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Using Blended Backward Design Model to Improve EFL In-Service Teachers' Assessment Literacy

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Abstract

The present research aimed at enhancing EFL in-service teachers' assessment literacy. This was achieved through applying a Blended Backward Design Model based Program. The research adopted one group design with pre/post test treatment. The sample consisted of 25 EFL in-service teachers. The following instruments were designed and used: An assessment literacy questionnaire: A Pre/Post Test assessment knowledge test; An observation checklist to observe EFL in-service teachers' assessment performance inside the class. Results of the research indicated that there were statistically significant differences at 0.05 level between the mean scores of the research group on the pre/post administrations of the pre/post assessment knowledge test, and the observation checklist in favour of the post administration. The research group teachers post performance was better than their pre- performance in the target Consequently, the proposed Blended Backward Design Model Based Program proved to be effective in developing EFL in-service teachers' assessment literacy.

Keywords: Blended Learning, Backward Design Model, Assessment Literacy.

Introduction and Overview

Assessment competencies are crucial in the field of education. Teachers utilize assessment data, whether formally or informally, to guide instructional decisions and evaluate their students. By interpreting assessment outcomes, educators can adjust their teaching approaches to suit diverse learning styles and individual needs, thereby creating a more comprehensive and effective learning environment. Furthermore, assessments empower students by providing constructive feedback that motivates them to strive for continual progress and improvement.

Scarino (2013) emphasized the significance of developing language assessment literacy (LAL) for teachers. This involves the ability to critically analyze their own assumptions, understand the subjective nature of assessments, and become increasingly aware of their evolving knowledge, practices, and values. Scarino (2013) stressed the importance of broadening

teachers' understanding of LAL to encompass their own perspectives that influence teaching and assessment practices.

Assessment Literacy

Assessment literacy encompasses the knowledge and skills necessary for teachers to effectively assess students' comprehension and abilities, interpret assessment results, and utilize this information to improve student learning and program effectiveness (Abell & Siegel, 2011). According to Mellati and Khademi (2018), assessment literacy involves teachers' preparedness to design, implement, and analyze assessment methods, measurement tools, evaluation standards, decision-making procedures, as well as formative and summative tests.

According to Boyle (2006), assessment literacy can be defined simply as understanding the principles and practices related to testing and assessment. Popham (2009) expanded this definition by stating that assessment literacy encompasses knowledge of concepts such as reliability and its vulnerabilities, content validity of tests, fairness in assessment, design of both closed-ended and open-ended test tasks, utilization of alternative assessment methods like portfolios, formative assessment practices, strategies for student test preparation, and considerations specific to assessing English language learners.

Paterno (2001) emphasized that assessment literacy requires educators to have a thorough understanding of essential principles in effective assessment practices. This includes knowledge of assessment terminology, the development and application of assessment methods and techniques, awareness of quality assessment standards, and familiarity with alternative approaches of measuring learning.

According to Fulcher (2012), assessment literacy encompasses the knowledge, skills, and abilities essential for creating, managing, developing or evaluating standardized tests on a large scale or within classroom settings. This involves understanding test procedures and the principles that guide their implementation, including ethical considerations and professional codes of conduct. Fulcher also highlighted the significance of situating this knowledge within broader historical, social, political, and philosophical contexts to grasp the origins and implications of assessment practices on society, institutions, and individuals (p. 125).

Popham (2018b) defined assessment literacy as "an individual's understanding of the fundamental assessment concepts and procedures deemed likely to influence educational decisions." (Popham, 2018b, p. 2). According to Webb (2002), assessment literacy involves understanding of

(1) methods for assessing students' knowledge and skills/ performance, (2) interpreting assessment results, and (3) using assessment outcomes to enhance both student learning and program effectiveness. In summary, assessment literacy encompasses a wide range of competencies from understanding assessment methods to interpreting results and using them effectively in educational settings, all while considering broader ethical, social, and historical contexts.

