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Assessment of the development of reflection skills among BED students in Jimma University

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ABSTRACT
Currently, there is concern from educational scholars on pre-service teachers training in equipping them with reflective skills. This study intended to assess the development of reflection skills among 3rd and 4th year BED students at Jimma University. A survey research design was employed to answer the objective of the research. 109 male and 94 female BED students across 11 departments were participated in filling out reflection questionnaires and the selection of respondents was carried out using census sampling techniques. Data was analyzed using descriptive statistics to describe the student teachers' extent of reflection in the four scales whereas the t-test for comparison of the difference between gender and batch of students in the Habitual Action scale. Mann Whitney U-test to measure the groups' sum of rank difference on Understanding, Reflection, and Critical Reflection based on gender and batch. The finding of the study indicated that the level of BED students' habitual action scale was lower and the understanding and reflection were higher. The t-test and u-test analyses disclosed that there was a statistically significant difference in habitual action scale between genders and no statistically significant difference between groups of sex and batch on understanding, reflection, and critical reflection respectively. It was concluded that the reflective skills in BED students were not uniformly and developmentally increasing among the students' batch and sex. Therefore, it is imperative to work hard to equip BED students with reflective skills particularly critical reflection to help them lifelong learners in their teaching career.

INTRODUCTION

Recognition of the importance of reflective thinking and practice in teaching and teacher education is hardly new. Thus, reflection as a concept evolved in educational literature with the writings of Dewey as reflective thought for professional development, effective teaching and better performance (Rogers, 2001). Since then the term's usage and application in higher education was rigorously studied particularly since the publication of Schon's seminal work, '*The Reflective Practitioner*' in 1983 numerous articles and books on the topic of reflection has appeared in the educational literature (Horwood, 1989; Robinson & Wick, 1992; Calderhead & Gate, 1993; Loughran, 1996 and Seibert & Daudelin, 1999). Kayapinar and Erkus point out that reflective practice is a skill and an attribute which can be gained by experience, and it can also be developed via education and experience although it is a process of self-evaluation (as cited in Yaman, 2016). According to Zeichner cited in Yaman (2016) believed that reflective practice is essential for bringing understanding to the complex nature of classrooms, and states that teachers should be trained to reflect on the subject matter and thoughtful application of particular teaching strategies. He further adds that teachers need to reflect on their learners' thinking, understandings, interests and developmental thinking.

In other words, teachers need to look at teaching from other perspectives to become more reflective practitioners (Mathew, Mathew & Peechattu, 2016; Mahek, Nadia & Ayesha, 2020).

According to Wenzlaff (1994) and Al-Isa (2002) cited in Tok and Dolapcioglu (2013) and argued as the more the teacher reflectivity occurs, the better the quality of education is. In in the same manner Al-Isa in his study conducted in Turkish primary schools stated that reflective practice enables teachers and student teachers to diagnose and understand their classroom contexts students learning better, put their students, learning at the heart of the teaching process, develop a rationale for their teaching, and take informed specific actions and make sound decisions in the classroom. Reflective practice is also a goal in many teacher preparation programs; however, its definition and how it might be fostered in student teachers are problematic issues. Moreover, reflective practice is essential for effective problem solving because it promotes new knowledge and higher-order thinking skills which have significant bearing on learning and performance (Tarricone, 2011; Alzaid & Hsiao, 2018; Izu & Alexander, 2018; Luo & Baaki, 2019; Patel, Baker, & Scherer, 2019). Reflective practice has become a somewhat fashionable term in education particularly teacher education and a great deal of research has focused on reflective practice models (Farrell, 2018; Mann & Walsh, 2017; Watanabe, 2016), and its benefits (Brookfield, 1995; Farrell, 2015, 2018). Benefits of reflecting on one's teaching include developing the ability to link pedagogical theory and practice, creating opportunities to explore and evolve one's teaching beliefs, and increasing self-efficacy and professionalism (Brookfield, 1995; Farrell, 2015; Cirocki & Farrell, 2017; (Schön cited in Gill & Hooper, 2020)). Watanabe (2016) argues that reflective practice has a key role in externalizing teachers' beliefs and values, clarifying the effect they have on classroom practice, and analyzing the extent to which these beliefs are consistent with their actions in the classroom.

