenological design was found to be more appropriate because the purpose of the study was to explicate the lived experiences of teacher educators in executing one major role of a Social Reconstructionist teacher. The research site for the present study is Bahir Dar University (BDU). BDU is one of the public universities in Ethiopia. It is located in Bahir Dar, the capital city of the Amhara National Regional State. Currently, BDU is one of the largest higher education institutions in Ethiopia. College of Education and Behavioral Sciences (CEBS) is one of the oldest colleges of the University. At present, the college enrolls students at undergraduate and postgraduate levels.

Participants of the study were six teacher educators who were teaching at Bahir Dar University. They were selected from three departments within the College of Education and Behavioral Sciences. The sampling technique used to select them was purposive sampling. Willingness to research participation and experience of teaching at teacher education institutions were the criteria used to select the research participants. In this regard, the teacher educators who participated in this study had an experience of teaching that ranges from 10 to 16 years. In terms

of academic rank, four of the participants were Lecturers while the remaining two were Assistant Professors. Sex wise, all of them were males.

To obtain data essential for the study, semi-structured interviews and document analysis methods were used. The interview schedule, the major data gathering method, had eight open-ended questions. Using these items, several related probes and follow-up questions were posed. In the data gathering process, each participant was interviewed in a session that lasted from 40 to 55 minutes. The document analysis method, on the other hand, was used to complement the data that were obtained through interview. In this regard, teacher-educators' course guidebooks and assessment records were critically analyzed.

The process of qualitative data analysis, according to Huberman and Miles (1994), involves the following three interrelated steps: data reduction, data display, and conclusion drawing and verification. Creswell and Poth (2018) argue that data analysis in qualitative research is a four-step process involving data management (organizing data into file folders, index cards or computer files), reading and memoing (getting a sense of the whole database), describing, classifying and interpreting data, and presenting the data in text, tabular or figure form.

Bearing these ideas in mind, an adapted five-stage data analysis model was used. Using this model, the following five steps of data analysis were passed through: data reduction, data organization, getting a sense of the data organized, data display, and data description and interpretation. The task of data analysis was made on two themes that reflect the purposes and leading questions of the study. While analyzing the data, such specific techniques as description, narration, and verbatim citation were employed.

Results

This part presents the results of the study under the following two themes: teacher educators' experience of utilizing society-centered instructional methods and teacher educators' experience of using society-centered assessment strategies. The themes emanated from the two research questions indicated earlier.

Teacher Educators' Experience of Utilizing Society Centered Instructional Methods

If education in general and teacher education in particular is to facilitate the process of social reconstruction, instructional methods that aim at developing students' understanding of the real nature of contemporary societies need to be employed. In this regard, teachers are required to utilize teaching-learning methods that encourage students to explore the community and figure out their problems.

To understand teacher educators' experience of using society-centered instructional methods, data were collected through interviews and document analysis. The data obtained through these methods are presented as follows.

According to the data obtained through interviews, the research participants had no satisfactory experiences of using society-centered instructional methods. The following response of Daniel[4] is a good example in this regard.

> The teaching methods that I frequently use are more teacher-centered. Society-centered pedagogy, I believe, is possible in fields such as Public Health and Adult Education.

Similarly, Abay forwarded the following ideas.

> My teaching methods are more teacher-centered. Nearly 70% of the teaching methods I use are teacher-centered while 30% of them are student-centered. In short, I do not have the experience of using methods that are directly centered on society. For instance, I did not employ the service-learning method so far.

Hussein explained his experience as follows.

> The instructional methods I repeatedly employ are not far from the "chalk and talk" approach. In other words, they are traditional and teacher-centered. On rare occasions, I try to employ some active learning methods.

From the above responses, one can easily understand that the instructional methods frequently used by the research participants were teacher-centered.

Other participants, on the other hand, were using a mixed type of instructional method. Let us see the responses of the following two participants.

Adam's instructional methods had the following features.

[4] All participant names used in this study are pseudonyms.

> In the classroom, I use teaching methods that range from gapped lecture to some student-centered instructional strategies. Most of the time, I initiate an issue first. Then, I brainstorm and motivate students to talk on the issues that I raised. After listening to their reflections, I will make lectures. However, I do not have the experience of using specific society-centered instructional methods like the service-learning method.

Fasil had also a similar experience.

> They are a mixture of student-centered and teacher-centered. I intend to deliver student-centered instruction. I always believe that the role of the teacher is to facilitate instruction and to ignite students' learning. My course guidebook, in particular, is student-centered. However, students are not interested in this instructional approach.

Generally, the interview data presented above imply that the research participants had been using either teacher-centered or student-centered instructional methods. Their responses entail that they had no satisfactory experiences of using society-centered instructional methods.

In the interview sessions, participants of the study were asked to list the top five instructional methods they frequently used in their classrooms. Their responses are presented in Table 1.

Table 1

The Top Five Instructional Methods Frequently Employed by Teacher Educators

Participant	*Frequently Employed Instructional Methods*
Fasil	Lecture, group discussion, reflection, individual assignment, and group assignment.
Daniel	Lecture, group discussion, demonstration, individual work, and reading assignment.
Abay	Lecture, group discussion, presentation, individual assignment, and a reading activity.
Adam	Lecture, discussion, brainstorming, independent reading, and project work.
Michael	Gapped lecture, group discussion, independent work, project work, and brainstorming.
Hussein	Gapped lecture, brainstorming, pair work, group work, and question- answer.

The data presented in Table 1 is somewhat consistent with the one already presented above. According to these data, the teacher educators were frequently using instructional methods that were either teacher-centered or student-centered. For instance, the lecture method was found to be at the top of the instructional methods used by Fasil, Daniel, Abay, and Adam. The other version of the lecture method, the gapped lecture method, was also found to be the number one instructional method for the remaining two participants, i.e., Michael and Hussein. This implies that there was a tendency to use traditional instructional methods. Many of the remaining methods reported by all of the research participants (e.g., group discussion, individual work, brainstorming,

presentation, and question-answer) suggest that the student-centered or active learning methods were also important in the instructional process of teacher education classrooms.

To substantiate the above results, additional data were collected through document analysis. In this regard, an attempt was made to critically analyze the participants' course guidebooks focusing on the instructional methods they planned. Data obtained through this method are presented in Table 2.

Table 2

Instructional Methods Planned in Participants' Course Guidebooks

Participant	*Instructional Methods*
Fasil	Brainstorming, peer discussion, group discussion, lecture, article review, group assignment, and presentation.
Daniel	Brainstorming, lecture, buzz group, independent reading, group discussion, reflection, and debate.
Abay	Lecture, classroom exercises, discussions, independent reading, independent assignments, group works/assignments, projects, practicum, case studies, and fieldwork.
Adam	Lecture, small group discussion, presentation, gapped lecture, debate, reflection, group assignment, and individual assignment.
Michael	Lecture, review of reading materials, group discussion, presentation, reflection, project work, and case study.
Hussein	Lecture, group discussion, presentation, reflection, debate, question-answer, and interviewing of professionals.

The data presented in Table 2 indicate that at a course guidebook level, different instructional methods were planned by the research participants. Both traditional (e.g., lecture) and modern (e.g., reflection and debate) methods were planned to be employed in classrooms. Methods such as projects, case studies, fieldwork, group discussions, reflections, debates, interviewing, and article review could be considered relevant society-centered instructional methods provided that they were focused on society and societal problems.

Teacher Educators' Experience of Using Society-centered Assessment Strategies

The present study also attempted to understand the experience of teacher educators in using society-centered assessment methods. For this purpose, data were collected through document analysis and interviews. The data obtained through these two methods are presented as follows.

Table 3

Assessment Techniques Planned in Course Guidebooks

Participant	*Assessment Techniques and Weight*	
Fasil	Participation (15%)	Attendance (5%)
	Assignment (20%)	Final Examination (35%)
	Mid Examination (25%)	
Daniel	Individual Assignment (11%)	Mid Examination (25%)
	Quizzes (12%)	Final Examination (40%)
	Group Assignment (12%)	
Adam	Group Assignment (12%)	Mid Examination (25%)
	Quiz (11%)	Final Examination (40%)
	Individual Assignment (12%)	
Abay	Quizzes (12%)	Group Assignment (7%)
	Test (11%)	Presentation (5%)
	Mid Examination (25)	Final Examination (40%)
Michael	Group Discussion & Presentation (20%)	Project Work & Presentation (20%)
	Case Study Report & Presentation (20%)	Final Examination (40%)
Hussein	Group Assignment & Presentation (30%)	Mid Examination (20%)
	Reading Assignment (10%)	Final Examination (40%)

As can be seen from Table 3, the research participants had planned some assessment techniques in their course guidebooks. One problem that could be understood from the above data, however, is that the assessment techniques they planned were limited in number. In this regard, the first three research participants planned only five assessment techniques while the fifth and sixth ones planned only four. Another major problem that could be understood from the same table is that the major concern of participants' assessment was tailored to knowledge mastery. This is because much weight was given for quizzes, tests, and mid and final examinations. For example, the assessment weights that Daniel, Adam, and Abay assigned to these techniques were 77%, 76%, and 88% respectively.

To obtain further understanding of teacher educators' assessment techniques, data were gathered through interviews. The responses of the participants, however, revealed that they had no meaningful experience of using society-centered assessment methods. The responses of the following three participants epitomize this contention.

Abay briefly described his assessment experience as follows.

> To tell the truth, my assessment methods are not directly related to society. Mostly, they aim at checking students' mastery of course contents.

Adam's experience was also not different.

> Generally, I do not use assessment methods that aim at enhancing students' participation in the community. This is because of the transportation problem at our university. It is also very difficult to practice this assessment concept.

Similarly, Michael forwarded the following ideas.

> Generally, I prefer subjective questions than objective ones. I encourage my students to reflect on different issues. For this purpose, sometimes I allow them to write whatever they think is relevant. Coming to your question, I do not have any experience of using an assessment that aims at enhancing students' involvement in the community.

From the above data, it is possible to understand that the research participants had no adequate experience of using assessment techniques that aim at enhancing students' participation in society. As can be seen from their responses, most of the assessment techniques they used were traditional. Though not different from the experiences of the above three participants, the following two participants reported that they were making some efforts to make society-centered assessments. In line with this, Abay described his experience as follows.

> Sometimes, I tried to give tasks that require students to make observations in public institutions. For instance, once I gave my students an assignment that requires data gathering from the nearby schools. However, that task was not satisfactorily accomplished. For Abay the reasons behind this problem were the following.
>
> First of all, there is no enabling environment. For instance, students themselves are reluctant to perform these kinds of challenging tasks. The school personnel are also not cooperative in providing data essential for the tasks.

Fasil had also a similar experience.

> Sometimes, I give students assignments that require data collection from such institutions as secondary schools, economic development bureaus, education offices, technical and vocational institutions, and social affairs bureau. However, I do not have the experience of using assessment methods that involve students in the local community.

The responses of the above two participants imply that these educators had attempted to use assessment techniques that encourage students' involvement in some public institutions. From their responses, however, it is possible to understand that they did not employ assessment methods that enhance students' engagement in the community.

Discussion

The desire to make education a means of social amelioration depends on the utilization of relevant instructional methods that are centered on society and various societal issues. In this regard, instructional methods need to be configured to students' understanding of the real nature

of contemporary societies. For this purpose, teachers are advised to use methods that help students to learn and explore the community and its problems (Freire, 1970; Brameld, 1971; Ellis, 2004; Hill, 2006). Encouraging students to take part in projects related to the community, and most importantly, utilizing instructional methods like community service learning are also considered to be important teacher duties. Based on the above pedagogical principles, this study tried to understand the experience of teacher educators in practicing various society-centered instructional methods. However, the results of the study revealed that they had no satisfactory experiences on this professional duty. From the experiences of some participants, it was understood that the instructional methods they frequently used were teacher-centered. As the findings of the study revealed, traditional instructional methods that were less relevant for social amelioration and Social Reconstruction were dominating the teaching-learning processes.

The experiences of other participants, on the other hand, showed that they were using a mixture of teacher-centered and student-centered instructional methods. Stated another way, these teacher educators were using either teacher-centered or student-centered instructional methods. However, they failed to employ methods aimed at enhancing students' involvement in the community.

Though some useful instructional methods were explored in the participants' course guidebooks, their implementation in the classrooms was unsatisfactory. As the teacher educators reported, their experience of integrating instructional methods with society and societal problems was inadequate. Most importantly, basic instructional methods advocated by the Social Reconstructionist educators (e.g., community service learning) were not practiced by any teacher educator.

Therefore, at this point, it is plausible to conclude that the experiences of teacher educators in utilizing society centered instructional methods were inadequate. Their relevance to realize the vision of establishing better social orders through education was also found to be questionable.

The above finding is not in line with the positions of many Social Reconstructionist educators (Ellis, 2004; Hill, 2006). For instance, the advice of Ellis (2004) on the importance of such participatory society-centered instructional methods as pageants, dramas, team projects, school assemblies, and school government were not practiced. Likewise, the suggestion of McNeil (1996) to involve students in different community-related activities was not given due attention. According to this educator, involving students in the community is vital to help them learn how to solve various societal problems practically and intelligently. Though further studies may be needed to understand the reasons behind the above result, it seems appropriate to forward some possible factors at this moment. One possible reason for teacher educators' poor performance in using society-centered instructional methods, I argue, is related to their understanding of the Social Reconstructionist educational philosophy. As indicated by Mulugeta (2016), the familiarity and understanding of many teacher educators on the multifaceted issues of the philosophy were inadequate. Without an adequate understanding of the philosophy, teacher educators are less likely to conduct Social Reconstructionist instructional practices. Put differently, as Fullan (1991) convincingly indicated, teachers cannot teach what they do not know.