Assessment literacy enables teachers to effectively utilize data collected from different assessment methods, interpret it accurately, and enhance their instructional practices (Gotch, 2012). According to Luke (2011), the success of curriculum reforms and assessment-related policies in language teaching hinges on language teachers' assessment literacy. Luke argues that proficient language teachers should be skilled in assessing language proficiency to gauge the effectiveness of their language instruction. Additionally, having reliable indications of their students' language mastery levels would provide trustworthy metrics for understanding their ongoing language development needs.

Assessment literacy, as described by Gotch (2012), empowers teachers by enabling them to use data gathered from different assessment methods, interpret it accurately, and thereby enhance their instructional practices. Luke (2011) asserted that the effectiveness of curriculum reforms and policies related to language teaching depends significantly on the assessment literacy of language educators. Luke (2011) outlined several reasons why language teachers should strive to be proficient in assessing their students language abilities: first, it allows them to gauge the success of their language instruction; second, having reliable assessment data provides a trustworthy measure of students' language proficiency levels; third, such measures help teachers better understand and address their students' ongoing language development needs. This underscores the crucial role of assessment literacy in supporting effective language instruction and students' learning outcomes.

According to Hill (2017), the increasing importance of Language Assessment Literacy (LAL) among language teachers can be attributed to two primary factors. Firstly, there is a heightened emphasis on accountability in assessment practices, which has led classroom language teachers to assume greater responsibility for their own assessment practices. Secondly, there has been a shift in Classroom-Based Assessment (CBA) from simply evaluating learning outcomes (assessment of learning) to

actively supporting and improving learning processes (assessment for learning).

Scarino (2017) underscored the significance of language teachers' assessment literacy in light of global demographic shifts towards increased multilingualism and multiculturalism. This shift has prompted language educators to move beyond a purely communicative approach to embrace a more intercultural orientation in language teaching and learning. Scarino argues that this evolution in theoretical frameworks reshapes the goals of teaching, learning, and assessment, underscoring the critical need for language teachers to possess a sophisticated understanding of assessment literacy (Scarino, 2017, p. 21).

AlKharusi (2008) conducted a study on the impact of science teachers classroom assessment practices on ninth-grade students' achievement goals in Muscat public schools, Oman. The research involved 1,636 students and 83 teachers. Results revealed that contextual factors in classrooms, along with teachers' experience and assessment methods, interacted significantly with student characteristics to influence their achievement goals.

Hussain, Kayani, and Aktar (2018) focused on teacher educators' assessment literacy and its relationship with the academic achievement of prospective teachers. Their quantitative study utilized surveys and assessment literacy tests among teacher educators, revealing an average level of assessment literacy. The results indicated a significant correlation between teacher educators' assessment literacy and the academic achievement of prospective teachers, highlighting the importance of enhancing assessment literacy among educators to improve educational outcomes.

Hussain, Kayani, and Aktar (2018) investigated teacher educators' assessment literacy and its impact on the academic achievement of prospective teachers. Their quantitative study utilized surveys and assessment literacy tests among teacher educators, revealing an average level of assessment literacy. Results demonstrated a significant correlation between the assessment literacy of teacher educators and the academic success of prospective teachers. This underscores the importance of enhancing assessment literacy among educators as a means to improve overall educational outcomes.

Blended Learning

Technology has become indispensable in education, making it crucial for every teacher to acquire and master the knowledge and skills

necessary for its effective use. Using technology in education has revolutionized traditional teaching methods, offering numerous benefits and opportunities for both educators and learners. Technology enhances the learning experience by providing access to a wealth of information, fostering collaboration, and personalizing instruction to meet diverse student needs. Blended learning is an example of teaching methods that depend on using technology in education. Blended learning integrates the benefits of traditional classroom teaching and technology-supported offline and online learning. It facilitates collaborative and constructive learning experiences (Lalima & Dangwal, 2017).

According to Garrison and Vaughan (2008), blended learning integrates various learning environments to optimize the learning experience, offering a student-centered, flexible approach that combines face-to-face interaction with self-paced, technology-based instruction. It provides flexible and multifaceted approach to the learning and teaching process.