Creating opportunities for pre-service teachers (PSTs) to critically reflect on and theorize about their practice is frequently regarded as an essential component of professional experience. PSTs theorize about their practices cognitively and affectively by gaining insights into the complexities of the teaching and learning process and of themselves as teachers (Ditchburn, 2015). To achieve these tasks, teachers should become reflective practitioners who can question themselves, reflective on their practices, build new pedagogical techniques when schools need, and develop their expertise using continuously acquired knowledge, skill and attitude of the profession. However, the development of PSTs reflection skills in Ethiopian universities is/was not properly assessed though almost all universities who have responsibilities in training prospective teachers are graduating the candidate body annually.

Statement of the Problem

Education is a significant issue in social and economic development of countries. The most important element of education is "teacher". Having various thinking abilities is worthy for teachers. Especially development of knowledge, skills and attitude intended to reflective thinking is the determinative factor in effective teacher education. Therefore, Poyraz and Usta (2013) argued that PSTs training is and should be among the primary issues a country has to give due consideration. The fact that teachers are provided with both field competence and teaching professional skills is an issue that needs to be given importance for raising generations needed today and in the future. In this regard numerous educational literatures which focused on PSTs education argues on the necessity of developing reflective thinking and other related professional skills to be given utmost priority. Accordingly, Poyraz and Usta (2013) assert that it is necessary for PSTs to be able to use proper thinking and reflective strategies at first for providing students proper thinking skills. Hence, especially in PSTs training, enabling them to understand and developing "thinking skills" such as critical, creative, reflective, analytical thinking should be among the important functions of teacher training institutions.

Yet studies find that most learners in several countries of the glob do not have the skills for successful reflection and problem solving (Azevedo, Behnagh, Duffy, Harley, & Trevors, 2012; NASEM, 2012; PISA & OECD, 2016; NASEM, 2018; and Azevedo, Taub, & Mudrick, 2018). Findings on teacher preparation, teacher career decisions, and student outcomes suggest that teachers with more comprehensive preparation experiences will feel well-prepared, will consequently persist in the profession, and, ultimately, will teach more effectively than their less well-prepared colleagues (Kee, 2012). Since reflection is common practice in Ethiopian higher education curricula it is plausible to assess whether Bachelor of Education (BED) students have developed reflective thinking skills in order to cultivate skills that contribute to solving real-world problems and professional perplexities. Currently, no empirical data was found on the PSTs reflection skills in the context of Ethiopian higher education in general and Jimma University (JU) in particular except few studies focus on EFL students reflection (Abeba, 2019; Danbi & Tadesse, 2019; Bagaje, & Yigzaw, 2021; Fonkamo, & Zeru, 2022; Habtamu, & Belay, 2023) and none of the studies investigated the construct with the reflective skill questionnaire. This paucity of evidence motivates the researcher to conduct assessment on the development of reflective thinking skills among 3rd and 4th year BED students in JU using Kember et al (2000) reflective scale questionnaire.

The present study answered three basic research questions including: to what extent are 3rd and 4th year BED students developed habitual actions, understanding, reflection and critical reflection skills?; is there any significant difference in the development of habitual action, understanding, reflection and critical reflection skills based on sex and year of study among BED students?; which of the constructs measured in the reflective scale is most prevalent in the 3rd and 4th year BED students? Besides, the research achieved three parallel objectives: to ascertain the development of habitual actions, understanding, reflection and critical reflection skills among 3rd and 4th year BED students; to check the presence of significant difference between 3rd and 4th year BED students in the development of habitual action, understanding, reflection and critical reflection skills based on sex and year of study among BED students; to identify the most prevalent reflective construct among 3rd and 4th BED students.

METHODS

This study typically adopted survey design. The method employed in this research was quantitative methods i.e. collection of objective numerical/quantitative data (Creswell, 2007, 2009, 2013). The current study addressed 3rd and 4th year BED students of JU because these populations are those students who took most of the professional course that promote reflection. The sampling technique employed was census for both batches across all departments because the design provides a true measure of the population (Kothari, 2004). Data were collected through questionnaire. The questionnaire used to measure the reflective skills in this study was Kember et al (2000) questionnaire with due acknowledgement since the instrument has free access. The reliability of the instrument was admittedly modest with alpha level ranging from .62 to .76 and considered as acceptable given the small number of items and the complexity of the constructs measured (Leung and Kember, 2003). The Habitual Action (HA), Understanding (U), Reflection (R), and Critical Reflection (CR) scales contain 4 items each. Data were analyzed through deductive manner using both descriptive and inferential (t-test and u-test) statistics. Ethical considerations before, during, and after the research process was properly maintained (Whitely & Kite, 2012).