The failure of the Ethiopian education policy to give due attention to the Social Reconstructionist educational philosophy would also contribute to teacher educators' failure to practice society-centered instructional methods. As Mulugeta et al. (2018) pointed out, the place of society and societal problems in the education policy of Ethiopia is too low. Due to this, the utilization of society-centered instructional methods is less likely to get adequate attention at various educational, curricular, and instructional practices. Many educators unanimously contend that both traditional and standardized assessment methods are less relevant to the success of Social Reconstructionism. Hence, they advise teachers to employ assessment techniques that aim at developing students' social conscience and those that encourage students' engagement in various societal problems (Ellis, 2004; Hill, 2006; McNeil, 1996; Stanley, 1992). For them, assessment should also encourage students to apply the knowledge they acquired to various practical efforts that aimed at social amelioration.

Bearing these ideas in mind, the present study has attempted to understand teacher educators' experience of using society-centered assessment strategies. Nevertheless, the results of the study revealed that they did not satisfactorily materialize this Social Reconstructionist professional duty. From the data collected through document analysis and interviews, it was understood that they had no adequate experience of using society-centered assessment strategies that aim at enhancing students' understanding of and participation in the community.

The reasons discussed in the instructional methods section, I believe, were important behind this problem. Whatever the reasons might be, teacher educators did not satisfactorily employ assessment techniques that encourage students to observe and understand the real nature of society, to take part in different affairs of the community, and to apply the knowledge that they acquired to solve societal problems. This, in turn, indicates that the ideas of many Social Reconstructionist educators (Brameld, 1971; Ellis, 2004; Freire, 1970; Hill, 2006; McNeil, 1996) on the issue under discussion were not materialized in teacher education classrooms of Bahir Dar University. As many educators contend, knowledge for the sake of knowledge has little or no relevance in the process of social reconstruction. Instead, knowledge acquired should be applied to solve the problems of society. Assessment methods and procedures, therefore, should be geared towards ascertaining whether or not this important educational idea was materialized on student-teachers.

Conclusions

This study sought to examine the experience of Bahir Dar University teacher educators in implementing society-centered instructional methods. It also aimed at understanding their experience of using society-centered assessment techniques. Accordingly, the study came up with the following findings. The first finding of the study indicates that the teacher educators under consideration had no satisfactory experiences of using society-centered instructional methods. Instead, traditional instructional methods that were less relevant to social amelioration were dominating the instructional processes of the university's teacher education classrooms. Their

experience of integrating instructional methods with society and societal problems was also inadequate. Above all, basic instructional methods advocated by the Social Reconstructionist educators (e.g., community service learning, pageants, dramas, and team projects) were not implemented by the teacher educators.

The second finding of the study also revealed that the teacher educators had no adequate experience of using assessment strategies that aimed at enhancing students' understanding of and participation in the community. In other words, they did not employ assessment methods that were relevant to the social amelioration and social reconstruction educational agendas.

Overall, from the above findings, it is possible to deduce that the experience of Bahir Dar University teacher educators in practicing society-centered instruction was inadequate and unsatisfactory. The instructional methods and assessment strategies they used were not tailored to society and societal problems. Their relevance for the social amelioration and social reconstruction educational agendas were also found to be low.

Implications

The findings of this study have some important implications for the education system of Ethiopia. First of all, it implies the need to give topics of society-centered educational approach and Social Reconstructionism a substantial place in various professional development initiatives. As understood from this study, teacher educators' experience of using instructional methods and assessment strategies that focused on society was low. In this regard, it seems advisable to teacher education institutions to organize training or professional discourse forums centered on the topics at hand. In doing so, the relevance of the society-centered instruction and the Social Reconstructionist educational philosophy needs to be emphasized. Specific teaching and assessment methods relevant for the implementation of society-centered education also need to be at the heart of these professional forums. Second, as understood from the present study, society and societal issues were not given a substantial place in the education policy of Ethiopia. Hence, it is important to revitalize the country's national educational philosophy. In doing so, the relevance of the Social Reconstructionist educational philosophy, and most importantly, the role it plays in social amelioration and social reconstruction needs to be deliberated.

Limitations of the Study

This study tried to investigate the lived experiences of only six teacher educators selected from one college at Bahir Dar University. The study also did not employ the classroom observation method that could bring more valuable data concerning the experience of teacher educators in practicing society-centered instruction.

The study would have been more successful in portraying the full picture of the society-centered instructional practice at the College of Education and Behavioral Sciences, Bahir Dar

University, provided that the above limitations could have been dealt with. The conclusions of this study, therefore, need to be used cautiously.

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An Investigation into Factors Affecting Intervention Fidelity of Differentiated Instruction in Primary Schools of Bahir Dar City Administration

Tadesse Melesse Merawi (PhD)[5]

Associate Prof., Dept. of Teacher Education and Curriculum Studies, Bahir Dar University

Abstract

The main purpose of this study was to investigate factors affecting the intervention fidelity of Differentiated Instruction (DI) in primary schools of Bahir Dar City Administration, Ethiopia. For this study, mixed methods approach with convergent parallel design was utilized and data were collected from 10 randomly selected full-cycle primary schools of Bahir Dar City Administration. Among the 10 general primary schools, fifty teachers (five from each school and one from every department) and 10 school principals were selected through simple random and comprehensive sampling techniques, respectively. Similarly, 10 students from grade eight, who could properly articulate and provide valuable information (e.g., student representatives and class monitors) were selected using purposive sampling technique. Data on factors affecting the execution of DI were collected through questionnaire, interview, focus group discussion, and observation. Data were analyzed using percentage, descriptions, and narrations. The main findings revealed that the majority of primary school teachers in Bahir Dar City Administration were not in a position to execute DI components due to a number of encumbering factors. The knowledge and training gaps of teachers on how to implement DI, scarce school resources and lack of conducive school environment, low motivation and commitment of teachers, inflexible curriculum structure, work overload, lack of committed and devoted school leadership, poor background knowledge of students, lack of parental support for the students' learning, weak staff collaboration or experience sharing, and large number of students' diversity in the classroom were among the investigated factors. In order to tackle those identified hampering factors for the execution of DI, contextualized, need-based and continuous on-the-job trainings should be provided for primary school teachers and school principals.

Key words: Content differentiation, differentiated instruction, process differentiation, product differentiation

[5] Corresponding author, email: tmelesse3@gmail.com

Introduction

Background of the Study

Nowadays, teacher education has faced an increase in student diversity (Roy et al., 2013). Every time, diverse students in their backgrounds and abilities (e.g., Tomlinson & McTighe, 2006) and in their pace of learning, culture, gender, readiness, interest and learning profiles (e.g., Dee, 2010; Kanevsky, 2011; Landrum & McDuffie, 2010; Santangelo & Tomlinson, 2012) are joining schools. However, in many schools of the world, a large number of students who have diversified interests, readiness and learning profiles are learning together the same lesson in one classroom by the same method through a 'one-size-fits-all' approach (Koeze, 2007; Santangelo & Tomlinson, 2012).

Conversely, the diverse student characteristics have made it necessary for teachers and schools to use appropriate and fitting teaching approaches (Bender, 2012; Heacox, 2012). To address student diversity, several educational institutions have tried to design a more responsive pedagogy also called differentiated instruction [DI] (Dee, 2010; Guay et al., 2017; Tadesse, 2018, 2020). For instance, in different countries, (e.g., Belgium, Canada, Holland; Hong Kong, Romania, Taiwan, Switzerland, USA), available research evidence underpins that DI has been developed in response to the tendency to integrate students of various abilities in the same classroom (Burris, 2011; Nicolae, 2014; Roy et al., 2013; Ruys et al., 2013; Smit & Humpert, 2012; Tobin & Tippett, 2013; Tomlinson & Imbeau, 2010; Wan, 2017). Across the world also, there exists a plethora of research carried out on DI (e.g., Bender, 2012; Dee, 2010; Dixon et al., 2014; Guay, et al., 2017; Heacox, 2012; Kanevsky, 2011; Landrum & McDuffie, 2010; Reis et al., 2011; Santangelo & Tomlinson, 2012).

Conceptually, DI is a philosophy for effective teaching through organizing and structuring curriculum and teaching strategies in response to students' diverse interests, readiness, and learning profiles in terms of content, process, product, and environment (Tomlinson, 1999, 2014). Tomlinson and Imbeau (2010) stated that in order to address the readiness, interest, and learning profile of students, the core of the classroom practice of differentiation is the modification of four curriculum related elements – *content* ***(what teachers teach and students learn),*** **process** ***(how teachers teach and students learn),*** **product** ***(how students demonstrate the way they have learnt) and*** **learning environment** ***(***the way the classroom feels and functions safe and stimulating). Similarly, ot***her scholars (e.g.,*** Bender, 2012; Roy et al., 2013; Santanglo & Tomlinson, 2012; Tobin & Tippett, 2013; Tomlinson, 2014) also supplemented that teacher who utilize DI take into consideration addressing students' readiness, interest, and learning profiles.

The theoretical framework of DI is guided by the following four principles and beliefs: (a) a focus on essential ideas and skills in each content area, (b) responsiveness to individual student differences, (c) integration of assessment and instruction, and (d) ongoing adjustment of content, process, and products to meet the individuals' levels of prior knowledge, critical thinking and expression styles (Rock et al., 2008, p.33).

There are also various reasons why DI is recommended by different scholars. For Burris (2011) and Whipple (2012), DI recognizes individual differences and allows students from all backgrounds with diverse abilities to demonstrate what they know, understand, and are capable of doing. Similarly, DI avoids teaching by responding to the full range of learner needs (Subban, 2006) and helps to tackle learner differences and offers the possibility to create different expectation levels about task completion (Tobin & McInnes (2008). As also diverse studies (***e.g.,*** Koeze, 2007; Tomlinson et al., 2008; Tomlinson & Imbeau, 2010) ***disclosed, DI*** reflects promising benefits for both teachers and students not only to cope with the diversity of students but also to improve the students' achievement. Consequently, calls have been issued for teacher education programs to improve the execution of DI by practitioners to respond to academic diversity of students (Guay et al., 2017).

Despite the potential benefits of the strategies of DI in improving students' learning, embracing change and adopting such an innovation was challenging for many teachers (Moosa & Shareefa, 2019). Other scholars (e.g., Nicolae, 2014; Santangelo & Tomlinson, 2012; Tobin & Tippett, 2013) also revealed that implementing DI can be very daunting for teachers. Its implementation in different countries, including Ethiopia, is infrequent, inconsistent, and incorrect due to various reasons (Goddard et al., 2010; Morrison-Thomas, 2016; Smit & Humpert, 2012; Tadesse, 2020; Watts-Taffe et al., 2012; Whitley et al., 2019). Accordingly, there is a need to find out what factors may affect teachers' execution of DI strategies in the Ethiopian schools.

Statement of the Problem

The complexity of the concept and the difficulties in adopting DI strategies result in less use of them (Tomlinson, 2004). Many scholars (e.g., Deunk et al., 2015; Nicolae, 2014; Smit & Humpert, 2012; Tobin & Tippett, 2013) argued that providing DI is considered a vital but multifaceted teaching skill which many teachers have not mastered and feel unprepared for. As a result, adequate implementation of DI in primary schools was not self-evident where one-size-fits-all instruction remains common (Tomlinson, 2004).

Internationally, various scholars examined the details for the inept execution of DI and suggested reasons. DI's time taking nature to plan lessons, instruction and assessment (Goddard et al., 2010; Goodnough, 2010; Nicolae, 2014; Whitley et al., 2019), large class size and lack of human and physical resources (Chien, 2015; Goddard et al., 2010; Nicolae, 2014; Smit & Humpert, 2012; Whitley et al., 2019), lack of professional support (Tadesse, 2020), as well as lack of safe and stimulating learning environment for students and inflexible standardized schedules (Santangelo & Tomlinson, 2012) were some to mention. Teachers' lack of understanding and skill in using DI (Chien, 2015; Nicolae, 2014; Smit & Humpert, 2012; Whitley et al., 2019), teachers' perception problems towards DI (McTighe & Brown, 2005; Tadesse, 2018), and lack of experiences in DI (Roberts & Inman, 2013; Rodriguez, 2012) were also presented barriers for executing DI in different countries.

On the other hand, compared to other countries, the problem of addressing the diverse interests of students in Sub-Saharan Africa is huge (UNESCO, 2017). Similarly, in a diverse,

multi-cultural and multi-lingual Ethiopian society, education is entangled with complex problems of relevance, quality and equity (MoE, 2015, 2018, 2020; Tadesse, 2020; Tesfaye, 2014). In Ethiopia, the quality of education is the recurring problem (Tadesse, 2020; Tilaye et al., 2020). According to the reports of different researchers (e.g., Fekede & Fiorucci, 2012; Tilaye et al., 2020; Tesfaye, 2014; Tadesse, 2015, 2018, 2020) and policy documents (e.g., MoE, 2015, 2018, 2020), the quality of education was not enhanced, and students' achievement in different exams is not improved. This is directly or indirectly related to teachers' quality in addressing learners' diversity in their classroom teaching (Tadesse, 2018, 2020). Consistently, Tilaye et al., (2020) pinpoint that there is still a wider gap in accommodating learners' diversity, meritoriously practicing teachers' continuous professional development, delivering competency-based curriculum, participating teachers in the curriculum development and review process, and employing active learning methods and formative continuous assessment techniques. Other earlier researchers (e.g., Joshi &Verspoor, 2013; Tesfaye, 2014) also confirmed that there was little evidence of active student learning and inquiry processes in the Ethiopian classrooms.

