

## Continuous Professional Development and Instructors' Beliefs about and Practice of Active Learning Method in Bahir Dar University

Mulugeta Teka Kahsay<sup>a1</sup>

<sup>a</sup> *Department of English Language & Literature, Bahir Dar University, Ethiopia*

**Abstract:** The objective of this study was to investigate whether there is an overall difference in instructors' beliefs about and practice of active learning methods as a function of the ongoing continuous professional development, known as Higher Diploma Program (HDP). To achieve this objective, it was essential to examine the level of instructors' beliefs and practice in active learning methods. The participants of the study were 58 university instructors (31 HDP participants and 27 non-participants), selected using a stratified sampling technique from four faculties of Bahir Dar University. They responded to a questionnaire having two parts: beliefs about active learning methods and application of active learning methods. The study first employed one sample t-tests which showed that, though these instructors held significantly stronger beliefs about active learning methods than the expected level, they reportedly implemented active learning methods slightly less frequently than the expected level. Then, after computing means and standard deviations for each of the two groups of respondents (31 HDP participants and 27 non-participants), multivariate analysis of variance (MANOVA) was applied to compare the difference between HDP participants and non-participants in their beliefs and practice of active learning methods (when both dependent variables considered together). The results indicated that there was no significant multivariate difference between HDP participants and non-participants in their beliefs and practices of ALM. However, the univariate analyses proved that the HDP participation had a slightly better impact on the instructors' beliefs about ALM than on their practices of ALM. More precisely, the analysis revealed that instructors who participated in the HDP are not anymore strategic in handling learning situations through deploying appropriate ALM techniques than those who did not take the training.

**Keywords:** continuous professional development; instructors' beliefs; practice

### INTRODUCTION

Active learning has its underlying philosophy in constructivism, which has profound implications for all aspects of a theory of learning. The constructivist perspective widely accepts that knowledge is acquired through involvement with content instead of imitation or repetition (Richardson, 1997; Abdal-Haqq, 1998). Learning activities in constructivist settings

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<sup>1</sup> Corresponding author : [mulugetateka2010@gmail.com](mailto:mulugetateka2010@gmail.com)

are characterized by learners' active engagement, inquiry, problem solving, and collaboration with others.

In this constructivist approach, in order to make learning durable, transferable and self-regulated, mechanisms need to be in place to promote the deeper internal processing required for such learning to occur. One of these is active learning method, which happens when students are given the opportunity to take a more interactive relationship with the subject matter of a course, encouraging them to generate rather than simply to receive knowledge. Different strategies that promote active learning can be employed in the classroom. These include project work, group work, debates, brainstorming, games, problem-based learning, and peer teaching (Bonwell & Eisen, 1991; Johnson, Johnson, & Smith, 1991).

According to Grabinger (1996), active learning is a process in which students are engaged in a continuous, collaborative process of building and reshaping understanding as a natural consequence of their experiences and interactions with the world in authentic ways. Active learning is defined as learning that involves providing opportunities for students to meaningful engagement in the instructional process (Johnson, Johnson, & Holubec, 1986).

The main purpose of active learning method is to actively involve students in the learning process which empowers them to discover knowledge and transform it into concepts to which they can relate. The knowledge is then reconstructed and expanded through new learning experiences by using a structured approach which involves a series of techniques to offer students the opportunity to participate actively in their learning.

In order to effectively implement active learning methods, instructors need to develop strong beliefs about the features of active learning approach conceptualised in constructivist pedagogy (Smith, 2001; Richardson, 1997; Abdul Haq, 1999; Williams & Burden, 1996; Fosnot, 1989; Good & Brophy, 1984). When a faculty moves away from the traditional transmissive pedagogy to the constructivist pedagogy, the shift cannot come into effect by simply announcing it in a form of decree or circulating a directive. There must be a mechanism to introduce the shift. One major way is to empower faculty members through continuous professional development (CPD) training. During the CPD training, the faculty members must take time to examine the principles and concepts upon which active learning techniques are based, and reflect upon their role as a teacher. This means the faculty members should undergo changes in beliefs, which presuppose to understand the theory. These conceptual changes, consequently, lead to a well-informed and sustainable practice.