RESULTS

RQ1 To what extent are senior BED students developed habitual actions, understanding, reflection and critical reflection skills in JU?

Table 1. Habitual Actions

N0	Items	N	Mean	Std. Deviation
1	When I am working on some activities, I can do them without thinking about what I am doing.	203	2.35	1.580
2	In my professional course I do things so many times that I started doing them without thinking about it.	203	2.67	1.477
3	As long as I can remember handout material for examinations, I do not have to think too much.	203	2.80	1.545
4	If I follow what the lecturer says, I do not have to think too much on my professional courses.	203	2.71	1.492

In Table 1 above a construct (habitual action) was analyzed to measure whether BED students do things with or without thinking using four specific items. Accordingly, in item number 1 respondent students' were asked whether they do activities without thinking about what they are doing. Hence, in this particular item the levels of doing the construct fall under the category of disagree with its mean 2.35 and SD of 1.580. In the same vein, in item number 2 respondents were asked whether they do their professional course related activities without thinking (habitually). The items mean (2.67) with its SD (1.477) also falls under the category of disagree. The remaining 2 items dealing with students thinking on their professional course materials and lectures mean is 2.80 and 2.71 respectively falls under the undecided category implies that they were neutral in the items implication.

Table 2. Understanding

No	Items	N	Mean	Std. Deviation
1	The professional course requires me to understand concepts taught by the lecturer.	203	3.99	1.192
2	To pass the professional courses I need to understand the content.	203	4.43	.980
3	I need to understand the material taught by the teacher in order to perform practical tasks.	203	4.22	.893
4	In the professional course I should have to continually think about the material being taught.	203	4.11	.994

According to Table 2 above the understanding construct was analyzed to identify to what extent they do their course related activities with deep understanding. Thus, in item number 1 the respondents were asked to express the level of the agreement with the idea that the professional course requires them to understand the concepts taught to them by lecturers. The analyses produced a mean of 3.99 and its SD of 1.192 implying the respondent students agreement. In item number 2 respondents were asked that whether they need to understand the content of professional courses in order to score passing mark. Hence, the items mean (4.43) and SD (.980) implies that the students were definitely agreed with the intention of the item. In the last two items requiring the students understanding of the course material for practical task performance; the mean scores 4.22 and 4.11 indicate that the respondents agreed with the intention of the items.

Table 3. Reflection

No	Items	N	Mean	Std. Deviation

1	I sometimes question the way others do something and try to think of a better way.	203	4.20	1.130
2	I like to think over what I have been doing and consider alternative ways of doing it.	203	3.88	.944
3	I often reflect on my actions to see whether I could have improved on what I did.	203	4.01	1.110
4	I often re-appraise my experience so I can learn from it and improve for my next journey	203	4.12	1.003

Table 3 presents respondents opinion on the reflection construct computed herein. Accordingly, item number 1 asked students whether they sometimes question the way other do something and they themselves think of the better way to do the same thing. Thus, here it was found that respondents expressed their agreement. That is the mean score of 4.20 implies that they do the activity in accordance with the intent of the item. Item number 2 requires whether respondent students like to think over what they have been doing and consider alternative ways of doing it. The item's mean score 3.88 with it SD .944 indicates that student respondents have expressed their agreement the item.

Table 4. Critical Reflection

No	Items	N	Mean	Std. Deviation
1	As a result of the professional courses I took I have changed the way I look at myself.	203	4.11	1.035
2	The professional courses that I took have challenged some of my firmly held ideas.	203	3.63	1.371
3	As a result of the professional course I have changed my normal way of doing things	203	3.71	1.265
4	During the professional courses I discovered faults in what I had previously believed to be right.	203	4.19	.989

Table 4 presents the critical reflection level of students in the JU. Accordingly, the first item required respondents to express their critical thinking whether they changed their inward looking as a result of professional courses they took so far. Thus, it was found that respondents agreed with intent of the item since the mean score (4.11) of the item falls under the category of agreement. The second item required students to witness whether their professional courses they took had challenged some of their firmly held ideas. The items mean score (3.63) and its SD (1.371) disclose that the respondents agreement.