Although there is a policy backup on the execution of DI in Ethiopia (MoE, 2018, 2020) to address learners' diversity (MoE, 2015; 2018, 2020) and teachers have positive perceptions towards DI (Tadesse, 2020), its actual execution is low (Tadesse, 2018, 2020). While many teachers are aware of the disadvantage of their traditional teaching style, they seem quite willing to continue with this style (Joshi & Verspoor, 2013; Tesfaye, 2014; Tadesse, 2018, 2020).

Across regions as well, Tadesse's (2018, 2020) research findings clearly depicted that the majority of primary school teachers in the Amhara Region of Ethiopia insufficiently adapted their instruction to student differences and many of them prefer to continue a 'one-size-fits-all' approach. The reports of the Amhara Regional Education Bureau [BoE, 2017] also disclosed that many primary school teachers (86.99%) were not widely utilizing appropriate learner-centered approaches in their classroom teaching so as to address learner diversity. As a result, the achievement of Amhara Region primary school students in the General Primary School Completion Exam (GPSCE) was much lower (86 pass rate) than the national (88 pass rate) (MoE, 2016, 2020). A survey study conducted by BoE (2016) by drawing 9,332 sixth grade students of the Amhara Region further revealed that 80.1% of grade six students scored less than 50% in every subject. These problems were partly attributed to the low quality of teachers (MoE, 2020; BoE, 2017; Tadesse, 2018, 2020; Tilaye et al., 2020) and their limited knowledge to address students' learning diversity through the use of DI (Tadesse, 2018, 2020). Earlier research findings of Tadesse (2015, 2018, & 2020) and the actual classroom practices in different primary schools of Bahir Dar City correspondingly revealed that many teachers were seen dominantly applying teacher-centered teaching approaches such as lecture and question and answers.

Moreover, as to the researcher's knowledge at this point, there are no comprehensive studies exploring factors affecting the implementation of DI in Ethiopia in general and in Amhara Region in particular. Given that DI is recommended or required in many countries world-wide, its implementation in Bahir Dar City primary schools is found low (Tadesse, 2015). Accordingly,

conducting research to explore the major impending factors for the execution of DI is a timely concern.

The main purpose of this study, therefore, was to investigate the major factors that deter Bahir Dar City Administration primary school teachers' and principals' execution of DI. Accordingly, the current study can add to this limited research through exploring the following leading questions: (1) what are the major deterring factors that affect the execution of DI by primary school teachers of Bahir Dar City Administration? and (2) what is the intensity of each factor in affecting the implementation of DI?

Significance of the Study

Today's classrooms are becoming a versatile 'zoo' of students' abilities, orientations, responses, behaviors, and potentials. In order to create a kind of educational space which is beneficial for all students with different needs, the teaching methods are to be changed to fit with all the students, and major hampering factors need to be investigated. This study, therefore, is believed to make a number of contributions to different actors. Firstly, it can provide information for teachers about the major factors that are affecting the implementation of DI and ways of intervention strategies for the better employment of DI. Secondly, the results of this study could also help school principals, *woreda* and zonal education experts to make decisions that will tailor professional development opportunities to address the needs that teachers experience in practicing DI and to tackle the major impending factors on the implementation of DI. Thirdly, this study could also help Teacher Education Institutions [TEIs] and Universities, who are trainers of the primary and secondary school teachers, in providing the necessary information about the major factors primary school teachers encountered in implementing DI and intervention strategies to tackle the challenges. Finally, this study may again serve as a spring board for those interested scholars in conducting further research on DI and its effect on students' academic achievement.

Method

For this study, a mixed methods approach with convergent parallel design was employed since this design provides the researcher with the opportunity to have good understanding about the problem and the issue under study (Creswell, 2014). Mixed methods involve integrating both qualitative and quantitative data and analyze for a more multidimensional approach to inquiry (Creswell, 2014; Miles et al., 2014). So, the quantitative aspect of this study (using a questionnaire) was used to investigate factors affecting the implementation of DI. Respondents were also asked to put the major factors in a rank order. Similarly, in order to obtain deeper explanations for why a phenomenon occurs, qualitative approach was employed. The qualitative approach (using interviews, FGDs, and classroom observations) was used to get data that capture the different dimensions of teachers, school principals and students' experiences, personal perspectives, and their challenges in implementing DI from the inside (Miles et al., 2014; Saldana, 2011).

Participants

The target populations of the study were Bahir Dar City Administration primary schools in Amhara Region, Ethiopia. There are about 39 government primary schools in the city administration. Among these, 10 full cycle government primary schools were selected through simple random sampling. In these full cycle primary schools, there are five departments (Social Science, Natural Science, Mathematics, Language, and Aesthetics and Physical Education). From the 10 full cycle general primary schools, 50 teachers (five from every school and one from every department) and 10 school principals (school directors) were selected through systematic random sampling and comprehensive sampling techniques, respectively. Table1 demonstrates the selected schools and sample teachers based on their sex, qualification, departments and teaching experiences. Similarly, from each school, one student representative who properly articulates and provides valuable information (e.g., student representative or a class monitor) was selected using purposive sampling technique.

Table 1

Characteristics of Teacher Participants

N	Participants		Responses		N	Participants		Responses	
			n	%				n	%
1	*Schools*	Sertse Dingel	5	10	3	Qualification	Diploma	21	42
		Shimbit	5	10			Degree	29	48
		Shumabo	5	10	4	Departments	Natural Science	10	20
		Gedro	5	10			Social Science	10	20
		Zenzelma	5	10			Mathematics	10	20
		Addis Amba	5	10			Language	10	20
		Qulkual Meda	5	10			HPE	10	20
		Dona Berber	5	10	5	Teaching Experience	0-5 years	4	8
		Dilchibo	5	10			6-10 years	11	22
		Sebatamit	5	10			11-15 years	12	24
2	Gender	Male	27	54			16-20 years	12	24
		Female	23	46			>20 years	10	20

Instruments

For this study, multiple data collection methods (questionnaire, interviews, FGDs, and classroom observations) were utilized.

Questionnaire

In order to investigate the major factors affecting the implementation of DI, questionnaire (both close ended and open ended) was used as the major instrument. In the questionnaire, about 17 listed factors that were adapted from Adlam's (2007) and Rodriguez's (2012) standardized questionnaires of DI in the elementary schools were included. First of all, in order to realize whether the given factors were the real challenges for primary school teachers to implement DI, teachers were asked to rate them by saying "Yes" or "No" for each of the factors mentioned. They were also asked to rank the given factors in order of hierarchy (from first to last) as per their influencing powers they feel. Moreover, in the open ended part of the questionnaire, these teachers were asked to mention other factors they believed to be major challenges affecting their execution of DI.

Interviews

For this study, individual based face-to-face semi-structured interviews were employed to probe if further explanation is needed (Bryman, 2012). A total of five interview questions that focus on factors affecting the execution of DI were designed to generate details about impending factors affecting teachers' practice of DI and its components. Thus, a total of 10 teachers (one from every sample school and two from each department) were selected through available sampling. Moreover, 10 students and 10 school principals (one student and one principal from each school) were selected through purposive sampling and interviewed and their voices were tape-recorded based on their consent.

Focus Group Discussion (FGD)

In order to obtain shared understandings from several individuals (Bryman, 2012; Creswell, 2014) and to triangulate the collected data through interviews on individual bases on factors affecting the implementation of DI, FGD was also employed. FGD is conducted to cross-check the consistency of the responses given individually through interviews. Therefore, from three randomly selected full cycle primary schools, a group of teachers involving 4 to 5 members with different qualifications, teaching experiences and departments were taken as key informants. Besides, student representatives (class monitors, student committee members, and group leaders from upper primary levels) were purposely selected for the discussions. FGDs with these participants helped to further investigate the commonly understood and shared major hampering factors affecting the execution of DI in their classrooms and schools and also to confirm the results obtained via interviews.

Observations

Classroom observations were made using observation checklists on how teachers differentiate the lessons learnt (content), the methods of teaching (process), the assessment (product) and aspects of the classroom environment. Moreover, school environment observations were conducted to check whether or not the school and classroom environments were conducive for the execution of DI. For this purpose, the structured observation checklist of Subban and Round (2015) was used to collect data from observations of classrooms and school environment. After observations, follow-up interviews were made from the ongoing analyses as ideas and events were clarified and explained by participants at the end of each classroom observation period. In order to check the internal consistency of observations and to minimize bias (Bryman, 2012), inter-observer reliability was made by two individuals (the researcher and other assistant observer, who is an assistant professor from the teacher education and curriculum studies department) and finally the average rated result was obtained. About eight classroom teaching observations from different departments and grade levels (one period for each) were made by two different observers in order to yield the same findings in a more credible manner than those gathered according to personal patterns (Denzin, 1989).

Data Analysis

For this study, simple statistical technique (percentage and rank ordering) and qualitative data analysis techniques were employed. To analyze the questionnaire data, percentage and rank ordering were employed. But, the data generated through interview, open-ended questions and observation were analyzed qualitatively through thematic descriptions and narrations. The interview data analysis procedure followed transcribing, coding and developing themes since a thematic approach is one of the analysis techniques of qualitative research (Creswell, 2014).

Results and Discussion

Many studies done over the past decades showed that teachers face difficulties in addressing students' individual differences through applying DI. Other scholars also mentioned challenges for effective practice of DI. As DI requires new ways of thinking about curriculum and instruction, implementing it can be a daunting issue for teachers. For instance, in the previous studies of Tadesse (2015, 2018, 2020), many primary school teachers of Bahir Dar City Administration and Awi administrative zone did not properly implement DI and its components. In those studies, Tadesse concluded that most primary school teachers in these areas were teaching diverse students using a "one-size-fits-all" approach. Hence, the reasons why primary school teachers did not differentiate instruction were investigated. This study, therefore, focuses on examining the major hampering factors affecting the execution of DI by primary school teachers of Bahir Dar City Administration.

In order to investigate the major factors affecting the execution of DI, 17 factors were presented in the close ended questionnaire, and teachers were asked to rank those factors in order of influencing powers. Thus, Table 2 below presents major challenges for effective implementation of DI in the primary schools of Bahir Dar City.

Table 2
Major factors affecting the execution of DI

N	Responses	Teachers' responses (N = 50)				Ranks
		YES		NO		
		N	%	N	%	
1	Lack of resources/ instructional materials	45	90%	5	10%	4th
2	Traditional thoughts of one size-fits-all approach	43	86%	7	14%	6th
3	Large number of student diversity in the classroom	42	84%	8	16%	8th
4	The presence of rigid/inflexible curriculum	44	88%	6	12%	5th
5	DI demands excessive planning and teaching	38	76%	12	24%	13th
6	Lack of parental support	30	60%	20	40%	16th
7	Lack of good school leadership	41	82%	9	18%	10th
8	Teacher workload	42	84%	8	16%	8th
9	Lack of incentives for effective teachers	40	80%	10	20%	12th
10	Poor background knowledge of students	32	64%	8	36%	14th
11	Lack of collaboration with other teaching staff	28	56%	22	44%	17th
12	Lack of knowledge and experience of DI	48	96%	2	4%	1st
13	Lack of teachers' motivation and commitment	43	86%	7	14%	6th
14	Lack of conducive school environment	46	92%	4	8%	3rd
15	Lack of training on DI	47	94%	3	6%	2nd
16	Time shortage for teachers	41	82%	9	8%	10th
17	Teachers regular engagement on routine tasks	31	62%	19	38%	15th

As indicated in Table 2 primary school teachers were asked to list the major encumbering factors that were affecting their practice of DI. Accordingly, 48 (96%) of the respondents identified that lack of knowledge and experience of DI was the first factor affecting the practice of DI. Likewise, the interview results of teacher, school principal and student respondents also divulged that teacher have wider knowledge gaps to address students' diversity by applying DI in classrooms. For instance, the following is a quotation extracted from the interview transcript of one of the primary school teachers' interviewed,

> …Even though I understand that there are fast, medium and slow learners in my classrooms, I have the knowledge gap on how to address their interests. I was not familiar with the concept of DI and how to differentiate content, method and assessment in my classroom teaching. As the curriculum is not flexible, even the exam type I am using for these diverse students is the same. There are many factors for this. Inflexible curriculum and our limited knowledge to apply DI are key factors.

Similar to the teacher interviewee, the interviews made with the two school principals and three students also clarified that many teachers' lack knowledge and skills to differentiate instruction. The two school principals added that many teachers were not properly identifying the learning gaps of the students and as a result they dominantly employed a lecture method of teaching and a 'paper and pencil' test. Student respondents also shared the responses of school principals. For instance, one student respondent replied that "many teachers have limitations in subject matter knowledge, English language communication as a medium of instruction and pedagogy". Besides, the classroom observations made also confirmed that teachers have limitations to vary the methods of teaching and assessment practices depending on learners' differences. Hence, as the interviewee teacher, student and the school principals replied that the subject matter and pedagogy knowledge and skill gap of teachers is the major deterring factor to address the learners' learning diversity. Consistent to this finding, many authors (e.g., Chien, 2015; Goodnough, 2010; Knowles, 2009; Nicolae, 2014; Roberts & Inman, 2013; Rodriguez, 2012; Roy et al., 2013; Santangelo & Tomlinson, 2012; Tobin &Tippett, 2013) examined that lack of hands-on experiences and knowledge with differentiation of teachers is one of the major barriers to practice DI. These authors investigated that due to lack of knowledge and skills in adapting the curriculum material for learners' different learning styles and academic performances, general education teachers faced challenges to implement DI. Instead, teaching to the "norm" has been a common practice in many schools (Tomlinson, 2004). Nicolae (2014) also identified lack of teachers' knowledge and skills and lack of resources as the greatest challenges facing Romania's schools today that are mostly dominated by a traditional "sit and listen" approach. Studies in Hong Kong by Wan (2015) also indicated that primary school teachers make relatively few adaptations to accommodate differences among their students due to teachers' lack of confidence and preparedness for differentiated teaching practice. Likewise, lack of knowledge and experience (Rodriguez, 2012) and lack of classroom management skills (Corley, 2005) were major deterring factors affecting the application of DI.