Graham (2006) emphasized that the core of blended learning lies in the effective combination between traditional classroom teaching (face-to-face) and technology-enhanced instruction. It goes beyond simply using technology for its own sake but it seeks to find better ways to support students to achieve learning outcomes. It also supports and facilitates teachers in their administraive roles.

Bailey and Martin (2013) highlighted that blended learning enables learners to engage visually, auditorily, tactically, and interactively with learning materials, facilitating the transition from theoretical knowledge to practical contexts. This approach supports personalized learning by enabling students to progress at their own rate. High achievers can widen their learning experiences beyond the curriculum, while slower learners can benefit from revisiting content and receiving personalized feedback to overcome challenges they face.

According to Chen and Jones (2007), blended learning enhances learners' comprehension of the covered topics by utilizing web-based resources and promoting active information sharing among students in the classroom. It allows students to access real-world resources that provide authentic information and facts, enabling them to inquire about processes and delve into details effectively. This approach encourages deeper understanding and engagement with the subject matter. Kelly (2019) viewed that blended training enables a person to complete knowledge-based modules online (on their own time & schedule as its self-paced), and

therefore reduce the time traditionally spent in the classroom, but it also improves learning effectiveness as each learner is better prepared for the classroom environment.

Blended learning integrates the strengths of both online and face-to-face learning approaches, harnessing the strengths of each. From traditional classroom instruction, it adopts the teacher-led presentation and selection of pertinent content, as well as the social interaction and dialogue between students and teachers. From online learning, it benefits from the flexibility and self-paced nature of learning. This hybrid approach aims to optimize the learning experience by integrating diverse learning methods to suit varying educational needs and preferences. It empowers students with more control over their learning experiences, enhances communication and offers remarkable flexibility. Wingard (2004) also demonstrated that blended learning not only boosts interaction among students, and between the teacher and students but also enhances overall level of students' learning.

Many studies have validated the effectiveness of blended learning in in-service teacher training programs. For example, *Holmes, Polhemus, and Jennings (2005)* analyzed a blended in-service professional development program for K-6 teachers that focused on integrating technology into teachers' practices. Results revealed that the blended approach successfully introduced teachers to cost-effective and efficient technologies, fostered the creation of a supportive learning community, and promoted teachers' autonomy and independence in their professional development.

Owston, Sinclair, and Wideman (2008) documented that a blended learning program designed for middle school mathematics and science teachers had a positive impact on teachers' attitudes and knowledge. It enhanced teachers' attitudes and deepened their content knowledge in specific curricular topics. Participants were motivated to apply their knowledge in transforming their classroom practices. As a result, there was a noticeable improvement in students' attitudes towards these subjects, reflecting the effectiveness of blended learning in influencing both teacher practices and student outcomes.

Fan and et.al (2011) conducted research on the impact of a web-based model, named 'Practicing, Reflecting, and Revising with Web-based Assessment and Test Analysis system (P2R-WATA) Assessment Literacy Development Model on secondary in-service teachers' assessment knowledge and perspectives. The study used a single group experimental design, the study provided teachers with a web-based system (WATA) that offered personalized learning resources and practical experiences in

assembling, administering tests online, and analyzing test-related statistical data. Results indicated that assessment knowledge of the participants improved significantly after training, particularly among teachers who initially had lower levels of prior knowledge. Results also revealed that there was a notable enhancement in teachers' assessment perspectives as a result of the intervention. To sum up, the study confirmed the effectiveness of the P2R-WATA model in enhancing both the assessment knowledge and perspectives of secondary in-service teachers, highlighting the value of integrating web-based tools for professional development in assessment literacy.

Backward Design Model (UbD)

Considering assessment at the beginning of the planning process is one of the most essential aspects for defining the desired learning outcomes, which subsequently guides the choice of appropriate learning activities. This approach is often referred to as curriculum planning through reverse engineering. This approach forms the core of the Backward Design model, also known as Understanding by Design (UbD). This model was introduced by Grant Wiggins and Jay McTighe (Wiggins & McTighe, 1998).