RQ2 Is there any significant difference in the development of habitual action, understanding, reflection and critical reflection skills based on sex and batch in JU?

Table 5. Group Statistics for habitual action (sex)

Respondents sex		N	Mean	Std. Deviation	Std. Error Mean
Habitual action	Male	164	2.54	1.227	.096
	Female	39	3.04	1.241	.199

Table 6. Independent Samples Test for habitual action (sex)

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Habitual action	Equal variances assumed	.032	.859	-2.320	201	.021	-.508	.219
	Equal variances not assumed			-2.305	57.027	.025	-.508	.221

Table 5 and 6 above depicts the group statistics and Independent Sample T-Test on respondents' sex. Those female students had an average habitual action scale of 3.04 and the male counter parts had an average of 2.54. Therefore, female BED students on the 3rd and 4th year on average were higher in their habitual action scale than their male counter parts. This difference was statistically significant (t=2.320, 201 df, p<.05 which is .021).

Table 7. Group Statistics on habitual action (year of study)

Respondents year of study		N	Mean	Std. Deviation	Std. Error Mean
Habitual action	3rd	109	2.63	1.320	.126
	4th	94	2.64	1.154	.119

Table 8. Independent Samples Test on habitual action (batches)

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Habitual action	Equal variances assumed	2.768	.098	-.100	201	.921	-.017	.175
	Equal variances not assumed			-.101	200.957	.920	-.017	.174

Table 7 and 8 above depicts the group statistics and Independent Sample T-Test on respondents' study batch. Those 3rd year students had an average habitual action scale of 2.63 and 4th year had an average of 2.64. Therefore, students on the 3rd and 4th year BED class on average were similar in their habitual action scale. The statistical significance (t=-.101, 57 df, p>.05 which is .920).

Table 9. Ranks of Males and Females (Mann-Whitney U-test)

Respondents sex		N	Mean Rank	Sum of Ranks
understanding	Male	164	102.18	16757.00
	Female	39	101.26	3949.00
	Total	203		
reflection	Male	164	105.36	17279.00
	Female	39	87.87	3427.00
	Total	203		
Critical reflection	Male	164	101.86	16705.50
	Female	39	102.58	4000.50
	Total	203		

Table 10. Test Statistics on male and female students

	U	R	CR
Mann-Whitney U	3169.000	2647.000	3175.500
Wilcoxon W	3949.000	3427.000	16705.500
Z	-.091	-1.780	-.070
Asymp. Sig. (2-tailed)	.927	.075	.944

Table 11. Median Report for sex

Respondents sex	U	R	CR
Male	4.50	4.00	4.00
Female	4.50	4.00	4.50
Total	4.50	4.00	4.00

According to Table 9, 10 and 11 the Mann-Whitney U-test was performed in order to check the sum of mean rank difference between male and female students in their understanding, reflection and critical reflection scales. Therefore, to check the difference between sex of students on three reflective scales the result revealed no significant difference for understanding, reflection and critical reflection {Median=4.5, 4.0, 4.0(male) 4.5, 4.0, 4.50 (female); n = 164 & 39; U = 3169, 2647, 3175; z = -.091, -1.780, -.070; p = .927, .075, .44, r = -1.2, -25.3, -.9} respectively.