Another factor related to the poor execution of DI was attributed to lack of capacity development training for teachers both in the pre-service and in-service training modalities. In this regard, 47 (94%) of teacher respondents replied that lack of sufficient pre-service or in-service trainings on DI was the second deterring factor for the execution of DI. The interview results of the school principals as well as the focus group discussion results of teachers depicted that primary school teachers have wider gaps in getting need-based in-service or on-the-job trainings after they graduated from the pre-service programs. According to the respondents, this fact strongly affects the quality of teachers' effectiveness in teaching. Congruent with this finding, authors (e.g., Goddard et al., 2010; Siam & Al-Natour, 2016) investigated that the lack of specialized training programs/ professional development to support teachers' practice of DI in schools was a major deterring factor affecting the application of DI. This finding is also consistent with the verdicts of some authorities in the area (e.g., Dee, 2010; Good, 2006; Santangelo & Tomlinson, 2012; Smit & Humpert, 2012; Watts-Taffe et al., 2012). Many of these authors showed that if teachers have not been trained in DI, they lack relevant strategies and knowledge to differentiate and meet the

needs of all students, and often continue to use the same practices, rather than incorporating different strategies for DI.

Other authors (e.g., Gettinger & Stoiber, 2012; Goodnough, 2010; Smit & Humpert, 2012; Solomon, 2008; Tesfaye, 2014; Tadesse, 2018, 2020; Wan, 2015) also linked the problems of DI with the trainings of teacher education systems. They confirmed that teacher education institutions play the greatest role to address learners' diversity by effectively employing DI. Previous findings of many scholars (e.g., Dee, 2010; Gettinger & Stoiber, 2012; Koeze, 2007; Goodnough, 2010; Smit & Humpert, 2012; Solomon, 2008; Wan, 2015) also concluded that teacher preparation has an impact on teacher attitudes and confidence in working in inclusive settings. For instance, Smit and Humpert (2012) argued that an opportunity for training is a facilitator for effective DI. Moreover, Koeze (2007) also delved that those teachers who participated in the DI training reported frequent differentiation in the areas of readiness, interest, flexible grouping, choice, and learning styles. However, Dee (2011) as well as Smit and Humpert (2012) conversely stated that many education programs lack in preparing teachers for teaching in diverse classrooms, and the use of varied assessments for effective differentiation seems weak.

Although appropriate education entails that the general education classroom teachers possess the skills of adapting instruction and making modifications to content, process and product for students (Dee, 2010), this is not practically seen in teacher education institutions (Smit & Humpert, 2012; Tesfaye, 2014). Dee (2011) further complemented that teachers are ill-prepared and lack the support in delivering effective instruction in the daily classroom teaching. Similarly, in Ethiopia, as Tesfaye (2014) stated, many teachers are engaged to be teachers without the necessary qualifications and training pertinent to the profession. As a result, many teachers are seen suffering from subject matter and pedagogical knowledge deficits (Tadesse, 2015; Tesfaye, 2014), leave alone addressing divers interests of learners (Tadesse, 2018, 2020).

As also shown in Table 2, 46 (92%) and 45 (90%) respondents respectively rated that lack of conducive environment and lack of resources/ instructional materials to implement DI were the third and fourth ranked factors affecting teachers' practices of DI. In congruent with this, the interview results of school principals and FGD reports of teachers elucidated that the lack of conducive school environment (lack of appropriate and standardized classrooms with full of facilities, shortage of resources, laboratory equipment, sport fields, sufficient playing grounds, under shade reading corners, etc.) and lack of strong support from the school principals in helping teachers to effectively practice DI, are among the factors that affect the practice of DI. Interviews from teachers also complemented that institutional factors (lack of resources and facilities such as textbooks, tables and chairs, reference books, laboratory equipment, chemicals, lack of leadership support, and large number of students), and environmental factors (lack of conducive school environment, unclean classrooms, lack of pure water, lack of play grounds and facilities, etc.) were the major factors that affect the practices of the instructional strategies of DI. Classroom observations also confirmed the presence of the challenges mentioned.

Moreover, FGDs made with teachers disclosed that in order to properly implement DI fertile grounds are not set. The learning environment that consists of the routines, procedures, and

physical arrangement of the classroom as well as the overall mood that exists among and between the students and a teacher are not safe, stimulating and comfortable for students. In most cases, there are no comfortable chairs and tables (many chairs are fixed). Many classrooms are dusty and also instructional materials are not sufficiently available. In this regard, the study of MoE (2018) and BoE (2017) indicated that about 90% of the primary schools in Ethiopia are below the standards. The situation in the Amhara Region is becoming worse (BoE, 2017). For instance, 99% of the schools are below the standards in Waghimra administrative zone, and Bahir Dar city administration also accounts 92% (REB, 2017). Consistent with this, the findings of Santangelo and Tomlinson (2012) elucidated that the lack of stimulating learning environment for students is one factor affecting the execution of DI.

Also for other researchers, one of the unfavorable conditions for the practice of DI in reality was shortage of resources/accessible materials. Even though it is believed that the availability of material resource is an enabler for effective DI (Smit & Humpert, 2012), the lack of resources in schools still results in low differentiation of instruction for teachers (Al-Natour, 2016; Goddard et al., 2010; Good, 2006; Nicolae, 2014; Roberts & Inman, 2013; Rodriguez, 2012; Santangelo & Tomlinson, 2012; Smit & Humpert, 2012; Watts-Taffe et al., 2012). These authors noted that lack of sufficient resources or instructional materials is a major impending factor for the execution of DI in classroom teaching.

Moreover, as illustrated in Table 2, the presence of rigid/inflexible curriculum (88%), lack of teachers' motivation and commitment (86%), traditional thoughts of 'one-size-fits-all' approach (86%), large number of student diversity in the classroom (84%), teachers' workload as a result of engagement on different classes with different subjects (84%), time shortage for teachers (82%), lack of good school leadership (82%), and time consuming nature of DI for successive planning and teaching (76%), were the other successively ranked factors affecting the practice of DI. The FGD and interview results of teachers and school principals also disclosed that the inflexible and fixed curriculum structure throughout the year created teachers an obstacle for their practice of DI according to students' interests. One of the teacher respondents depicted the following,

> As our curriculum delivery is fixed, to make it flexible in terms of time and activity and make adaptable into local contexts, the support and encouragement from the school principals and *woreda* education officers is negligible. Even they do not have the room to do. As a result, [we] teachers are always enforced to teach the curriculum based on the regionally or nationally established fixed plans, and the assessment strategies we are using are all the same for diverse students which also results in low differentiation. As a result, our commitment and motivation to teach effectively is affected.

But, as many international experiences reveal, school principals are imperative in the process of implementing DI and in creating conducive learning environment in schools. According to the respondents, school principals have to provide teachers with sufficient support and praise in the overall implementation process of DI. For this, good instructional leadership is crucial. Nevertheless, classroom observations made at different schools affirmed that teachers are tied by the strict procedures of lesson plan and annual plan alignment. The main roles of the school

principals are only monitoring and controlling whether teachers are strictly accomplishing their teaching as per their plans. Besides, as it is observed in different classes, there are more than 60 and 70 students in one classroom. This huge diversity affects teachers' effective practice of DI and how they plan their lessons accordingly. Consequently, teachers were seen overloaded in such diverse classrooms with their shortage of time to cover subjects and prepare wider lesson plans. As the FGD reports from teachers affirmed,

> …many school principals were not well qualified and committed to lead their staff. Due to this, many teachers do not have trust and respect for the school principals as they are not qualified and not assigned on merit bases. They were also not in a position to deliver professional capacity building trainings periodically to teachers. Consequently, most teachers are still following the traditional lecture method founded on the belief of 'one size-fits-all' approach.

In tune with this finding, Santangelo and Tomlinson (2012) disclosed that the inflexible standardized schedules and use of class time, a strong focus on covering the prescribed curriculum, and inflexible routines and management strategies which demand administrative decisions result in low differentiation for teachers. This finding is also similar to many other scholars who found that shortage of time to implement given learning goals in the curricula (Nicolae, 2014; Siam & Al-Natour, 2016; Smit & Humpert, 2012; Rodriguez, 2012), shortage of time for lesson preparation (Good, 2006; Roberts & Inman, 2013; Rodriguez, 2012; Watts-Taffe et al., 2012), large class size, lack of preparation time, and teachers' heavy workload (Nicolae, 2014), lack of classroom management skills, weak administrative support, and lack of better partnership between the school principal and teachers with mutual trust and respect (Goddard et al., 2010; Smit & Humpert, 2012), lack of commitment and motivation of teachers (Tomlinson, 2010); lack of teachers' confidence to differentiate instruction (Dee, 2010; Gettinger & Stoiber, 2012; Goodnough, 2010), teachers' failure to recognize the necessity for DI and the belief that there is no need to differentiate (George, 2005; Santangelo &Tomlinson, 2012) are also main challenges faced by teachers in practicing DI in today's schools. Weber and associates (2013, in Lang, 2017) also investigated reasons why teachers did not differentiate as lack of professional development to support practice, lack of administrative support, time constraints, concerns about equity grading practices, teachers' resistance to change, and requirements associated with standards-based instruction discourage practices and delusions continued by a lack of knowledge of strategies related to approaches of DI.

Similar studies and policy documents in Ethiopia also revealed that the quality of school administration and human resource management is a critical factor for effective teaching and teacher motivation (MoE, 2015, 2017; Solomon, 2008). Quality school management will produce large impacts for student learning performance through innovation, knowledge sharing and the identification and reproduction of best practice (MoE, 2015, 2017). However, as Erickson (2008) reported, traditional school structures, pressures of content coverage for standardized tests and limited budgets for staff development all serve as obstacles to true differentiation for students.

On the other hand, in order to enhance the confidence and preparedness of teachers for DI, teachers' professional development should be supported by school principals. According to the FGD results with teachers and school principals and student interview results, the presence of diverse students in terms of number, interest, readiness and learning profiles in one classroom is becoming a challenge for teachers to effectively implement DI. As class sizes and the diversity among students increase and resources diminish, many barriers to differentiation have surfaced. In this case, if teachers are not professionally equipped, they simply prefer to employ the traditional lecture method which they know. Consistent with the finding, as Goddard et al. (2010) as well as Dee (2011) purported, if teachers are ill-prepared and lack the support for their instruction and professional development schools, they will lose their confidence and ultimately fail to implement DI. Similar studies in Hong Kong by Wang (2015) also designated that primary school teachers make few adaptations to accommodate differences among their students due to teachers' lack of confidence and preparedness for differentiated teaching practice.

Finally, the finding in Table 4.1 also realized that the lack of incentives for effective teachers (80%), poor background knowledge of students (64%), teachers' engagement in routine tasks (62%), lack of parental support for students' learning (60%) and weak collaboration or experience sharing with other teaching staff (56%) were lastly recognized additional encumbering factors for the implementation of DI. Moreover, regarding teachers' motivation and students' background knowledge, the interview result of one teacher has the following excerpts:

> In our schools, effective teachers who are devoting much of their time to their students' learning are not seen praised and encouraged. As a result, they are becoming discouraged. Not only the lack of incentives affects teachers' motivation to teach, but also students' academic background matters. In most cases, if there are clever and students in classrooms, teachers will prepare ahead to satisfy the needs and requirements of these students. But, currently, the quality of students is declining and parental involvement in their students' learning is low due to various factors. As a result, many teachers pass their golden time in different routine tasks.

Consistent with the above responses, student and school principal interviewees as well as teacher FGD discussants have shared that schools do not have the motivation system for effective teachers. There is a weak collaboration between parents and teachers and this time, the academic achievement of many students is declining. Many teachers, instead of preparing and professionally updating themselves, are engaged in additional routines that help them obtain additional income. Their reports also disclosed that staff collaboration and experience sharing is not encouraging. For instance, the two school principals' responses on the existing status of staff collaboration expounded the following,

> There is a wider gap between novice and experienced teachers. Novice and experienced teachers' experience sharing (collaborative work) and mentoring and supervision in the classrooms are not effectively implemented. Many teachers are not open to supervise others or being supervised by others. Even though teachers with more experience are expected to adapt the educational activity by considering the needs of all students and support other novice teachers, this is not effectively realized in the ground.

Hence, the lack of incentives for effective teachers, poor background knowledge of students, teachers' engagement in routine tasks, lack of parental support for students' learning and weak collaboration or experience sharing with other teaching staff were identified factors affecting the practice of DI. Congruent with this finding, many previous researches (e.g., Goddard et al., 2010; ***McTighe & Brown, 2005;*** Smit & Humpert, 2012; Rodriguez, 2012; Santangelo & Tomlinson, 2012, Tadesse, 2018, 2020) also scrutinized similar factors affecting the practice of DI. For instance, the findings of many authors showed that weak administrative support to incentivize teachers, low parental support, and low motivation of teachers to differentiate instruction (Corley, 2005; Nicolae, 2014; Siam & Al-Natour, 2016) and lack of teacher incentives (Tadesse, 2018, 2020) were other challenges faced by teachers in implementing DI. Besides, the lack of awareness on the importance of instructional strategies of DI (Nicolae, 2014) and the limited budgets for staff development (Erickson, 2008) all serve as obstacles to true differentiation for students.