## **THE PROBLEM**

When the shift to constructivist pedagogy was introduced in Ethiopian educational system, a continuous professional development program was initiated in universities and all teacher education institutions in a bid to prepare teachers who can confidently promote active learning and the development of problem solving skills through a learner-centered approach (MOE, 2003). The major focus of this CPD program, better known as Higher Diploma

Program (HDP) in universities, was to improve the quality of instruction by switching to active learning and learner-centred approach and by including recommended changes in standards, most notably from a constructivist framework. These changes are primarily concerned with assumptions about knowledge, learning, and teaching that promote students' deeper understandings of concepts and the relationships of concepts as opposed to memorization of isolated information (Beck & Kosnic, 2006).

In line with these objectives, most universities have been running HDP to train their staff for more than ten years, and majority of the instructors have completed the training and received a diploma.

However, different researchers reported that, despite the enormous efforts to implement active learning methods in Ethiopian schools and higher learning institutions, instructors and teachers have not yet changed their classroom practices to the level required. For example, Wondimagegnehu (2006) and Haileeyesus (2007) reported that teachers did not have strong beliefs about active learning method and their theoretical knowledge was inconsistent with their practice of active learning method. Haftu (2008) also discovered that teachers had a narrow conception about problem solving in teaching. Melaku, Atagana and Temechengn (2013) also reported that, despite the recent orientation to constructivist pedagogy, most lecturers in higher education adhered to traditional teaching methods.

Moreover, Adula (2008) found out that HDP graduates were not applying Higher Diploma Training skills to the expected level in Jimma University. Aschalew (2013) also reported that, although the instructors in Haramaya University had perceived active learning positively, their practices of active learning were low. Amera (2012) reported not only that university instructors' utilization of active learning strategies was significantly lower than the required level but also that there was no significant difference in their utilization as a function of HDP training status. More specifically, the statistically non-significant difference in their utilization of active learning method among those instructors who graduated from the program ( $M=2.46$ ), those who were taking the training ( $M=2.51$ ) and those who did not participate in the training ( $M=2.55$ ) calls for further inquiry. As the HDP training is still being offered and likely to continue to be offered to university instructors in different faculties and colleges, it is mandatory to carry out an investigation into the same issue to see whether or not things have changed after the training program has been in place for the last twelve years.

One factor for this observed low practice of ALM might be the absence of strong beliefs in principles and practicality of constructivist pedagogy, underpinning active learning methods. Existing research suggests that trainees' beliefs have the potential to influence both their experiences and actions as learners, thus serving as a kind of strong perceptual filter (Anderson & Bird, 1995; Goodman, 1988; Nisbett & Ross, 1980; Pennington, 1996; Tillema, 1994; Weinstein, 1989; Zulich, Bean & Herrick, 1992; Holt-Reynolds, 1992, Puchga, 1990; Nespor, 1987; Schoenfeld, 1983).

As people's beliefs play an influential role in the appraisal and acceptance or rejection of new information and in shaping their practices, the participants' and the non-participants' beliefs and their practices need to be investigated and compared in light of a constructivist teacher education framework underlying active learning methods. Towards this end, the following leading research questions were formulated.

- What is the status of instructors' beliefs about active learning methods?
- To what extent do they use active learning methods in their classes?
- Is there an overall significant difference between HDP participants and non-participants in their beliefs about and practices of active learning method?

## **METHODOLOGY**

This study was a survey study which involved the use of a self-administered questionnaire to collect data from two groups of university instructors: those who completed HDP training and those who did not take the training at all.

### ***Participants***

Participants in this study were 58 instructors (15 female, 43 male) from four faculties in Bahir Dar University in the 2015/16 academic year. Seventeen instructors from Humanities Faculty, twelve from Faculty of Social Science, fifteen from Behavioral and Educational Science College and fourteen from Science College were selected using a stratified sampling technique, using HDP training participation a criterion for strata formation. Thirty-one of these instructors had completed the HDP training, whereas twenty-seven of them did not take the training. The participants' age ranged from 27 to 56 ( $M = 41.52$ ,  $SD = 1.49$ ).

### ***Instruments***

A questionnaire was designed, from the literature reviewed, as a self-report instrument to assess teachers' beliefs and their use of active learning methods in their respective courses.