Table 12. Ranks based on batch

Respondents batch		N	Mean Rank	Sum of Ranks
understanding	3rd	109	100.33	10936.00
	4th	94	103.94	9770.00
	Total	203		
reflection	3rd	109	95.01	10356.50
	4th	94	110.10	10349.50
	Total	203		
critical reflection	3rd	109	102.43	11164.50
	4th	94	101.51	9541.50
	Total	203		

Table 13. Test statistics based on batch

	U	R	CR
Mann-Whitney U	4941.000	4361.500	5076.500
Wilcoxon W	10936.000	10356.500	9541.500
Z	-.451	-1.943	-.114
Asymp. Sig. (2-tailed)	.652	.052	.909

Table 14. Median Report for year of study

Respondents sex	U	R	CR
3rd	4.50	4.00	4.00
4th	4.50	4.00	4.00
Total	4.50	4.00	4.00

According to Table 12, 13 and 14 - Mann-Whitney U-test was performed in order to check the sum of mean rank difference between 3rd and 4th year students in their understanding, reflection and critical reflection scales. Therefore, to check the difference between 3rd and 4th year students on three reflective scales the result revealed no significant difference for understanding, reflection and critical reflection {Median = 4.5, 4.0, 4..0 (3rd) 4.5, 4.0, 4.0 (4th); n = 109 & 94; U = 4941, 4361, 5076; z = -.451, -1.943, -.114; p = .652, .052, .909, r = -6.4, -27.6, -1.6) respectively. In a nutshell, as the Mann-Whitney U-test result revealed it was concluded that the three reflective scales such as understanding, reflection and critical reflection suggested that there was no statistically significant difference between male and female students as well as between 3rd and 4th year students in the development of reflection scales.

RQ3 Which of the constructs measured in the reflective scale is most prevalent in the 3rd and 4th year BED students?

Table 15: Comparison of reflective scales using mean score

Respondents batch		HA	U	R	CR
	Mean	2.63	4.11	3.94	3.90
3rd	N	109	109	109	109
	Std. Deviation	1.320	.867	.819	.842
	Mean	2.64	4.27	4.18	3.92
4th	N	94	94	94	94
	Std. Deviation	1.154	.589	.511	.648
	Mean	2.63	4.19	4.05	3.91
Total	N	203	203	203	203
	Std. Deviation	1.243	.754	.703	.756

According to Table 15 above reflective scales were compared between cohort groups based on batch taking the mean as a base in the quest to identify the most prevalent reflective scale to particular batch/cohort. Thus, it was found that Habitual Action with a (M = 2.63, SD = 1.320) and (M = 2.64, SD = 1.154) for 3rd and 4th cohorts respectively. Hence, this indicates that Habitual Action reflective scale was slightly similar between the groups though they were at different levels of professional engagement. Coming to Understanding, (M = 4.11, SD = .867) and (M = 4.27, SD = .589) among 3rd and 4th year respondent students respectively likewise discloses the presence of similarity in the reflective scale. In other words, the reflective scale of understanding did not reveal the significant difference between the 3rd and 4th year students. As to the Reflection scale the mean and SD for 3rd year cohort (3.94, .819) and for 4th year cohort (4.18, .511) indicates the presence of slight difference in developing such a reflective skill. That is Reflection level of reflective skill was better in 4th year students than their 3rd year counter parts. Critical Reflection being the higher level of reflective scale found in 3rd year cohort (M = 3.90, SD = .842) and 4th year cohort (M = 3.92, SD = .648) indicated nearly similar level of critical reflection between the two cohort groups. From the finding herein, it was possible to conclude that the Habitual Actions is at its modest level with no significant difference among 3rd and 4th year students. In relation to Understanding, the two cohorts though reveal higher level, remain slightly similar in such a reflective scale. Reflection scale discloses the presence of slight difference among the 3rd and 4th year students indicating higher level towards the 4th year cohort than their 3rd year counter parts. Critical Reflection was inasmuch among the 3rd and 4th year cohorts.

DISCUSSION

The present study was aimed at assessing how BED students in JU were developing reflective thinking habits. To this end a cross-sectional survey design was employed, where self-reported data about the reflective habits including habitual action, understanding, reflection and critical reflection was collected from year 3 and 4 who were at different stages of their studies in the institution. These data was then explored through description of the extent at which BED students developed reflection skills, comparison across sex, batch at the reflection scale level. In this section of the manuscript the results were summarized and discussed in light of each research question and the scientific thinking in the field.

The data suggest that BED students were at their low level in habitual actions as compared to understanding and reflection scale. Apparently, the critical reflection level was higher but was slightly lower than the other two as the mean score of the four reflective scales suggest. This finding was compatible with the findings of Leung (2011) whose study focused on the comparison of reflective scales across different batches in the problem based learning environment in Philippines polytechnic institution. Though this study was different in its methodology, it yields a comparable finding with the cited literature. The interesting finding from the descriptive analysis was the observation of the incremental reflection skill in the BED students being habitual action the lowest and understanding and reflection scale scoring closer each other, but higher level.