Limitations of the Study

This study focuses only on investigating factors affecting the implementation of DI. But, the fact that a large number of samples were not drawn from the population may affect the generalizability of the findings in this study.

Conclusions and Implications

The main purpose of this study was to examine the major deterring factors affecting the ***implementation of DI in classrooms of the sample primary schools***. Based on the findings, various encumbering factors were investigated and put in their order of influencing power. Accordingly, lack of knowledge and experience of DI, lack of continuous professional development/pre-service and in-service training on how to apply DI, and lack of teacher motivation and commitment to implement DI were the forefront factors affecting the execution of DI. Moreover, shortage of school resources/ instructional materials (textbooks, reference books, instructional aids, and school furniture), inflexible curriculum structure, the overload work of teachers (teaching different subjects in different grade levels), the traditional beliefs of 'one-size-fits-all approach' and lack of interest to implement DI and the time demanding nature of DI for excessive planning and teaching were other consecutively rated factors affecting the practice of DI. Additionally, lack of strong school leadership support, shortage of time, teachers' regular engagement on routine tasks, lack of incentives for effective teachers, low parental support for the students' learning, weak staff collaboration or experience sharing and large number of students' diversity in the classroom were additional encumbering factors for the implementation of DI. As a result, there is minimal or no differentiation in primary schools during their student teaching experience.

Finally, in order to address the diverse interests, readiness and learning profiles of students, thereby tackling the identified challenges so as to the following implications are set. To augment teachers' and school principals' knowledge and skills of DI, intensive capacity building professional development (training) should be designed for in-service teachers and school

principals. Curriculum flexibility and context-based practices need to be improved. Creating conducive school environment and fulfilling instructional resources as well as motivating teachers for their good performance should be a timely task for the concerned officials. Furthermore, reducing workloads of teachers, strengthening quality instructional leadership skills, and improving staff cooperation as well as strengthening working with parents and the surrounding community could improve teachers' execution of DI and ultimately increase the students' learning achievement.

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Recruitment, Development and Retention of Teacher Educators in Ethiopia: Implications for Education Quality

Aklilu Dalelo Wamisho[6]

Professor of Geography and Environmental Education, College of Education and Behavioral Studies, Addis Ababa University, Ethiopia

Abstract

In Ethiopia, not much is known about the characteristics and roles of teacher educators as a distinct professional group. The study, the result of which is partly reported here, was therefore aimed at shedding some light on this area by assessing the recruitment, development and retention of teacher educators (in selected colleges of teacher education). Document analysis, interview with deans of colleges of teacher education and a questionnaire were employed to gather information on views of teacher educators themselves. The information gathered through review of policy documents and interview with college deans was analyzed by sorting it out thematically. The key/first-order themes used for analysis and subsequent discussion were recruitment, development and retention of teacher educators whereas characteristics, roles and competences of teacher educators were used as second-order themes. The results indicate, among other things, that the profession of teacher educators received adequate policy attention in Ethiopia. Interviews conducted with college deans confirm that efforts have been made to recruit and develop teacher educators as per the policy provisions and requirements. There are, however, challenges that threaten to undermine efforts being made to retain capable teacher educators. These include lack of a clear career structure and commensurate salary adjustment, inadequate professional development scheme, and lack of housing facility. The paper ends by putting forward some recommendations.

Key words: Educator, Profession, Quality, Recruitment, Retention, Teacher

[6] Corresponding author, email: aklilu.dalelo@aau.edu.et; akliludw@gmail.com

Introduction

The meaning attached to quality of education has remained elusive partly because definitions of quality "vary depending on the aims and purposes of the educational provision or country and historical context" (McKimm, 2009, p.186). Consequently, controversies abound regarding parameters and techniques of measuring quality. If we see, for instance, education quality from the perspective of 'student learning', we could use their 'achievement' as a criterion to measure quality. This, in turn, requires a careful assessment of the contributions of the various factors that contribute to learners' achievement no matter how one understands achievement.

Current literature on quality of education clearly indicates that the role of good teachers is second to none with regard to improving learner achievement. It is also well established that multiple factors are involved in the making of good teachers. Building an effective teacher education system is one of such factors (European Commission, 2013; Monteiro, 2015). It is thus strongly suggested that as an education system cannot exceed the quality of its teachers, the quality of teachers cannot exceed the quality of the system either. It is quite likely that well-prepared and highly motivated teachers may be hindered by poor, degraded and undignified working conditions that worsen the difficulties of practicing the profession (Monteiro, 2015).

Teacher quality is also determined by the quality of teacher educators. No matter how teacher quality is perceived and operationalized, one cannot achieve it without a genuine and sustained support from teacher educators. As student learning is not perceivable without quality teachers, preparation and development of quality teachers is unthinkable without quality teacher educators. Hence, the recruitment and development of those who educate teachers is believed to be a prerequisite for raising the quality of teaching and improving learning outcomes (European Commission, 2013). Similarly, a study from India underscores that "the quality of education as well as the future of our nation [India] largely depends on the quality of teacher educators" (Barman et al., 2015, p.1376). Cochran-Smith (2003, p.25), on her part, strongly argues that "if we are to have teachers who are change agents, we must also have teacher educators who are prepared to be the same." Despite the existence of such strong voices on the role of teacher educators, education policy in most parts of the world seems to place teacher educators in the margins. The overall situation is well captured by the following statement: "… we have paid relatively little attention in the past to an important component of teacher education – the quality of teacher educators. We know little about the learning, practices, and preparation involved in teacher educators' education" (Knight, et al, 2014, p.268). This is, indeed, a serious problem that warrants a systematic explanation.

The Problem and Rationale

Despite the fact that teacher educators occupy a strategic position and make an indispensable contribution to the preparation of a 'good teacher', issues related to the profession of teacher educators started to appear in educational research and policy arena only recently. The profession of teacher educators largely remained a hidden issue for so long. There has been

"minimal attention to what teacher educators should know and be able to do" (Goodwin, et al., 2014, p. 285). In most countries of the world, teacher educators are not only marginalized but also taking part "in their own marginalization", intentionally or unintentionally (Liston et al., 2008, p.111). What is more, Fenstermacher (1997, p.viii) passionately argues that teacher educators remained a voiceless group in most education systems: "We hear the voices of university researchers, of law makers, and of policy analysts, speaking about what teacher educators do or fail to do, but we do not often hear the voices of teacher educators themselves".

Unlike teachers, teacher educators still struggle to establish their position within the educational system. Questions like 'who are teacher educators?', 'how are they recruited, prepared and developed?', 'what roles do they play?' etc. are still being debated. In Europe, for instance, government policy on the quality requirements for teacher educators, and their academic and professional development, is said to be totally non-existent or underdeveloped, at best, in most of the member states (European Commission, 2013). Similarly, a study from Republic of South Korea shows that many of the government-operated institutes, which organize about two-thirds of all teacher in-service education courses, lack well-qualified teacher educators (Ee-gyeong et al., 2009, p.20). It is thus intriguing that despite a great deal of rhetoric surrounding the role of teacher quality in student achievement, little attention has been given to one of the most important factors contributing to teacher quality, namely, teacher educators.

In Ethiopia, not much is known about the characteristics and roles of teacher educators as a distinct professional group. Previous research seems to have neglected this aspect of the educational system. The study, the result of which is partly reported in this paper, was therefore aimed at shedding some light on this area by assessing the characteristics, roles, and competences of teacher educators and discussing the implications of these to the education quality.

Specific Objectives and Research Questions

The following are the specific objectives of the (larger[7]) study:

1. To examine the characteristics and roles of teacher educators as a distinct professional group;
2. To assess the problems encountered by teacher educators as a professional body;
3. To examine the standards for and profile of teacher educators in Ethiopian colleges of teacher education;
4. To assess the perception of deans of colleges of teacher education in Ethiopia about the profile, roles and characteristics of teacher educators;
5. To assess the perception of teacher educators in Ethiopia about their roles as a distinct professional group; and

[7] This paper reports part of a larger study aimed at exploring the characteristics, roles and competences of teacher educators in Ethiopia.

6. To indicate ways in which the profession of teacher educators could be strengthened in Ethiopia.

The (larger) research was aimed at seeking answers to the following questions:

1. What are the characteristics and roles of teacher educators as a distinct professional group?
2. What are the key problems encountered by teacher educators as a distinct professional group?
3. What does the profile of teacher educators in Ethiopian colleges of teacher education look like?
4. How do deans of colleges of teacher education perceive the roles of teacher educators as a distinct professional group?
5. How do teacher educators in Ethiopia perceive their roles as a distinct professional group?
6. How can the profession of teacher educators be strengthened in Ethiopia so that it makes a meaningful contribution to enhancement of education quality?

Characteristics and Roles of a Teacher Educator: A Brief Review of the Literature

Recruitment of teacher educators depends on expected characteristics, roles and competencies. Hence a brief review of literature on these factors is in order. The question as to who constitute the group called 'teacher educators' also seems worth addressing as there are still tendencies to confuse teachers with teacher educators.

Characteristics of teacher educators

The definition of teacher educators and the call for recognizing them to be part of a distinct professional group implies that they have distinct characteristics and roles. For instance, Murray et al., (2009, p.41) consider teacher educators as "a unique – but often overlooked or devalued – professional group, with distinctive knowledge bases, pedagogical expertise, engagement in scholarship and/or research, and deep rooted social, moral and professional responsibilities to schooling". More recently, with the growing consciousness of teacher educators as professionals, teacher educators' expertise has become an important area of inquiry in developing standards, and ultimately, in assessing and improving teacher educators' performance, effectiveness and growth in the field (Celik, 2011).

Though there is a growing recognition that teacher educators' expertise is quite diverse and complex in nature, the popular assumption that a good teacher would automatically make a good teacher educator is still traceable in some corners. Loughran (1997, p.3) suggests that the value of the 'special knowledge of teaching about teaching', which distinguishes teacher educators from teachers is, either taken for granted or not recognized at all: "… this special knowledge of teaching

about teaching is tacit knowledge, knowledge easily overlooked by others, taken for granted by teacher educators themselves, and consequently neither sufficiently understood nor valued".

Competencies and roles required of teacher educators

International experience shows that the competencies expected of teacher educators are multi-layered (Dengerink, 2016), including what the writer calls first and second order competencies. The first order competencies refer to disciplinary content knowledge, pedagogical content knowledge, and knowledge about learning and teaching. These competencies are more or less the same for teachers and teacher educators. The second order competencies, on the other hand, are more specific to teacher educators: pedagogy of teacher education, teaching and learning in teacher education as a subsystem of higher education, developing scholarship and conducting research, supporting the continuous professional development of teachers and service to the further development of education in a global and diverse society. It should thus be noted that teacher educators are expected to be well versed with pedagogical content knowledge at two layers: as teachers (required of teachers) and teacher educators.

With regard to the roles of teacher educators, some scholars identified six distinct roles: 'teacher of teachers'; 'researcher'; 'coach'; 'curriculum developer'; 'gatekeeper'; and 'broker (Dengerink et al., 2015). Teacher educators, suggest Northfield and Gunstone, 1997, p.49), should maintain close connections with schools and the teaching profession; and be "advocates for the profession and supporters of teachers' attempts to understand and improve teaching and learning opportunities for their students". Teacher educators are also expected to be role models, not just dispensers of propositions and principles: "… for me, teaching student-teachers about teaching hinges on a need for teacher educators to 'practice what they preach'…. If student-teachers are to understand a particular teaching strategy, they need to experience it as learners and as teachers, not just hear about it" (Loughran, 1997, p.62). Knowing 'why' must be linked to knowing 'how' and prospective teachers "need to see this in their teacher educators' practice and to similarly experience it in their learning about teaching experiences".

Teacher educators are also required to embrace research as an important aspect of their profession. Research-informed practice is considered as a "life-long learning journey that must be embraced by all teacher educators regardless of whether they are ECTEs [Early Career Teacher Educators], Mid-career Teacher Educators or Senior Mentors" (Fehring & Rodrigues, 2014, p.127). It is important to note that the relative weight given to the diverse roles of teacher educators, in general, and the intensity and rigor at which research is conducted, in particular, may differ depending on country/university background (Murray et al., 2009). In England, for instance, teacher educators, in most old universities, are usually required to be research active and publishing their work in accepted academic formats, in addition to their teaching and service roles (Murray et al., 2009, P.35). In other universities, on the other hand, "there may be less pressure to be research active in the conventional sense, and teacher educators may focus their identities around their teaching and the scholarship which that involves". In the Netherlands, teacher educators are not required "to undertake research and publication, as these activities are

traditionally defined as academic work" (Murray et al., 2009, p.39-40). Instead, they focus on preparing students for their future profession, devoting considerable time and energy on development of the teaching skills of prospective teachers.

The two cases discussed above (namely, England and the Netherlands) exemplify educational systems where there are clear policies on roles of teacher educators. It is also important to highlight the fact that there are many countries where there are no such policies. A study on the status and roles of teacher educators in two of east European countries, namely, Hungary and Poland, reveals, for instance, that neither country has an official definition of teacher educators' professional role (Symeonidis & Gajewska-Dyszkiewicz, 2017, p. 163-64). It was, nevertheless, found that the extent to which teacher educators were being considered and addressed as separate, distinct actors in the educational system differed substantially between the two countries. Contrary to Poland, where no attempts at forming an overarching representation of the teacher educators' milieu could be identified, in Hungary there seems to be a grounded self-understanding of teacher educators, evident not only in an established professional association but also in efforts to define teacher educators' competence profiles (Symeonidis & Gajewska-Dyszkiewicz, 2017).