#### ***ALM Belief Questionnaire***

The first questionnaire was developed to measure the participants' beliefs about ALM. Initially, the questionnaire had consisted of 13 items in a five-point Likert scale ranging from "Strongly Agree" to "Strongly Disagree". Instructors were asked to respond to items by indicating how far they agree with the statements of beliefs. Some of these items were negatively worded, for which reverse coding was applied later. Some examples of the items were the following: "A good teacher should spend more time asking questions than giving information," "A good teacher should act as a resource person in the subject area, primarily in terms of giving and sharing information," "Teachers can teach best by engaging learners in problem solving tasks," and "Getting students to do different activities before lecturing on /explaining the concepts is time wasting rather than facilitating learning."

After the administration of the questionnaire, while checking the internal consistency of those 13 items through Cronbach Alpha reliability test, a further item-total correlation analysis was conducted to screen items with low correlation in the scale. Accordingly, three items whose item-total correlation coefficients were below 0.3 were discarded. Finally, the participants' responses to 10 items were considered for final analysis. The questionnaire had a coefficient alpha of 0.87, which suggests that this instrument was highly consistent in measuring beliefs in ALM across its 10 items.

### *ALM Practice Questionnaire*

The second questionnaire was developed to measure the participants' practice of ALM. Initially, the questionnaire had consisted of 18 items in a five-point Likert scale ranging from "Always" to "Never at all". Instructors were asked to respond to items by indicating how frequently they apply the techniques. Some of these items were negatively worded, for which reverse coding was applied later. Some examples of the items were the following: "In teaching I present the concepts and theories first," "In my teaching I spend more time asking questions than giving information," "My primary focus is to pass on what I know to my students," "I facilitate challenge and support to help students perform just beyond the limits of their ability," and "I employ pair and group work in order to expose the learner to alternative viewpoints."

After the administration of the questionnaire, while checking the internal consistency of those 18 items through Cronbach Alpha reliability test, a further item-total correlation analysis was conducted to screen items with low correlation in the scale. Accordingly, five items whose item-total correlation coefficients were below 0.3 were discarded. Finally, the participants' responses to 13 items were considered for final analysis and the questionnaire had a coefficient alpha of 0.83, which suggests that this instrument was highly consistent in measuring practice or use of ALM across its 13 items.

### *Data Analysis Techniques and Procedures*

To prepare data for analysis, the summated rating method was used in scoring the tools. This means composites for both scales were produced by adding up scores on relevant belief and practice items on the questionnaire and dividing the totals by the total number of items. This method controls for error effects that are due to a participant's random selection of responses (Schmidt & Hunter, 1999). Each response was associated with a point value, where a five point value was assigned to "Strongly Agree" and "Always"; and a one point value, to "Strongly Disagree" and "Never". Items with negative statements were reversely coded so that higher scores on the scale would indicate (a) higher level of beliefs, and (b) better use of active learning method in their courses.

Then, exploratory data analysis was conducted using descriptive statistics to determine the possibility of applying the inferential statistics, t-tests and MANOVA.

Subsequently, one sample t-tests were employed to determine the level of the instructors' beliefs and self-reported practices in ALM. To determine the testing value, the range of the mean scores in the one to five scale was divided into three equal sections: 1.00 – 2.33, 2.34 – 3.66, and 3.67 – 5.00. The cut-off point dividing the bottom-third and the middle-third was 2.33 and the one dividing the middle-third and the top-third was 3.66. Based on this, to claim that instructors have a good level of beliefs and practice in active learning method, they should score an average of 3.66 on the scale. Therefore, the testing value (expected mean value) was set at 3.66.

Finally, to find out about the overall difference between instructors who completed the HDP training and those who did not take the training in their beliefs and self-reported practices of active learning methods, multivariate analysis of variance (MANOVA) was used with CPD clusters (Participants, N=31 vs. Non-participants, N=27) as an independent variable and the beliefs and practices as combined dependent variables, considering the computed mean scores and standard deviations of beliefs and practices for each group.

## RESULTS

First of all, the exploratory data analysis proved that the data did not have any problem of normal distribution, multicollinearity, outliers, homogeneity variance-covariance matrices.