Regarding the difference between the male and female students as well as between batches of students the study yields varying findings. Hence, the analysis suggested that female students mean score for habitual action is higher than their male counter parts. However, it was found that 3rd and 4th year BED students were not significantly different in their habitual action reflective scale which was the surprising finding of the this particular study since theoretically, we expect the senior students shall incline to decline in their routine habits than that of their juniors. In the same fashion, reflective scales like understanding, reflection and critical reflection were found similar across sex groups and across batches. This finding was against the reports of Leung and Kember (2003) and Leung (2011) who reported that when the length of study increases the reflective practice skills in the four scales increase and profoundly differ between several cohorts of study. Besides, it was reported that there exist similar trend of reflective practice skills in scale level analysis for both batches. Hence, neither 3rd nor 4th year BED students shown difference in their reflection skills in respect to the scales measured herein. Likewise, the data did not suggest the prevalent form of reflective scales for both cohorts of study. Therefore, according to the data, it is possible to conclude that no cohort of students in both batches depicted their prevalent form of reflection skills.

CONCLUSION

The current study aimed to assess the development of reflection skills among the 3rd and 4th year BED students in JU. Hence, apparently the finding suggested BED students have developed some forms of reflective scale to a good degree; for instance, there observed understanding and reflection to be at its highest level and critical reflection a little bit behind. Furthermore, BED students were not inasmuch to the habitual action since their scale discloses they were routinely performing their professional course related activities.

The study suggested that there exist statistically significant difference in habitual action based on students' sex in which female students were more considerate in their professional course related activities than their male counter parts. However, the analysis did not provide evidences of difference in this particular reflective scale based on batches. The reflective scale/constructs such as understanding, reflection and critical reflection indicate no significant difference between male and female students as well as between batches. This finding somewhat deviates from the findings of Song et al (2006) who reported older/senior

students become more critical reflector than their counter parts. That is as the length of study year increases the tendency to critical reflection also increases. That is, this premise was not apparently evident in the present study. Finally, the study suggested that the entire reflective scales were prevalent both in 3rd and 4th year BED students without varying degree. This calls for further investigation on the reflective scale in order to identify the objective reality with more rigors in methodology and robust instruments.

Limitations and Implications

The present study was conducted using already developed research tools/reflective measure with moderate reliability value which is lower than recommended values in literature so that the findings in this study may be affected. Therefore, it is wise to conduct robust investigation by modifying the instrument in order to capture the contexts and increasing the scale measures from 5 to 7 Likert scales so that more rigors in the process could be achieved. Further, due to the assumption failure the parametric tests for understanding, reflection and critical reflection scales was not employed so that future research needs to consider on the ways of this assumptions to be fulfilled so as measuring the correlation between each reflective measure and students' batch feasible. Finally, the study only used 3rd and 4th year BED students as a target population which may blurred the findings not to indicate the proper development of the reflective skill beginning from the outset of BED journey. Therefore, it would be wise and rationale to include the 1st and 2nd year BED students to see the apparent developmental increment of the reflective skills on the reflective scales measured throughout their stay in the training trajectory.

REFERENCES

Abeba, B. D. (2019). *A reflective practice approach to educate English language teachers in a post graduate diploma in teaching programme* (Doctoral dissertation).

Akbari, R. (2007). Reflections on reflection: A critical appraisal of reflective practices in L2 teacher education. *System*, *35*(2), 192-207

Alzaid, M., & Hsiao, I. H. (2018, October). Effectiveness of reflection on programming problem solving self-assessments. In *2018 IEEE Frontiers in Education Conference (FIE)* (pp. 1-5). IEEE.

Arshad, M., Nazir, N., & Khurram, A. (2020). AA Comparative Study of Differential Characteristic Practices of Reflective Practitioners. *KASHMIR JOURNAL OF EDUCATION*, *2*(I), 1-32.

Azevedo, R., Behnagh, R. F., Duffy, M., Harley, J. M., & Trevors, G. (2012). Metacognition and self-regulated learning in student-centered learning environments. In *Theoretical foundations of learning environments* (pp. 171-197). Routledge.