Given the variations in the conception of the profession of teacher educators across the globe, it is quite interesting to see the characteristics, roles and competences of teacher educators in Ethiopia and how they are recruited into the profession. This was what motivated the study the result of which is partly reported here.

A Conceptual Framework

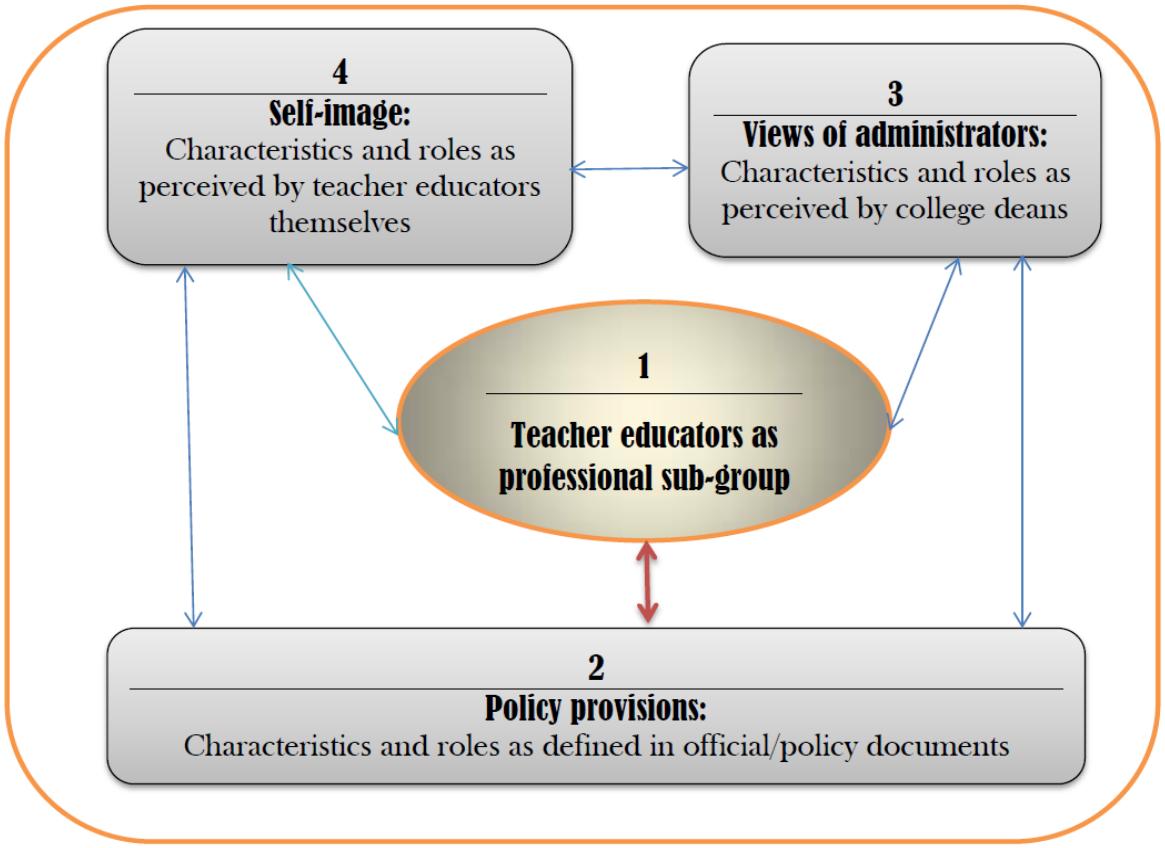
Despite the controversies and confusion surrounding the definition and characteristics of the profession of teacher educators in some corners of the world, this study begins with a bold recognition that teacher educators form a distinct professional group within the teaching profession. The paper agrees with the claim that "teacher educators have much to contribute to the development of a systematic approach to teacher quality" and could "respond at both a conceptual/empirical and pedagogical/programmatic level in ways that build broader political support" (Liston et al., 2008, p.114). The paper also shares the grim warning by these writers that "if teacher educators do not contribute, they will move from their current marginalized status to one of irrelevance".

The way in and degree to which this professional group contributes to the advancement of the goal of education, in general, and improvement of student achievement, in particular, depend on a number of factors that interact in a complex manner (Fig. 1). The first factor is a policy provision. A policy provision relates to many things but the most important ones are whether the policy gives explicit recognition to this professional subgroup; and the degree of support it provides. The second factor is the view of educational administrators about teacher educators as a professional subgroup (their view is assumed to have a potential to help or hinder the efforts of teacher educators to advance their profession). The third factor relates to the self-image of teacher educators themselves as a professional subgroup. Irrespective of the place policy makers and educational administrators give to the profession of teacher educators, the value teacher educators

themselves attach to their professional service determines the effectiveness of their service and their place in the teaching profession. Hence a strong call for teacher educators: "We [teacher educators] must make a compelling case that what we do has value" (Bullough, 1997, p.29-30).

Figure 1

A conceptual Framework



The conceptual framework (Fig.1) also indicates how the three factors (two, three and four) interact with each other and relate to teacher educators as professional subgroup (factor one). In all cases, the relationship is two-way, one affecting the other both positively and negatively. We can thus read the following relationships, among others, from the conceptual framework:

(a) Teacher educators as a professional subgroup could benefit greatly where there is an explicit policy provision and go unnoticed where there is none.
    - Conversely, teacher educators could apply pressure to force the system to recognize the subgroup and give it due space during policy revisions.

(b) Where there is a clear policy provision, college administrators could be empowered to support teacher educators; and be accountable when they fail to do so. In the absence of such a policy provision, the role administrators play would depend on their goodwill.

- Conversely, in colleges where administrators value the unique role of teacher educators as a professional subgroup, they could work towards national policy that supports teacher educators.

(c) Teacher educators' self-image and morale would be much higher where there is a strong policy backing. The reverse is lack of motivation and tendency to deny ones identity as a teacher educator.

(d) With or without a policy provision, teacher educators and college administrators could enter into a relationship that could either advance or retard the development of the sub-profession.

- When they have strong and positive relation, they could work together to advance the sub-profession and even advocate for a new policy towards this end.
- In situations where there is bad relation, administrators may undermine teacher educators and the latter keep on complaining or even change their profession.

The study, the result of which is partly reported here, was aimed at understanding the status of teacher educators as a professional group in Ethiopia and how the above factors operate and relate to each other. The part reported here deals mainly with policies and practices related to recruitment, development and retention of teacher educators. As indicated earlier, the larger study used diverse methods of data gathering and analysis to achieve the stated objectives.

Method

This study is an exploratory survey aimed at understanding the status of teacher educators in Ethiopia. It is noted that exploratory research is "typically conducted in the interest of 'getting to know' or increasing our understanding of a new or little researched setting, group, or phenomenon…" (Ruane, 2005, p.12). Likewise, Lodico et al., (2006, p.285) point out, an exploratory design is used where not much is "known at the start about a topic or program to create an accurate quantitative survey". This was exactly the case when it comes to the profession of teacher educators in Ethiopia. The writer could not trace studies systematically conducted and published on this topic.

Information (for the larger study) was gathered from different angles (policy, administration and instruction). Four methods (intended to complement each other) were employed to gather relevant information. The first was assessing key documents and reports like professional standards for teachers and teacher educators across the globe, country specific reports on the characteristics and roles of teacher educators, and empirical research published in international journals pertaining to characteristics and roles of teacher educators. In the case of Ethiopia, the Teacher Education System Overhaul (TESO) Handbook, the education and training policy, education sector development programs, teachers' and educational leaders' preparation and development blueprint; and the Ethiopian Education Roadmap (2018-30) were analyzed.

Second, legislations (e.g. the Teacher Education Colleges Legislation prepared by SNNPRS (South Nations Nationalities and Peoples Regional State)) and human resource manuals were consulted

to see how teacher educators were recruited and selected, and the criteria used to promote teacher educators from one rank to the other.

Third, a questionnaire was developed and sent out to teacher educators. It was meant to gather information on their views about the expected roles of teacher educators, what roles they were actually playing more frequently (as teacher educators themselves), and problems encountered by teacher educators in Ethiopia. The questionnaire was also used to gather information on the profile of teacher educators currently serving in selected teacher education colleges and their views as to how to improve the preparation and development of teacher educators in Ethiopia.

Finally, extensive telephone interviews were conducted with the deans of all five colleges of teacher education in Southern Nations, Nationalities and Peoples Regional State (SNNPR). The deans were asked to describe major issues related to recruitment, development and retention of teacher educators. The information gathered also included key challenges facing teacher educators, and what is to be done to improve the performance of weaker teacher educators and retain those who are academically strong and professionally committed.

Information gathered through review of policy documents and interview with college deans was analyzed by sorting it out thematically, the themes serving as codes. The key/first-order themes that are used for analysis and subsequent discussion were *recruitment*, *development* and *retention* of teacher educators. Second-order themes used for analysis were *characteristics*, *roles* and *competences* of teacher educators. The findings of the larger study have been reported under three titles: recruitment, development and retention of teacher educators; problems encountered by teacher educators; and the perception of teacher educators in Ethiopia about their roles as a distinct professional group. This paper reports findings specifically related to recruitment, development and retention of teacher educators in Colleges of Teacher Education in SNNPR.

Results

Selection and Development of Teacher Educators

Policy provisions

Most of the documents reviewed indicate that the profession of teacher educators received adequate policy attention in Ethiopia. The TESO document cited earlier contains, for instance, a comprehensive list of competencies expected of would be teacher educators (MOE, 2003). It is interesting to note that most of the competencies that could fit both under first and second order competencies (Table 1) are included. The TESO Handbook contains ten points (competencies) expected of a ‘professional teacher educator’ (Box 1).

Box 1:

Profile to fulfill the role[8] of a professional teacher educator (*emphasis added*)

1. High quality teaching experience … in order to develop strategies for *helping others to learn how to teach*.
2. Having his/her own theories about the nature and practice of teaching and be able to explain and defend them to others.
3. Understanding of the complexities of teaching and the *consequences of these for learning to teach.*
4. Awareness about the uncertain and tentative nature of the theory base for teaching; and the *consequences of this for teacher education*.
5. Understanding of the *nature and processes of the teacher educator's roles* in observation and supervision in order to foster self-appraisal in the student teacher.
6. Ability to lead seminars, groups and learning teams effectively.
7. Capacity to analyze learning situations and devise and recommend possible solutions to *meet both pre-service and in-service needs*.
8. Provide *assistance for teachers* in syllabus design and in devising of materials.
9. Sufficient knowledge of constructivism… to apply it in the process of theorizing about and reflecting on teaching.
10. Skill in working to solve *problems effectively within a team setting*.

Source: MOE, 2003, p.15

An attempt has been made to put each of the ten requirements under the two categories of competences suggested by Dengerink (2016). Three of the requirements relate to first order competencies while four relate to second order competencies (Table 1). The remaining three requirements are mixed, i.e., address both first and second order competencies. What is even more striking is that all ten requirements relate to learning and teaching (not mentioning anything about subject matter). A note has, however, been made in the document that the profile of teacher educators assumes that they meet the requirements expected of teachers[9]. One can thus see that judging the adequacy of the profile of teacher educators shown in Box 1 would be difficult or highly misleading without reviewing the profile of teachers in Ethiopia.

[8] It has been indicated that these competences are additional to the profile for teachers.

[9] This has a far-reaching implication – teacher educators are thus assumed to have a background as school teachers.

Table 1

Analysis of the profile of teacher educators in Ethiopia against the expected competencies (Based on TESO, MOE, 2003, p.15)

Profile (see Box 1)	Competence type	Focus
1	First and second order	Pedagogy
2	First order	Pedagogy
3	First and second order	Pedagogy
4	First and second order	Pedagogy
5	Second order	Pedagogy
6	First order	Pedagogy
7	Second order	Pedagogy
8	Second order	Pedagogy
9	First order	Pedagogy
10	Second order	Pedagogy

As noted above, the profile of teacher educators listed in the TESO Handbook presupposes that teacher educators also demonstrate the competencies expected of school teachers. It is therefore important to look at the competencies expected of Ethiopian school teachers from official sources so as to get a complete picture of the requirements to become a teacher educator. The document analysis conducted as part of this study also reveals that the Ethiopian Ministry of education provides an extensive list of competencies required of teachers already in the system or those to be newly deployed (MOE, 2003, p.40-43). More importantly, the specific competencies have been categorized under seven headings: competency in producing responsible citizens; subject(s) matter and its teaching, classroom communication and approaches to learning and teaching, classroom organization and management, assessment, areas related to the school and the education system, and the values, attributes, ethics and abilities essential to professionalism (Box 2).

Box 2:

Competencies expected of Ethiopian school teachers

Competency in:

- ✓ *producing responsible citizens;*
- ✓ *subject(s) matter and its teaching;*
- ✓ *classroom communication and use of approaches to learning and teaching;*
- ✓ *classroom organization and management;*
- ✓ *assessment;*
- ✓ *areas relating to the school and the education system; and*
- ✓ *the values, attributes, ethics and abilities essential to professionalism.*

Source: MOE (2003, pp.40-43)

When one combines the requirements for becoming a teacher (Box 2) and teacher educator (Box 1) as specified in key official documents, most of the first and second order competencies seem to have been duly considered. The other document that has an equally strong implication to recruitment and development of teacher educators is the "Teachers' and Directors' Preparation and Development Guideline" prepared by the Federal Ministry of Education (MOE, 2017). This document also contains useful information about the requirements of each of the key players in the educational system, including teacher educators.