Backward design represents an innovative approach to curriculum development and lesson planning, challenging traditional methods. In traditional planning, educators typically select a list of content to teach. In contrast, backward design begins with identifying learning goals, followed by the design or selection of assessments that align with those goals, and finally the development of lesson plans (Wiggins & McTighe, 1998). In this approach, the destination is chosen first and then the map is used to guide the trip to the desired destination. It is a methodology that emphasizes the prioritization of end goals (McTighe & Thomas, 2003).

McTighe and Wiggins (2004) defined Backward Design as:

"A process to designing curriculum by beginning with the end in mind and designing toward that end. In backward design, one starts with the end—the desired results (goals or standards)—and identifies the evidence necessary to determine that the results have been achieved, that is, the assessments. With the results and assessments clearly specified, one can determine the necessary (enabling) knowledge and skill, and the teaching needed to equip students to perform." (p. 290)

According to Buhel (2001), Backward Design offers several advantages. One significant benefit is that students using this approach are less likely to become overwhelmed by the minute details of a unit, enabling

them to grasp the fundamental purpose of studying the original topic. Instruction in the Backward Design model emphasizes overarching understandings rather than just focusing on daily activities. Daily lesson plans are crafted with a clear focus on the ultimate objectives or the overall "gain" that students are expected to achieve by the end of the unit.

In the Backward Design model, assessment is prioritized before lesson planning. This strategic approach ensures that instruction is purposefully directed towards guiding students to acquire the essential knowledge and skills they need. By designing assessments first, educators can tailor their teaching methods and activities to align closely with the desired learning outcomes, thereby enhancing the effectiveness and relevance of the instructional process (Buhel, 2000).

Understanding by Design (UbD) encourages teachers to structure their teaching around writing clear objectives, developing appropriate assessment tools, and designing learning activities aligned with educational standards. This approach helps educators connect their instructional goals with specific learning activities and materials, demonstrate mastery of content, and employ diverse teaching methodologies (Kelting-Gibson, 2005). Reynolds and Kearns (2017) highlighted that UbD empowers teachers to prioritize essential concepts, effectively manage instructional time, alleviate student anxiety, promote student engagement, and provide meaningful feedback.

Backward design has proven to be valuable in retraining teachers to develop curriculum that supports scaffolded learning. According to Wiggins and McTighe (2006), teachers must first establish what they want their students to learn before planning how to teach it. This approach prioritizes learning outcomes and assessment. In the backward design framework, teachers are viewed as designers who meticulously craft the curriculum and learning experiences to achieve specific educational goals. They also play a crucial role in designing assessments that identify student needs, guide their instruction, and enable both teachers and students to assess goal attainment. When designing a course using backward design principles, teachers should consider student interests, developmental stages, class size, and prior achievements. These factors shape decisions regarding learning activities, assignments, and assessments (Wiggins & McTighe, 2006).

Backward Design (Wiggins & McTighe, 2005) consists of three stages. They are as follows:

Stage 1: Identify desired results. Within stage one, teachers ask themselves an essential question, teachers pose a fundamental question: "By

the end of this instructional unit, what should students comprehend and be able to do?" This important inquiry underscores the central focus of designing educational experiences around specific learning outcomes (Wiggins & McTighe, 2005).

Stage 2: Determine acceptable evidence. Stage two focuses on determining acceptable evidence of student understanding and achievement. During stage two, teachers ask themselves, "How will I determine if students have attained the desired outcomes of the unit?" This stage occurs before planning daily instruction and involves selecting and designing assessments that aligned with specific standards. Assessment methods may encompass authentic performance tasks, criterion-based tools, formative feedback from students, and opportunities for students to self-assess their progress. These assessments are essential for evaluating whether students have successfully achieved the intended learning objectives of the unit (Wiggins & McTighe, 2005).

Stage 3: Plan learning experiences and instruction. This stage entails planning learning experiences and instructional activities. Teachers address the essential question, "How can instruction effectively facilitate students in achieving the desired outcomes of the unit?". This question prompts educators to strategically plan and implement instructional strategies that align closely with the intended learning objectives of the unit. This stage revolves around developing standards-based lesson plans that actively engage students and facilitate their progress toward achieving the identified learning outcomes.