Azevedo, R., Taub, M., & Mudrick, N. V. (2017). Understanding and reasoning about real-time cognitive, affective, and metacognitive processes to foster self-regulation with advanced learning technologies. In *Handbook of self-regulation of learning and performance* (pp. 254-270). Routledge.

Bagaje, M. M., & Yigzaw, A. (2021). EFL Trainee-Teachers' Reflective Practice Contents During Practicum: Arba Minch College of Teacher Education in Southern Ethiopia in Focus. *Turkish Online Journal of Qualitative Inquiry*, *12*(8).

Boone Jr, H. N., & Boone, D. A. (2012). Analyzing likert data. *The Journal of extension*, *50*(2), 48.

Brookfield, S. D. (1995). Using the Literature of Critical Reflection. *Becoming a Critically Reflective Teacher. San Francisco: Jossey-Bass*.

Brown, J. D. (2011). Likert items and scales of measurement. *Statistics*, *15*(1), 10-14.

Calderhead, J. (1993). Introduction. I Calderhead, J. & Gates, P. *Conceptualizing reflection in teacher development*, 1-10.

Cirocki, A., & Farrell, T. S. (2017). Reflective practice for professional development of TESOL practitioners. *The European Journal of Applied Linguistics and TEFL*, *6*(2), 5-23.

Cloude, E. B., Carpenter, D., Dever, D. A., Azevedo, R., & Lester, J. (2021). Game-Based Learning Analytics for Supporting Adolescents' Reflection. *Journal of Learning Analytics*, *8*(2), 51-72.

Cohen, L., Manion, L., & Morrison, K. (2002). *Research methods in education*. routledge.

Creswell, J. W. (2009). Mapping the field of mixed methods research. *Journal of mixed methods research*, *3*(2), 95-108.

Creswell, J. W. (2003). A framework for design. *Research design: Qualitative, quantitative, and mixed methods approaches*, 9-11.

Creswell, J. W., & Zhang, W. (2009). The application of mixed methods designs to trauma research. *Journal of Traumatic Stress: Official publication of the international society for traumatic stress studies*, *22*(6), 612-621.

Creswell, J. W., & Creswell, J. D. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Danbi, R., & Tadesse, D. (2019). Institutional conditions for preparing critically reflective TEFL teachers in the PGDT Program of three Ethiopian universities. *African Journal of Teacher Education*, *8*, 321-343.

Ditchburn, G. M. (2015). Remembering reflection in pre-service teachers' professional experience. *Australian Journal of Teacher Education (Online)*, *40*(2), 94-111.

Donyaie, S., & Afshar, H. S. (2019). EFL Teachers' Reflective Journal Writing: Barriers and Boosters. *Iranian Journal of Language Teaching Research*, *7*(3), 71-90.

Farrell, T. S. (2018). *Reflective language teaching: Practical applications for TESOL teachers*. Bloomsbury Publishing.

Farrell, T. S. (2014). *Promoting teacher reflection in second language education: A framework for TESOL professionals*. Routledge.

Fonkamo, D., & Zeru, A. (2022). Exploring the impediments on the application of reflective teaching in EFL paragraph writing classes. *Cogent Education*, *9*(1), 2109648.

Gill, A., & Hooper, D. (2020). Integrating Conversational Analysis and Dialogic Reflection within Reflective Practice. *Iranian Journal of Language Teaching Research*, *8*(2), 1-23.

Habtamu, N., & Belay, B. (2023). Reflective Teaching in English Language Classrooms: Perception and Practice of English Language Instructors at Wachemo University. *Education Research International*, *2023*.

Horwood, B. (Ed.). (1989). Reflections on reflection. *Journal of Experiential Education*, *12*(2), 5-6.

Izu, C., & Alexander, B. (2018, January). Using unstructured practice plus reflection to develop programming/problem-solving fluency. In *Proceedings of the 20th Australasian Computing Education Conference* (pp. 25-34).

Joshi, A., Kale, S., Chandel, S., & Pal, D. K. (2015). Likert scale: Explored and explained. *British journal of applied science & technology*, *7*(4), 396-403.