With regard to teacher educators, the document requires them to demonstrate both subject matter knowledge and pedagogical competencies. What is more, teacher educators with experience in teaching are given priority during selection. In cases where there are applicants with attractive academic profile but no teaching experience, the document states two additional requirements for such people to become a teacher educator: undertaking a Higher Diploma in Teaching Program (HDP); and a year-long teaching experience in one of the surrounding primary or secondary schools (MOE, 2017, p.34-5, *document available only in Amharic*).

Another policy document, prepared at the regional level, namely, the 'Teacher Education Colleges Legislation', requires all teacher educators to have license to serve unless they are new to the profession (SNNPRS, 2018, p.77-79):

> All teaching staff is required to possess a teacher educator license from the HDP and ELIC. No instructor is allowed to teach in the college without producing such a certificate of license from a recognized institution and college ELIC respectively unless otherwise the staff is new for teaching profession.

One can thus clearly see that the key policy documents prepared both at the federal and the regional levels carry provisions that help Colleges of Teacher Education (CTEs) define the characteristics and roles of teacher educators, and guide efforts with regard to their recruitment, development, and retention.

Roles of teacher educators

The aforementioned documents show, among other things, the types of engagements expected of teacher educators. According to a document prepared by Ministry of Education (MOE, 2017), teacher educators are required to teach 12 hours a week, offer special support and counseling services, conduct research and disseminate the results thereof, engage in consultancy services (as per the provision of the college's regulations), and facilitate/catalyze the partnership between their college and schools in its surrounding. One can see that teacher educators in Ethiopia are required (as per official documents) to engage in four of the six key roles discussed in the brief review of the literature presented earlier (see Dengerink et al., 2015). The roles not specifically mentioned in the document reviewed here (MOE, 2017) are teacher educators as 'curriculum developers' and 'gate keepers'.

The practice on the ground

All the CTEs that participated in this study seem to apply similar criteria and procedures to recruit and deploy teacher educators. The criteria used include, as indicated by the college deans, previous experience in teaching (in colleges or schools), participation in Higher Diploma in Teaching Program (HDP), and participation in a PGDT Program after completion of their first degree (candidates without PGDT are considered only when there is no other alternative). Applicants with BEd and MEd are given priority over those with BA/MA and MA/MSc. Besides, candidates are required to have a GPA of 2.75 for males and 2.50 for females. Applicants who meet all these requirements are then subjected to a rigorous interview, and they are asked to conduct a lesson in their area of specialization. The latter was meant to check their content knowledge and skills in presentation and communication.

The college deans also noted that interviews are used to assess the attitude of candidates towards the teaching profession. Two of the colleges indicated that they administered an entrance exam that covered both subject matter and pedagogical aspects. In one of the colleges, the entrance exam carried 90% (minimum required performance being 50%) of the overall requirement thereby leaving only 10% for the remaining criteria: interview (5%) and experience (5%). In the same college, an additional 4% is given to female candidates. Some of the colleges give priority to those with relevant training and computer skills.

In general, the study shows that there is a degree of alignment between policy specifications (as stipulated in the official documents) and the practice on the ground. None of the colleges is hiring teacher educators without subject matter and professional preparation (except in some cases where getting candidates with such a profile is virtually impossible). What about efforts to retain those who are in the system?

Effort towards Retaining Teacher Educators

Professional support

The interview conducted with the deans of CTEs indicates that, following their deployment, teacher educators receive some professional support from their respective colleges. The most important is an opportunity to attend a Higher Diploma in Teaching Program (HDP). The HDP, usually offered in collaboration with universities located nearby, is primarily aimed at improving pedagogical skills. Some CTEs have already built their capacity and got certified to conduct HDP. Nevertheless, the diplomas are still being issued by the collaborating universities. It is important to underline that every newly hired teacher educator is required to go through the HDP. The College Legislation referred to earlier adds participation in English Language Improvement Program (ELIP) as a requirement: “All teaching staff is required to possess a teacher educator license from the HDP and ELIC” (SNNPRS, 2018. p.77).

There are also a few professional development programs undertaken at college and department levels. Trainings conducted at a college level (other than HDP) cover a range of issues including action research and assessment. In one college, teacher educators meet every week and discuss on issues of their interest. At a department level, an attempt is often made to address the

needs of the staff, i.e., training is organized based on the felt needs of the participants themselves. Peer learning (observation) is often encouraged but not practiced at any significant level. Though not as strong as HDP, the English Language Improvement Center (ELIC) offers opportunities for teacher educators to improve their English language. It is also indicated by the deans that the main focus of ELIC is, so far, supporting graduating students, not teacher educators.

Upgrading is the other strategy commonly used in CTEs. The dean of one of the colleges indicated that teacher educators are sent, after a year of service, for further education (for a masters degree, unless there is a serious shortage of teacher educators in the concerned department). In some cases, CTEs sponsor PhD candidates, but this is quite rare (where there is no tuition fee required, CTEs could pay their salaries or pocket money). One of the colleges, in particular, highly encourages teacher educators to upgrade their qualification through formal education, after two years of service. At the time of this study (2018/9), there were eight teacher educators who were doing their doctoral degrees in this college alone.

Recognition and awards

All the colleges which participated in this study organize events annually to recognize those with outstanding contribution to the profession. The deans of the colleges indicated that such events are organized at the regional level, by the Regional Bureau of Education (RBE). The selection of candidates is made by the respective college and forwarded to the RBE. The best teacher educator will then be selected based on established criteria and given a certificate and a token gift, just to express appreciation. Besides its contribution to recognition and awards, teaching effectiveness is considered as one of the criteria used for selecting teacher educators for scholarship to upgrade their academic qualification (e.g. to a PhD). One of the colleges offers scholarship priority to its 'model' teacher educators to do their PhD, and arranges a special tour for site seeing and recreation. In some of the colleges, recognition events are also carried out at a stream level (Stream is the level above a Department, e.g., Social Science Stream).

Accommodation and child education-allowance

Some of the colleges own residential facilities for teacher educators (though most have very few houses). In one of the CTEs, for instance, there were about 20 houses which were given to teacher educators based on their order of application (first come-first served) except those with families. The rest are entitled to a housing allowance which is nominal (250 Birr subjected to income tax, at the time of the study). Unlike the others, one college is lucky enough to provide housing to 80% of the teacher educators (within the campus!). This is because former student dormitories were changed into teacher houses. None of the colleges provided allowance for education of staff children which could have contributed immensely to retention of teacher educators.

Career structure and salary

TEIs are found to have a career structure which is pretty similar to the one currently used in Ethiopian universities. The following are the ranks/career levels used in colleges that participated in the study: Graduate Assistant I (GI), Graduate Assistant II (GII), Assistant Lecturer, Lecturer, Assistant Professor, Associate Professor, and Full Professor. Thought this structure is in place for sometime now, in practice ranks above lecturer are not yet conferred thereby creating a great deal of dissatisfaction among teacher educators. Nevertheless, those who have PhDs are automatically promoted to the rank of assistant professor but tend to leave the colleges to join universities (see the section on challenges).

Efforts towards Quality Enhancement and Assurance

Engagement in research

One of the roles of teacher educators is engaging in (applied) research. The overall performance in this regard seems by no means adequate. In one of the colleges, for instance, after several years of hibernation, the research unit has been revitalized quite recently. A team composed of five teacher educators was set up to administer research activities, assesses proposals, work on funds for selected proposals, and organize sessions for the presentation of findings and even publication of results (for internal use). So far, they published one issue and another issue was forthcoming. The research is basically meant to solve problems encountered by teacher educators and hence could be seen as an action research. Some teacher educators conduct their research in surrounding schools.

Another college reported a better experience. It allocates budget for research every year and invites staff to compete for funding in thematic areas identified by the College. When it comes to publication, however, there are no opportunities on offer. The individual efforts of the teacher educators account for the difference in this regard, i.e., publication and circulation depends on the ability of teacher educators to solicit funding which is perceived by many to be quite hard.

Performance assessment

Interviews conducted with college deans show that a rigorous scheme of assessment and evaluation has been applied to measure the performance of teacher educators. This was done by their students, department heads, stream heads and academic deans, on a semester basis. In one of the CTEs, for instance, the various assessment categories had been weighted as follows: assessment by students (50%), stream leaders (30%), and academic deans (20%). The results of assessment are used by teacher educators during application for promotion to a higher level (rank). This makes assessment one of the most important processes with a tremendous impact on the professional life and aspirations of teacher educators. For instance, those who fail to obtain a cumulative result of 75% are not promoted to the next level. The benchmark gets even higher as the rank increases thereby acting as an effective mechanism of quality assurance.

Mechanisms to support incompetent teacher educators

In most colleges, there is no clear guideline to identify and remove teacher educators who are not performing well. The deans noted, however, that a discussion is being conducted at federal level as to how to identify and support poorly performing teacher educators. This discussion hasn't produced a concrete guideline that could be applied by the respective colleges yet. One of the documents prepared by the Federal Ministry of Education (MOE, 2017, p.42) confirms that a policy on certification of teacher educators is on its way. More importantly, it indicates that teacher educator who fail to meet the requirements of the new guideline will not remain in the system.

The CTES have no mechanism in place that governs renewal of contract or otherwise (the aforementioned guideline could hopefully change this as well). Teacher educators remain on the job unless they commit serious offences that cause termination of agreement. Where there are disciplinary problems, the case would be reviewed by the discipline committee and corrective measures would then be taken in accordance with the offense. Most of the colleges reported that they have such mechanisms, albeit much weaker than the mechanism to recognize and reward best performing teacher educators. In one of the colleges, for instance, disciplinary issues are presented by the respective stream to the Counsel of Streams which meets once a week. Teacher educators who are found to have committed a disciplinary breach are given verbal and written warnings (for minor offences) and salary cuts are made in other cases. Teacher educators who demonstrate carelessness during practicum (e.g., who do not conduct reflection properly, etc.) are also disciplined.

On the whole, there is no significant disciplinary measure taken so far to remove teacher educators who lack the academic and professional competence. The only exception is the experience of a CTE where ineffective teacher educators and/or those who committed serious disciplinary breaches had been removed from the system. Complaints were first brought by students to their respective departments. The departments brought the issue to the Stream in charge. The Stream then made a rigorous assessment of the case and put forth recommendations to the College's Academic Commission for final decision.

Challenges Facing Recruitment, Development and Retention

Structural gap

CTEs in Ethiopia have been operating in a shadow with no clear place in the country's educational landscape. Higher education institutions have long been accountable to the Ministry of Education. The colleges, despite being part of higher education, did not have a place in the Federal Ministry of Education. Neither do they have a clear position in the structure of the Regional Bureaus of Education. As a matter of fact, the colleges are supposed to be accountable to RBE, but there is no section created to support them even under these bureaus. The Teacher Development Directorate focuses on development of teachers in general with no special unit responsible for teacher education colleges. The deans of the colleges who took part in this study felt that this is one of the most serious structural gaps responsible for most of the challenges the colleges faced.

For instance, when salary[10] increments were made for teacher educators housed in universities, those in colleges had been overlooked and this created havoc in colleges leading to multiple complications including turnover of staff mostly migrating out to nearby universities. Quite recently, one of the colleges trained three of its staff at a PhD level and none of them reported back to the sending college. Another college lost its only PhD holder. The pulling factor is a better fringe benefit at universities, including higher rate for part-time engagements. The age-old confusion as to whether CTEs fall under higher education or general education still lingers.

Career structure not being fully implemented

As indicated earlier, the career structure in place is only partly implemented (after Lecturer II) thereby causing demotivation on the part of teacher educators. Once they get their master's degree and achieve the rank commensurate with it, there is no any means of motivating them. No matter how long one serves, the salary and benefit scheme would be absolutely the same after achieving the rank of a lecturer. The colleges complained about this for quite long but no concrete action was taken.

As colleges are now being managed by a Board, there is a growing hope that positive changes would be introduced in several fronts including issues related to career structure and selection and appointment of college management team (including the dean). Indeed, the first steps seem to have been taken. For instance, for the first time, deans are being assigned on competitive basis (based on a detailed guideline issued by RBE). In the past, most education officials, including deans, had been assigned based primarily on political loyalty. The latter had been one of the causes for deep dissatisfaction and resentment among teacher educators.

Inadequate salary and benefit scheme

The generally low salary and benefit scheme, including housing allowance, has long been a formidable obstacle to recruit competent teacher educators. The salary currently paid in CTEs is widely believed to be way below what is needed to cover living expenses. Worse still, the low pay is perceived as one of the indicators of the low status accorded to the teaching profession in Ethiopia. In relation to this, one of the deans interviewed expressed a strong resentment:

> The issue is not about how much teacher educators earn (the numbers). It has more to do with the value given to the profession and respect to the professionals. The society doesn't seem to give due value to the teaching profession, in general. Though teacher educators give similar/comparable services to colleagues working in a university, they are not treated equally. For instance, the housing allowance given to teacher educators who serve in colleges of education is close to nothing.

[10] The issue related to salary scale is now resolved, according to the deans, but there are still legions of issues unresolved, owing to the structural gap.