To sum up, Backward Design guides educators through a systematic process where the curriculum is structured around clear learning goals (Stage 1), assessment is aligned with those goals (Stage 2), and instructional activities and strategies are designed to effectively support student attainment of those goals (Stage 3). This approach ensures that teaching and learning activities are purposefully directed towards meaningful student outcomes.

Graff (2011) investigated the effectiveness of Backward Design (Wiggins & McTighe, 2005) on teachers' practices in an undergraduate Curriculum and Instruction education course from 2004 to 2006. Results showed that 65% of participants reported that Backward Design helped them in planning instruction. Additionally, new teachers found that planning with the end goals in mind assisted them in designing and evaluating instructional strategies. Overall, the study demonstrated that Backward

Design contributed to the preparedness of pre-service teachers in planning effective instruction.

Yuurtseven and Altun (2016) conducted an action research study to examine how Understanding by Design (UbD) influences teachers' professional development and students' achievement. Teachers received training and collaborated in groups to create and implement units using UbD principles. Qualitative data, including unit designs and individual interviews, were collected alongside with quantitative data from English achievement scores. Results suggested that action research-based on UbD principles significantly enhanced both teachers' professional growth and students' English achievement.

Hosseini et al. (2019) conducted a study with dual objectives. Firstly, they aimed to assess whether applying the backward design model had a notable impact on enhancing the writing skills of Iranian intermediate English as a Foreign Language (EFL) learners. Secondly, the study aimed to compare the effectiveness of backward design against conventional forward models in improving the writing ability of Iranian EFL learners. The findings indicated that while the backward design teaching approach did not demonstrate statistically significant superiority over traditional instruction in terms of improving the second language (L2) writing ability of Iranian EFL learners, it was pedagogically and significantly more effective than conventional forward models in enhancing their writing skills. This suggests that while there may not have been a statistical advantage, the backward design approach was deemed more beneficial from a teaching and learning perspective.

Background of the problem Pilot study

The researcher conducted a pilot study to determine EFL in-service teachers' level of satisfaction with their knowledge about language testing and assessment related topics. The researcher adapted Flucher's assessment literacy questionnaire (2012). The questionnaire was applied to 20 EFL inservice teacher. The following table shows the results of the questionnaire:

Table (1): EFL in-service teachers' level of satisfaction about their knowledge of the term 'assessment'

satisfaction language testing and assessment related topics	Fre	atisfied										
and assessment related	Fre	0./					dissatisfied Very dissatisfied		Total			
and assessment related		%	Fre	%	Fre	%	Fre	%	Fre	%	Fre	%
tonics												
1. Design of language	2	10%	3	15%	2	10%	5	25%	8	40%	20	100%
assessment for speaking												
and listening				400/	_			100/				10001
2. Design of language	1	5%	2	10%	3	15	8	40%	6	30	20	100%
assessment for reading												
and writing	1	50/	2	1.50/	2	1.00/	7	250/	7	2.50/	20	1000/
3. Writing test specifications/ blue prints	1	5%	3	15%	2	10%	/	35%	7	35%	20	100%
4. Writing test tasks and	4	20%	1	5%		_	8	40%	7	35%	20	100%
items	4	20%	1	3%	-	-	δ	40%	/	33%	20	100%
	3	15%	2	10%	2	10%	6	30%	7	35%	20	100%
critiquing language tests	3	1370	2	1070	2	1070	O	30%	/	3370	20	100%
6. Interpreting and	2	10%	3	15%	1	5%	8	40%	6	30%	20	100%
analyzing test scores	2	1070	3	13/0	1	3 /0	o	4070	U	3070	20	10070
7. Selecting tests for your	5	25%	2	10%	2	10%	5	25%	6	30%	20	100%
own use	5	2370	ľ	1070	~	1070		2370		3070	120	10070
8. Reliability of tests	2	10%	2	10%	_	_	6	30%	10	50%	20	100%
	3	15%	2	10%	1	5%	3	15%	11	55%	20	100%
10. Use of basic statistics	-	-	2	10%	3	15%	9	45%	6	30%	20	100%
11. Scoring closed-	6	30%	4	20%	3		2	10%	5	25%	20	100%
response items												
12. Scoring open-	4	20%	3	15%	2	10%	6	30%	5	25%	20	100%
response test tasks												
13. Test- taking skills and	3	15%	4	20%	1	5%	5	25%	7	35%	20	100%
strategies												
14. Test administration	3	15%	4	20%	2	10%	3	15%	8	40%	20	100%
and accommodation									ļ			
15. Ethical consideration	2	10%	3	15%	4	20%	9	45%	2	10%	20	100%
in testing									_			
16. Principles of	1	5%	5	25%	1	5%	5	25%	8	40%	20	100%
educational measurement			2	1.00/	_	1.00/	1.0	500/	-	200/	20	1000/
17. Rubric development	-	-	2	10%	2	10%	10	50%	6	30%	20	100%
18. Alternative	2	10%	1	5%	3	15%	9	45%	5	25%	20	100%
performance assessment 19. Contrast between	1	5%	4	20%	-	_	8	40%	7	35%	20	100%
19. Contrast between summative and formative	1	370	4	20%	-	-	0	40%	<i>'</i>	33%	20	100%
assessment												
20. Norm- referenced vs.	3	15%	3	15%	1	5%	6	30%	7	35%	20	100%
criterion referenced		10,0	آ	1270	1	2,0	ľ	15070	ľ	15570	1-	100/0
testing												
Total	48	12%	55	13.7	35	8.8	128	32%	134	33.5	400	100%