Table 1

*Exploratory Data Analysis*

Variable	Group	N	Min.	Max.	Meam	SD	Skewness	Kurtosis
Belief in ALM	CPD Participants	31	3.23	4.69	4.09	.382	-.144	-.940
	CPD Non-participants	27	2.87	4.67	3.85	.416	-.868	.649
	Total	58	2.85	4.69	3.98	.412	-.863	.165
Practice of ALM	CPD Participants	31	2.68	3.95	3.21	.297	1.289	.036
	CPD Non-participants	27	2.79	3.51	3.17	.219	-.685	1.411
	Total	58	2.68	3.95	3.19	.263	1.261	.160

Table 1 shows descriptive statistics of ALM belief and practice scales. Since the values of skewness and kurtosis are within (-2 and +2), the belief and practice variables can be said to be normally distributed (Rubin, 2010). A correlation analysis was conducted to see the interdependence between the two dependent variables (instructors' beliefs and use of active learning methods) and to confirm the absence of multicollinearity between them. The Pearson product moment correlation analysis result ( $r = .39$ ,  $p < .01$ ) proved a significant positive relationship between their beliefs and use of active learning method and no problem of multicollinearity. This indicated to the researcher that advanced statistical analyses can be applied with the data.

In response to the first and the second research question, one sample t-tests were computed to measure the whole respondents' beliefs and practice of active learning methods and to determine whether their belief and use of ALM are up to the required level. The results are reported in the table below.



Table 2  
*Levels of Instructors' Beliefs and Practices of ALM*

	N	Mean	Std. Dev.	Expected value	t	df	Sig.
Belief in ALM	58	3.98	.412	3.66	6.006	57	.000
Practice of ALM	58	3.19	.263	3.66	-13.491	57	.000

Table 2 above shows the means and the standard deviations for the two scales of Active Learning Methods. The results shown indicate the mean score on the first scale (Beliefs about ALM;  $M=3.98$ ;  $S.D. = .412$ ), which is well above the test value (expected mean value, 3.66) of the one-to-five response scale, denotes that the instructors have fairly strong beliefs about active learning methods. To compare this observed mean score against the expected value, a one-sample t-test was applied. As shown in the first row of the table, the t-test result ( $t_{(57)} = 6.006$ ,  $p < .05$ ) proves that the observed mean is significantly higher than the expected mean.

The second row of Table 2 also shows the mean score and standard deviation computed from the participants' responses to the second scale. The figures (Practice of ALM,  $M= 3.19$ ;  $S.D.= .263$ ) indicate the overall mean score of the instructors' self-reported practice of ALM was below the expected mean value of the response scale (3.66). As shown in the table, the t-test result ( $t_{(57)} = -13.491$ ,  $p < .05$ ) proves that the observed mean is significantly below the expected value. Moreover, the mean scores on the two scales have shown a greater variation which suggests that the instructors' practice of active learning methods ( $M= 3.19$ ) is not as strong as their beliefs ( $M=3.98$ ).

Then, to answer the next research question, the respondents were split into two groups based on their participation in HDP training. Further descriptive statistics were applied to compute the means and the standard deviations for each group of respondents on the two scales of active learning methods. Along with the descriptive statistics, a multivariate analysis of variance (MANOVA) was applied to know if there would exist a significant multivariate difference in instructors' beliefs and use of active learning methods (the combined dependent variables) due to participation in the ongoing CPD. The result of the multivariate analysis of variance (MANOVA) is presented in Table 2 below.

Table 3  
*The Combined Effect of HDP Training on Instructors' Beliefs and Practice*

CPD Training Participation		N	Mean	SD	df	F	Sig.	$\Lambda$	Partial $\eta^2$
Beliefs in ALM	CPD Participants	31	4.09	.382	2, 55	2.739	.073	.909	.091
	CPD Non-participants	27	3.85	.416					
Use of ALM	CPD Participants	31	3.21	.297					
	CPD Non-participants	27	3.17	.219					

The figures in the table above clearly depict that the instructors who did not participate in the CPD program rated their beliefs ( $M= 3.85$ ) and their use of active learning methods ( $M=$

3.17) lower than those instructors who participated in the program rated their beliefs and their practice ( $M= 4.09$ , and  $M= 3.85$ , respectively).

As shown in Table 3, the MANOVA results show that there existed non-significant multivariate effect,  $F_{(2, 55)} = 2.739$ ,  $p > .05$ , indicating that the CPD training did not significantly impact instructors' beliefs and use of active learning methods (the combined dependent variables). The effect size, expressed by the partial eta squared (.091) in Table 3, denotes that the CPD training accounted for only 9.1% of the variance in the instructors' combined beliefs and practice of ALM.