Another cause of extreme resentment voiced by the deans was the rate of pay for part-time engagement which was perceived to be an insult to the profession (100 birr per hour for those with MA/MSC and 120 for those with a PhD). This amount is obviously too small to justify in any way (not enough to buy a *kitfo!*[11], in the words of one of the deans). In general, the small amount of pay both in absolute and relative (compared to the pay for university based teacher educators) terms caused a great deal of unease among teacher educators.

Shortage of housing remains one of the serious issues. All CTEs, except one, have a serious housing problem. One of the colleges has no housing facility on or off campus. Some teacher educators were given plots of land to build their own house (the issue as to how they manage to do this is still on air). Teacher educators get a housing allowance which is not worth talking about (250 Birr[12] per month which is subjected to income tax!). Such a low housing allowance is found to have been adding more fuel to the flame (deans resent that the amount being paid today had been introduced when the colleges were established several decades back!!).

The problem of housing is further complicated by the skyrocketing cost of renting a room or villa. In all the towns where the colleges are located, a small room (in a shared compound) costs more than 2000 Birr. A private house (villa) with one/two bedrooms costs more than 4000 Birr. This was the most important pushing factor. Teacher educators simply didn't want to come to or stay in these colleges because of this problem. Besides, lack of a 'proper' place to stay was found to have been damaging the morale and dignity of teacher educators. A case in point was the situation where teacher educators, who came home late after offering evening classes, were harassed by the landlord/landlady for not respecting the rule of the house (i.e. not staying out long into the evening!).

Inadequate professional development scheme

In Ethiopia, there is no program except the HDP, specifically meant to prepare and develop teacher educators. To make matters worse both the origin and process of HDP have been severely criticized by researchers and practitioners (Tessema, 2006, p.389). The Program is believed to have been initiated by the Ministry of Education in collaboration with British Overseas Voluntary Services so as "to implement partly the government's policy of imposing a compulsory teacher certificate or license on all those who aspire to continue as teacher educators". Besides, top-down approach followed in the preparation of the course packages and selection of facilitators made it less attractive among teacher educators. It is hence concluded that "… contrary to the goals for which it is designed, it is inflexible… teacher-centered and undemocratic practices are still dominant in the classrooms and its milieus".

It is also widely felt that teacher educators working in CTEs are clearly disadvantaged with regard to pursuing their goal towards a terminal degree. The Ministry of Education offers PhD opportunities for teachers at universities but not for those working in CTEs. As a result, teacher

[11] *Kitfo* is a traditional food highly revered in southern part of Ethiopia.

[12] This translates to about 5USD per month!!!

educators often move away from colleges to universities in search of opportunities to pursue their PhD. Currently, this is presented as yet another cause for frustration on the part of teacher educators working in CTEs. There is a general feeling that the Ministry of Education is unfair with regard to upgrading[13] the capacity of teacher educators housed in CTEs.

Practicum related challenges

CTEs offer five courses related to practicum. Prospective teachers go to schools twice (for 15 and 45 days). Teacher educators consider this as a bit too much. The following comment by one of the deans summarizes the general feeling among teacher educators:

> There are five courses related to practicum. Prospective teachers go to schools twice (for 15 and 45 days). Teacher educators consider that a bit too much. The lengthy practicum is also felt as a hindrance to research as it consumes most of the time at the disposal of teacher educators.

The other issue related to practicum is shortage of financial resources to run it properly. Conducing practicum properly involves a huge logistical and budgetary commitment. In the past, much of the financial issues were addressed using the GEQIP scheme. The scheme was terminated putting the burden on CTEs which are now trying to handle it using their own budget. This came with two problems. First, the budget allocated for this purpose is by no means comparable with that used when the program was planned and launched (when GEQIP was still operational). Second, the finance department is not aware about the intensity of work and related expenses thereby making financial request and settlement such an arduous job for the practicum coordinating offices. This has a direct impact on students' assignment to schools; and deployment of teacher educators.

An underdeveloped research facility and culture

The overall environment to do research is not conducive. With regard to this, one of the deans regrets that the Unit responsible for facilitating research was closed with not justification:

> There was a section devoted to "Research and Publication" when the college was established as an institute in 1991 E.C. This section was closed for reasons which were not clear thereby leaving no unit responsible for initiating and supporting research endeavors. After several years of hibernation the research unit has been revitalized by the college's own initiative.

The other problem is what could be presented as a weak research culture among teacher educators. Though teacher educators are expected to be researchers, this role seems to be among the least valued and exercised. This is all the more regrettable as teacher educators have a great opportunity to use the partner schools as field sites and their prospective teachers as co-researchers.

[13] The Doctor of Education (DEd) program currently introduced by the Ministry of Education can, hopefully, address at least part of this particular problem.

Discussion

It is rightly underscored that the future of teacher education is dependent on the willingness of teacher educators to practice theory; to theorize their practice; and to put the results of their efforts "before a frequently hostile public" (Bullough, 1997, p.29-30). This, in turn, requires having a system of education which gives the sub-profession of teacher educators a due place. In view of this, the results of the study reported in this paper provide helpful insights into the status of the profession of teacher educators and the implication of this to quality of education in Ethiopia, in general, and that of teacher preparation and development, in particular.

This section attempts to synthesize the findings of the study in light of the conceptual framework developed for this purpose (Fig.1). At the center of the conceptual framework are teacher educators as a sub-group in the wider profession of teaching. Given the structure and organization[14] of the colleges included in this study, every academic staff is a teacher educator! That is who s/he is as the colleges are exclusively dedicated to preparation of teachers. So, unlike those serving in university-based colleges of education, teacher educators do not seem to face a situation which puts them in an identity crisis[15]. No matter what they teach (subject matter or pedagogy), they are preparing teachers and hence are teacher educators, by definition. This is quite important as it gives credence to the claim that there is a sub-group in the teaching profession called the profession of teacher educators. It is also interesting to note that the colleges harbor all the four 'families of teacher educators' suggested by Fenstermacher (1997, p.ix) albeit to a varying degree. These are the family that prepares teachers to 'impart their content efficiently and expertly'; that enables teachers 'to assist students to develop a critical understanding of society, so that they do not merely reproduce the given culture'; that prepares teachers 'to assist students in becoming makers of meaning'; and that consists of 'those who believe that the essence of teaching is in reflecting on experience and reconstructing practice following reflection'.

The second component in the conceptual framework relates to 'policy provision'. There is a growing understanding, globally, that teacher educators alone "cannot assure good quality teacher education without an effective teacher education institution, which constitutes the teacher education system" (Sanyal, 2013, p.33). One of the implications is that there must be a policy that supports the running of what is presented by Sanyal as a 'good quality teacher education'. The document analysis conducted as part of this study clearly indicates that the key policy documents contain important provisions for preparation of teacher educators in a way that addresses all the key dimensions of the sub-profession. As a whole, the findings indicate that the Ethiopian Ministry of Education takes the issue of professionalization of teacher educators quite seriously. Besides, international comparison shows that the Ministry's requirements are in line with global experience in preparation of teacher educators. Though there are variations across the world in the entry profile

[14] All the colleges, except one, are located in huge campuses exclusively mandated to prepare primary school teachers.

[15] In colleges of teacher education housed in universities, some lecturers are often seen struggling to consider themselves as teacher educators thought their work is exclusively related to preparation of teachers.

of teacher educators, having a prior experience as a school teacher appeared, in general, "to be an essential building block on which to develop an identity as a teacher educator" (Williams, 2014, p.325).

The third component of the conceptual framework (Fig. 1) deals with the views of educational administrators about roles and characteristics of teacher educators. Interviews with the deans have indicated that they held a holistic view about the characteristics and roles of teacher educators (similar to the requirements of the key documents discussed above). This is not surprising as the college leaders are probably among the producers of those documents. In any case, they are expected to implement the provisions of the national policies regarding recruitment, development and retention of teacher educators; and hence have such a holistic view. More importantly, the positive views the deans expressed about the characteristics and roles of teacher educators could be considered as a great asset for the advancement of the profession of teacher educators in Ethiopia.

The way the deans conceptualize quality of education and relate it to the role of teacher educators is worth an attention here. The deans clearly had a broad and comprehensive understanding of quality of education. One of them argued, for instance, that quality is 'subjective and hard to measure'. However, graduates from his college were required to enable children to achieve the minimum competencies set in the curriculum, no matter what their background and prior situation was. Teacher quality, according to this dean, is 'also related to the overall ability of graduates to handle students well'. This, in turn, 'requires more than understanding the subject in the curriculum'. It has to do with the 'application of the right methodology (teachers need to know how to tell in addition to what to tell)'. The deans also warn that quality is a result of multiple factors and, hence, it is not appropriate to expect teachers and teacher educators to be solely responsible for its achievement.

The fourth component of the conceptual framework relates to teacher educators' own views (self-image) about the characteristics and role of their profession. This component has also been included in the larger study but not reported here as space doesn't allow presentation of all results.

Finally, this study tried to identify challenges that affect the effectiveness of teacher educators. The most important ones are shortage of appropriate professional development packages and inadequate living and working conditions. Previous studies conducted in Africa report a similar problem severely undermining the quality of teacher education. The absence of a method for teachers to become teacher educators and lack of established standards to qualify as a teacher educator were, for instance, identified as among the shortfalls of the Kenyan education system (Nordstrum, 2015). The other challenges threatening efforts to retain good teacher educators in Ethiopia is shortage of a decent housing; and lack of both time and culture to undertake research geared towards problem solving. Though teacher educators had an impressive profile with regard to the balance of subject matter and pedagogy, the degree of engagement in research is by no means satisfactory due to unfavorable environment or lack of research culture on the part of the teacher educators.

The other key challenge, though not related directly to teacher educators but highly affecting their effectiveness, is lack of residence to college students. In fact, the deans consider this as one of the factors damaging quality in their respective colleges. Unlike students assigned to public universities, those in CTEs are not privileged to have access to a dormitory service. This factor is found to make the work of teacher educators much harder and the results of their efforts much weaker. College students used to get 300 Birr per month for subsistence (this was raised to 450 Birr recently). Such a small allowance is found to have multiple impacts on the social and academic life of students (with a strong implication to quality of education). To begin with, this amount is not enough to cover expenses related to food and accommodation, let alone those related to education. To cope up with this problem, students rent accommodation in groups and in areas that are far away from the college campus. Students living under such a situation would obviously forge social relations (in this case mostly negative). The problem related to distance between students' residence and their campus is quite evident. Students cannot make use of services like library and tutorial. All of these factors have a negative impact on the academic achievement of the prospective teachers. If the problem of residence is solved, says one of the deans, most of the other problems indicated here would be solved automatically!

Conclusion

The last two to three decades saw a modest but growing interest in understanding the unique characteristics and competences of teacher educators. One can safely suggest that today there is, at least, the recognition in some countries that it would be difficult, if at all possible, to have competent teachers where there are no competent teacher educators. A document prepared by the European Commission stresses, for instance, that "…the selection and professional development of those who educate teachers is *a prerequisite* for raising the quality of teaching and improving learning outcomes' (European Commission, 2013, P.10, *emphasis added).*

The Ethiopian Education and Training Roadmap, now under implementation, identified the way teacher educators are recruited and developed as one of the missing-links in the education system and provided a strong policy advice: "Develop a framework for the selection, preparation and development of teacher educators" (MOE, 2018, p.45). The findings of the study reported here are hoped to shade light on areas where the 'framework' to be developed in the future needs to focus. With regard to characteristics and roles of teacher educators, the existing official documents have sufficient provisions. More importantly, the colleges included in this study are found to have been applying these requirements during selection and deployment of teacher educators.

Though there are noteworthy efforts to motivate and retain good teacher educators (e.g. regular events to recognize and reward them), lack of a clear career structure; inadequate professional development schemes; and shortage of housing services are found to be among the factors that undermine any efforts to retain capable teacher educators. The weak college-community link and poor research facility and culture are the other factors that affect quality in TEIs. The implications of this could be far reaching. What is clear, though, is as quality education

is unattainable without quality teachers; the latter is equally unattainable without sufficiently motivated and committed teacher educators. Hence the paper ends by proving some recommendations to address the key problems identified by the study.

Recommendations

The following are recommendations[16] made based on the key findings of this study:

- Recognize colleges of teacher education as part of the country's higher education system and revise salaries and benefits as per the guidelines of higher education. This has already been made in terms of salary. The same has to be made for other benefits.
- Prepare a well thought about and need-based capacity building scheme for teacher educators, in addition to the existing HDP. The training could take place during summer break. This responsibility could be taken up by the five Centers of Excellence (CoE) currently housed in Universities of Addis Ababa, Bahr Dar, Jimma, Hawassa and Mekelle.
- Reform the entire curriculum of colleges of teacher education, including the revision of the practicum package. This should also address the issue of college-school partnership. The Ministry of Education and Regional Bureaus of Education should take this responsibility.
- Adopt an 'apprentice teacher system' as a transitional mechanism, i.e., until colleges have adequate pool of teacher educators to recruit from. In the apprentice teacher system, "the teacher candidates who have successfully passed the open competitive exam for teacher employment are subjected to classroom observation, instructional material preparation, classroom instruction, student guidance, and classroom supervision for one semester, or a one-year probationary period under a quasi-employment status" (Ee-gyeong et al., 2009, p.19). At the end of the apprenticeship period, the candidates' acceptance should be based on the holistic evaluation of their teaching competency and potential.
- Establish a robust link between BEd, MEd and DEd Programs. Strong DEd Programs could eventually satisfy the need for qualified teacher educators thereby boosting quality of education in the country.

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[16] The recommendations could also be seen as policy proposals to be implemented by the Federal Ministry of Education, Regional Bureaus of Education and universities and colleges that house teacher education programs.

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