Table (1) shows that the highest percentages go to levels of dissatisfaction. Teachers are very dissatisfied with their knowledge about language testing and assessment related topics with a percentage of 33.5%. 32% of teachers were dissatisfied with their knowledge of assessment.

Teachers are very satisfied with a percentage of 12%. They are satisfied about their knowledge regarding assessment related topics with a percentage of 13.7%. This clarifies that most of teachers are generally dissatisfied with their knowledge about language testing and assessment related topics.

Statement of the problem

Based on the pilot study results, the review of literature, the researcher experience, The problem of the study was stated as follows:

"EFL in-service teachers are in need of improving their assessment literacy to be able to assess their students' learning and take appropriate instructional decision. Therefore, the researcher uses a blended backward design model training program to improve EFL in-service teachers' assessment literacy."

Questions of the Study:

The study was an attempt to answer the following questions:

- 1. What are the assessment knowledge and skills that should be mastered by EFL in-service teachers to be assessment literate?
- 2. What are the features of the proposed training program for enhancing EFL in-service teachers' assessment literacy?
- 3. What is the effect of the proposed training program for enhancing EFL in-service teachers' assessment literacy?

The Purpose

The main purpose of this study was to improve EFL in-service teachers' assessment literacy knowledge ans skills.

Significance

The significance of the current study is based on the following considerations:

- 1. It enriches literature with this study concerning using a training program based on blended learning backward design model in enhancing EFL inservice teachers' assessment literacy and its impact on their pupils' language proficiency.
- 2. It provides EFL teachers with a teacher guide on how to use different and appropriate assessment tools in their class through using the proposed program.
- 3. It directs the attention of in-service teacher professional development programs to the importance of assessment as an integral part of teacher professional growth.

Delimitations

The study was delimited to:

- (1) Some of the most important assessment skills (knowledge and performance aspects) that should be mastered by EFL in-service teacher by the end of the program.
- (2) A sample of 25 EFL in-service teachers from language schools of the Ministry of Education.

Hypotheses

The present study tested the following hypotheses:

- 1. There is a statistically significant difference between the mean score of research group teachers on the pre and post administration of assessment literacy test at 0.05 level in favor of the post administration.
- 2. There is a statistically significant difference between the mean score of research group teachers' pre and post administration of the observation checklist at 0.05 level in favor of the post administration.