Kayapinar, U. (2018). Reflection in Teacher Development. *Reimagining New Approaches in Teacher Professional Development*.

Kee, A. N. (2012). Feelings of preparedness among alternatively certified teachers: What is the role of program features?. *Journal of teacher education*, *63*(1), 23-38.

Kember, D., Leung, D. Y., Jones, A., Loke, A. Y., McKay, J., Sinclair, K., ... & Yeung, E. (2000). Development of a questionnaire to measure the level of reflective thinking. *Assessment & evaluation in higher education*, *25*(4), 381-395

Klassen, A. C., Creswell, J., Plano Clark, V. L., Smith, K. C., & Meissner, H. I. (2012). Best practices in mixed methods for quality of life research. *Quality of life Research*, *21*(3), 377-380.

Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.

Leung, D. Y., & Kember, D. (2003). The relationship between approaches to learning and reflection upon practice. *Educational psychology*, *23*(1), 61-71.

Loughran, J. J. (2002). *Developing reflective practice: Learning about teaching and learning through modelling*. Routledge.

Luo, T., & Baaki, J. (2019). Scaffolding problem-solving and instructional design processes: Engaging students in reflection-in-action and external representations in three online courses. In *Student-Centered Virtual Learning Environments in Higher Education* (pp. 40-69). IGI Global.

Mann, S., & Walsh, S. (2017). *Reflective practice in English language teaching: Research-based principles and practices*. Routledge.

Marczyk, G. R., DeMatteo, D., & Festinger, D. (2010). *Essentials of research design and methodology* (Vol. 2). John Wiley & Sons.

Mathew, P., Mathew, P., & Peechattu, P. J. (2017). Reflective practices: A means to teacher development. *Asia Pacific Journal of Contemporary Education and Communication Technology*, *3*(1), 126-131.

National Academies of Sciences Engineering and Medicine (NASEM). (2018). Implications for learning in school. *How People Learn II: Learners, Contexts, and Cultures*, 135-162.

National Academies of Sciences, Engineering, and Medicine (NASEM). (2012). Education for Life and Work: Transferable Knowledge and Skills in the 21st Century.

Patel, N., Baker, S. G., & Scherer, L. D. (2019). Evaluating the cognitive reflection test as a measure of intuition/reflection, numeracy, and insight problem solving, and the implications for understanding real-world judgments and beliefs. *Journal of Experimental Psychology: General*, *148*(12), 2129.

Pisa, O. E. C. D. (2016). Results (Volume I): Excellence and equity in education. *PISA, OECD Publishing*.

Poyraz, C., & Usta, S. (2013). Investigation of pre-service teachers' reflective thinking tendencies in terms of various variances. *International Journal on New Trends in Education and Their Implications*, *4*(2), 126-136.

Robinson, G. S., & Wick, C. W. (1992). Executive development that makes a business difference. *People and Strategy*, *15*(1), 63.

Rogers, R. R. (2001). Reflection in higher education: A concept analysis. *Innovative higher education*, *26*(1), 37-57.

Seibert, K. W., & Daudelin, M. W. (1999). *The role of reflection in managerial learning: Theory, research, and practice*. Praeger.

Song, H. D., Grabowski, B. L., Koszalka, T. A., & Harkness, W. L. (2006). Patterns of instructional-design factors prompting reflective thinking in middle-school and college level problem-based learning environments. *Instructional Science*, *34*, 63-87.

Tarricone, P. (2011). *The taxonomy of metacognition*. Psychology Press.

Tok, Ş., & Dolapçıoğlu, S. D. (2013). Reflective teaching practices in Turkish primary school teachers. *Teacher development*, *17*(2), 265-287.

Watanabe, A. (2016). *Reflective practice as professional development: Experiences of teachers of English in Japan*. Multilingual Matters.

Yaman, S. (2016). Study on Reflection as a Source of Teacher Development: Pre-Service and Experienced Teachers. *Educational Research and Reviews*, *11*(7), 437-448.

Yuen Lie Lim, L. A. (2011). A comparison of students' reflective thinking across different years in a problem-based learning environment. *Instructional Science*, *39*(2), 171-188.

Whitley Jr, B. E., & Kite, M. E. (2012). *Principles of research in behavioral science*. Routledge.