As a rule, there is no need to run further tests after the MANOVA result shows non-significant multivariate effect. However, it is well noted that the earlier t-test results indicated that the instructors' beliefs were significantly stronger while their reported implementation of active learning methods was significantly less frequent than the expected level. Due to this, it was necessary to run univariate analyses of variance (ANOVAs) for the two dependent variables following the above omnibus test just to see the separate partial effects of instructors' participation in CPD program on their beliefs and use of active learning methods. Table 4 below presents the univariate effects of CPD program on each of the dependent variables (beliefs and practice of active learning methods).

Table 4

*The Separate Effect of HDP Training on Instructors' Beliefs and Practice of ALM*

	CPD Training Participation	N	Mean	SD	df	F	Sig.	Partial $\eta^2$
Beliefs in ALM	CPD Participants	31	4.09	.349				
	CPD Non-participants	27	3.85	.448	1, 56	5.326	.026	.085
Use of ALM	CPD Participants	31	3.21	.317				
	CPD Non-participants	27	3.17	.360	1, 56	0.368	.547	.007

The first result of the univariate analysis of variance ( $F_{(1, 56)} = 5.206$ ,  $p > .025$ ) indicates that there is no significant difference in the instructors' beliefs about ALM, nor did the second ANOVA result ( $F_{(1, 56)} = 0.368$ ,  $p > .025$ ) indicate a significant difference in the instructors' use of ALM as the function of their CPD training. Here the alpha level has been adjusted to 0.025, (0.05/2; i.e., dividing the alpha level by the number of dependent variables) based on Bonferroni's correction to compensate the increment of Type I error due to the effect of analyzing the univariate analyses of variance. However, the first partial Eta squared coefficient (.085) which reflects the effect size of CPD program on their beliefs indicates that participation in CPD training accounted only 8.5% of the variance in the instructors' beliefs about ALM, whereas the second partial Eta squared coefficient (.007) indicates that participation in CPD training accounted for a far smaller proportion of variance (only 0.7%) in their practice of ALM.



## DISCUSSION

The findings of this study showed that the research participants (i.e., instructors) had considerably strong beliefs in ALM as the computed mean scores ( $M=3.98$ , for all participants;  $M=4.09$  for HDP participants; and  $M= 3.85$  for Non-HDP participants) are much better than the expected mean value. This may indicate that they have a reasonably good level of beliefs in the principles of ALM. The analysis of the data indicates that the participants of the study have perceived active learning positively. When the participants' responses to content of the instrument are considered, we can understand that the instructors believed that the active learning plays an important role and contributes to students' better involvement and learning in academic courses. This appears to be consistent with what Aschalew (2013) reported about Haramaya University instructors' positive perception about active learning.

On the other hand, the computed mean scores for the respondents' self-reported use of ALM ( $M= 3.19$  for all participants;  $M= 3.21$  for HDP participants;  $M= 3.17$  for Non-HDP participants) are much below the expected mean value. This means that the analysis of the data obtained from the participants' responses to those thirteen items disclosed that the extent of the self-reported practices of active learning in the university was found to be low. The instructors confirmed that they practice active learning in their classrooms "sometimes", which leads to the conclusion that the practices of active learning are low. This may suggest that the instructors would tend to frequently resort to a teacher-centered method and use lecture method in their classrooms. This situation could be regarded as a conflict between instructors' beliefs and practice (somewhat stronger beliefs, but less frequent practice). This result appears to be consistent with the low practice of ALM reported by Amera (2012), Adula (2008), and Melaku, Ategena and Temechehn (2013).

The other important finding of this study is that, though there is a difference between the HDP training participant and non-participant instructors in their beliefs about ALM and utilization of ALM, the HDP training did not significantly impact instructors' beliefs and use of active learning methods (the combined dependent variables). Similarly, the effect size shown in partial eta squared (.091) depicts that the CPD training accounted for only 9.1% of the variance in the instructors' beliefs and use of ALM. This means that the observed result denoted that these two groups did not show a statistically significant different tendency into functionalizing constructivist oriented pedagogy. From separate effect sizes reported, we can say that the HDP training has impacted the participants' beliefs a little better than their practice of ALM, though it had no significant differences in both.

Although there is clear evidence of the instructors' beliefs about the benefits of active learning, they reportedly implemented active learning less frequently than the expected level. That means that most instructors adhere to traditional teaching methods. This indicates a large gap between what these instructors believe about ALM and what they reportedly practice to promote active learning in their classrooms. It is also possible to argue that this conflict of rhetoric and practice might have given the classroom instruction a sense of return to the earlier transmissive pedagogy for various reasons.