Methodology

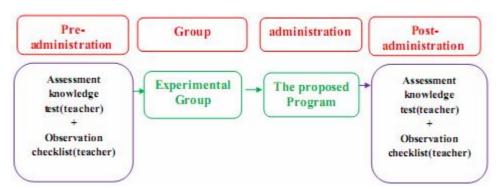
Participants

The participants of this study were 25 EFL in-services teachers (10 males and 15 females). Their experience ranged between 2:5 years of experience.

Design

The quasi-experimental design using one research group was employed to assess the impact of the proposed program on enhancing EFL teachers' assessment literacy. The adopted quasi-experimental design (see figure 1) in this study (pre-post test) was as follows:-

Figure (4)
The quasi-experimental design of the study



The present study employed the following instruments:

- 1- An assessment literacy questionnaire to determine the aspects that should be mastered by EFL in-service teachers' in assessment literacy.
- 2- A pre- posttest assessment knowledge test to assess EFL in service teachers' assessment literacy.
- 3- An observation checklist to monitor EFL in-service teachers' assessment performance inside the class.

Procedures

To answer the research questions, the following procedures were adopted: -

- 1. Reviewing related literature and previous studies concerning the main domains of the study: blended learning, backward design model, assessment literacy.
- 2. Preparing a list of the most important assessment skills necessary for EFL teachers.
- 3. Presenting the list to a group of specialists to determine the degree of importance of each assessment skill.
- 4. Designing the proposed training program and presenting it to a group of jurors to determine its suitability in developing EFL in-service teachers' assessment literacy.
- 5. Preparing the program in its final form.
- 6. Preparing the study instruments (assessment literacy questionnaire, assessment literacy test, observation checklist).
- 7. Establishing validity and reliability.
- 8. Administering the instruments of the study to the research group before applying the proposed training program.
- 9. Implementing the proposed training program.
- 10. Administering the instruments of the study to the study group after applying the proposed training program.
- 11. Collecting data and analyzing it statistically using suitable statistical methods.
- 12. Analyzing, discussing and interpreting results

Definition of terms

Assessment literacy

Assessment literacy refers to having theoretical and practical knowledge, as well as overall competency in all aspects related to assessing students' learning. These aspects may include designing, administering, grading, evaluating, and understanding the impact of different types of assessments, whether for classroom use or large-scale evaluations (Herrera & Macías, 2015).

Malone (2013) defined LAL as "language teachers' familiarity with testing concepts and their application in classroom settings, focusing specifically on issues related to assessing language (p. 329)

Assessment literacy is operationally defined in the present study as the essential assessment related knowledge and skills that EFL teachers need to have to be able to assess their students' achievement and performance and interpret the results of assessment to take appropriate instructional decision to improve student learning and guide instruction.

Blended learning

According to Krasnova (2015), viewed blended learning as a method of teaching that integrates effective face-to-face teaching techniques with online interactive collaboration. These components operate in constant correlation, forming a cohesive educational system.

Dangwal and Kiran (2017) described blended learning as an innovative concept that combines the benefits of traditional classroom teaching with ICT-supported learning. This approach incorporates various instructional methods such as direct instruction, indirect instruction, collaborative teaching, and individualized computer-assisted learning, encompassing both offline and online modalities.

Blended learning is operationally defined in the current study as an approach to teaching and learning that combines traditional face-to-face instruction and technology-based instruction to achieve better learning experiences.

Backward design model

Wiggins and McTighe (1998) described Backward design as an educational curriculum approach where goals are established first, followed by the selection of different assessment forms, then choosing learning experiences. This method involves three primary steps: identifying the desired outcomes, specifying the evidence that validates these outcomes, and then planning learning activities that facilitate the achievement of these desired outcomes.

Bowen (2017) described backward design as an instructional approach where instructors prioritize defining the learning goals of the course initially. These goals encompass the specific knowledge and skills that instructors intend for their students to acquire by the conclusion of the course. Once these learning goals are established, the subsequent stage involves planning assessments. According to the backward design framework, instructors are advised to first determine these central learning goals and then outline how students will be assessed, before planning the instructional methods and content delivery. This methodology ensures that teaching strategies and content are directly aligned with the desired learning outcomes and assessments, thereby optimizing the educational experience for students.