This gap might have resulted from a number of factors. Even though it was not the scope of this study to identify the factors, it is possible to speculate some based on the research literature. Among these, one may be a pitfall of familiarity, which refers to modification of some elements of the new paradigm in light of what these instructors are familiar with and what they are confident in (Hill, 2000; Yost et al., 2000; Richardson, 1996; Holt-Reynolds, 1992; Zulich, Bean & Herrick, 1992). This kind of notable difference between beliefs and practice can happen to exist when teachers' not deep-seated beliefs remain unchallenged and fail to inform or shape their practices, thus perpetuating the current practices and maintaining the status quo in their practice. In support of this argument, many researchers (e.g., Hill, 2000; Pennington, 1996; Tillema, 1994; Zulich, Bean & Herrick, 1992; Holt-Reynolds, 1992; Handal & Lauvas, 1987) confirm that our actions or practices are often shaped by our thoughts and belief systems. It is possible to doubt that the practice of these instructors is informed by their belief systems, shaped by traditional pedagogy which they are familiar with.

Similarly, other influences such as the push to cover an enormous amount of content matter or fear of losing control over the content to be covered, students' lack of interest in participating in active learning, shortage of time and concern about management of students in a large classroom while applying an alternative format could be the factor for the observed lower frequency of practice.

## **LIMITATIONS**

The findings of this study should be taken very cautiously because of these two major limitations. The first one is that the study relied on self-report questionnaire data to examine instructors' practice of ALM, liable to personal biases. Second, instructors' teaching experience and academic qualification were not considered as study variables along with participation in HDP because of the size of the research participants in this study.

## **CONCLUSIONS**

Based on the above findings, it is possible to conclude that the instructors' beliefs about the benefits of active learning and the underlying constructivist pedagogy are fairly good, while their reported implementation of active learning methods is less frequent. More noticeable difference was observed in their' beliefs than in their practices. HDP participant instructors' beliefs about ALM are not consistent with their self-reported practices. It seems that the rhetoric is much stronger than the practice.

The study proved that the difference between HDP participant instructors and non-participant ones in their beliefs and practice of ALM is not significant. This means that instructors who participated in the HDP are not anymore strategic in handling learning situations through deploying appropriate ALM techniques than those who did not take the training.

## **RECOMMENDATIONS**

The concerned office responsible for HDP training should give as much emphasis to the follow-up service as it does to the initial training. Instructors need to receive a follow-up support that helps instructors to sustain their use of the skills they have gained in the training.

A further investigation should be made by involving a large sample size in order to control the effect of teaching experience and academic qualification and to identify the exact factors contributing to the observed inconsistency between beliefs and practice.

## REFERENCES

- Abdal-Haqq, I. (1998). Constructivism in teacher education: Considerations for those who would link practice to theory. *ERIC Digest* [www.ericfacility.net](http://www.ericfacility.net)
- Adula, B. H. (2008). Application of Higher Diploma Program training skills in classroom instruction: The case of Education Faculty, Jimma University (Ethiopia). *Ethiopian Journal of Education & Science*, 4(1), 51 – 72
- Amera, S. (2012). Active learning strategies utilization and the surrounding dilemma in Ethiopian public universities. *The Ethiopian Journal of Education*, 32(1), 31 – 57.
- Anderson, L. M., & Bird, T. (1995). How three prospective teachers construed three cases of teaching. *Teaching and Teacher Education*, 11(5), 479-499.
- Aschalew, T. (2013). Teachers' perceptions and practices of active learning in Haramaya University, Eastern Ethiopia: The Case of Faculty of Education. *E – Reflection*, 1(4), 370 -390.
- Beck, C., & Kosnic, C. (2006). *Innovations in teacher education: A social constructivist approach*. New York: State University of New York Press.
- Bonwell, C. C., & Eison, J. A. (1991). Active learning: Creating excitement in the classroom. *ERIC Digest* ED340272 ERIC Clearinghouse on Higher Education Washington DC.
- Fosnot, C. T. (1989). *Enquiring teachers enquiring learners: A constructivist approach for teaching*. New York: Teachers College Press.
- Good, T. L., & Brophy, J. E. (1994). *Looking in classrooms*. New York: Harper-Collins College Publishers.
- Goodman, J. (1988). Constructing a practical philosophy of teaching: A study of pre-service teachers' professional perspectives. *Teaching and Teacher Education*, 4(2), 121-137.
- Haftu, H. (2008). *Teachers' Problem Solving Conceptions and Classroom Practices*. Unpublished Master's Thesis. Bahir Dar University.
- Haileeyesus, W. (2007). *Constructivist approach to teaching: The efforts and challenges of second cycle primary school teachers of Bahir Dar*. Unpublished Master's Thesis. Bahir Dar University, Bahir Dar, Ethiopia.
- Handal, G., & Lauvas, P. (1987). *Promoting reflective teaching*. London: Open University Press.
- Hill, L. (2000). Theory, practice and reflection: A pre-service primary mathematics education programme. *Teachers and Teaching: Theory and Practice*, 6(1), 23-39
- Holt-Reynolds, D. (1992). Personal history-based beliefs as relevant prior knowledge in course work. *American Educational Research Journal*, 29(2), 325-349.

- Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1986). *Circles of learning: Cooperation in the classroom*. Edina, MN: Interaction Book Company.
- Johnson, D.W., Johnson, R., & Smith, K. (1991). *Active learning: Cooperation in the college classroom*. Edina, Minnesota: Interaction Bock Company.
- Melaku, M. W., Harrison, A., & Temechengn, E. (2013). Ethiopian university science and technology instructors' attitudes toward active learning. *International Journal of Science and Technology Educational Research*, 4(3), 47-56.
- Ministry of Education. (2003). *A national curriculum guideline for pre-service teacher education programmes*. Addis Abeba: Author
- Nespor, J. (1987). The role of beliefs in the practice of teaching. *Journal of Curriculum Studies*, 19(4), 317-328.
- Nisbett, R. E., & Ross, L. (1980). *Human inference: Strategies and short-comings of social judgment*. Englewood Cliffs, New Jersey: Prentice Hall.
- Pennington, M. C. (1996). When input becomes intake: Tracing the sources of teachers' attitude change. In D. Freeman & J. Richards (Eds.), *Teacher learning in language teaching* (pp. 320–348). New York: Cambridge University Press.
- Pugach, M. (1990). *Self-study: The genesis of reflection in novice teachers*. Paper presented at the Annual Meeting of the AERA, Boston, April,
- Richardson, V. (1996). The role of attitudes and beliefs in learning to teach. In J. Sikula (Ed.), *Handbook of Research on Teacher Education* (pp. 102-119). New York: Macmillan.
- Richardson, V. (1997). Constructivist teaching and teacher education: Theory and practice. In V. Richardson (Ed.), *Constructivist Teacher Education: Building New Understandings* (pp. 3-14). Washington, DC: Falmer.
- Rubin, A. (2010). *Statistics for evidence-based practice and evaluation*. Belmont, CA: Brooks/Cole.
- Schmidt, F., & Hunter, J. (1999). Theory testing and measurement error. *Intelligence*, 27, 183- 198.
- Schoenfeld, A. H. (1983). Beyond the purely cognitive: Belief systems, social cognitions, and metacognitions as driving forces in intellectual performance. *Cognitive Science*, 7, 329-363.
- Smith, J. (2001). Modeling the social construction of knowledge in ELT teacher education. *ELT Journal*, 53(3).
- Tillema, H. H. (1994). Training and professional expertise: bridging the gap between new info & pre-existing beliefs of teachers. *Teaching and Teacher Education*, 10(6), 601-615.
- Weinstein, C. S. (1989). Teacher education students' preconceptions of teaching. *Journal of Teacher Education*, 40(2), 53-60.
- Weinstein, C. S. (1990). Prospective elementary teachers' beliefs about teaching: implications for teacher education. *Teaching and Teacher Education*, 6(3), 279-290.
- Williams, M., & R. Burden. (1997). *Psychology for Language Teachers*. Cambridge: Cambridge University Press.

- Wondimagegnehu, T. (2006). Upper primary students' engagement in active learning: The case in Butajira town primary schools. *The Ethiopian Journal of Education*, 26(1), 1–30.
- Yost, D., Sentner, S. & Forlenza-Bailey, A. (2000). An examination of the construct of critical reflection: Implications for teacher education programming in the 21st century. *Journal of Teacher Education*, 51(1), 39–50.
- Zulich, J., Bean, T. W., & Herrick, J. (1992). Charting stages of pre-service teacher development and reflection in a multicultural community through dialogue journal analysis. *Teaching and Teacher Education*, 8(4), 345-360.