Backward design model is operationally defined in the present study as a model for designing instructional materials which begins with the end goals in mind instead of starting with the content or instructional activities. It encourages thoughtful consideration of assessment methods as a basis of the design which leads to more effective teaching and deeper student understanding. Assessment serves as a pivotal component in shaping the entire instructional process. It has three main steps. It starts with focusing on the desired results of instruction followed by determining the acceptable learning evidence (assessment), then planning learning experiences and instruction.

Statistical Analysis and Results

The results of the research are discussed in the light of the statistical analysis of each instrument. A discussion of the results is provided after each statistical analysis as well as a discussion of the overall results.

Results of the Statistical Treatment

To investigate the change fostered by the implementation of the proposed program employing Blended Backward Design Model Based Program on EFL in-service teachers' assessment literacy. The following section tests each hypothesis individually.

Testing the Hypotheses

Hypothesis One

"There is a statistically significant difference between the mean score of research group teachers on the pre and post administration of assessment literacy test at 0.05 level in favor of the post administration".

For verifying this hypothesis, paired Samples t-test was used to compare the mean scores of the research group teachers' assessment literacy on the pre-post assessment knowledge test. The results are documented in table (2)

Table (2)
Comparing the research Group Assessment Literacy on Pre/Post
Assessment Knowledge Test

Test	Group	N	Mean	S. D.	t-test for Eq Mean			
Domains	-				t	df	Sig.	
Knowledge	Pre - test	25	8.600	1.118				
Timowieage	Post – test	25	15.440	2.274	-15.209	24	0.05	
Skills	Pre - test	25	8.080	1.681	-12.937	24	0.05	
	Post – test	25	15.760	3.031	-12.937	24	0.03	
Total	Pre – test	25	16.720	2.282			0.05	
1 Otal	Post – test	25	31.200	4.761	-16.866	24	0.03	

Results in table (2) reveal that there is a statistically significant difference between the mean scores of the research group teachers in the pre and post administration of assessment knowledge test dimensions and the total score in favor of the post application (the highest average), where all the values of (t) are statistically significant at the level of significance (0.05) and the degree of freedom (24).

Estimating the Effect Size $(\eta 2)$

To calculate the effect size of the proposed blended backward design program on teachers' assessment literacy, the square of Eta (η^2) was estimated from the *t*-value. Results are presented in table (3).

Table (3)
The effect size of the treatment on EFL in- service teachers' assessment literacy

Test dimensions	η2	Effect Size
Knowledge	0.906	High
Skills	0.875	High
Total	0.922	High

Table (3) shows the impact of the proposed blended backward design model program on the total score of testing assessment literacy knowledge and skills, as the values of (η 2) in each skill and the total score of the test ranged between (0.875 and 0.922). Results shown in table (3) indicate the effect sizes of the proposed learning program on the research group participants assessment knowledge test results and its components are high. These results can be interpreted in the light of (\Box 2) values as follows:

- 1 .The total variance in EFL in-service teachers' assessment knowledge is 90.6%. This can be attributed to the high effect size of the proposed program .
- 2 .The total variance in EFL in-service teachers' assessment skills is 87.5%. This can be ascribed to the high effect size of the proposed program.
- 3. The total variance in the assessment knowledge test as whole is 92.2%. This can be attributed to the independent variable (blended backward design model) and this indicates the great impact of the proposed program.

Hypothesis Two

"There is a statistically significant difference between the mean score of research group teachers pre and post administration of the observation checklist at 0.05 level in favor of the post administration".

To verify this hypothesis, both the pre and post results of the research group participants assessment performance observation were statistically analyzed as shown in table (4).

 Table (4)

 Comparing the research Group Pre/ post results in the observation checklist

Observation Domains	Group	N	Mean	S. D.	t-test for Equality of Means			
Domains					t	df	Sig.	
Teacher's activities	Pre	25	7.040	2.009	-10.330	24	0.05	
prior instruction	Post	25	10.920	2.481				
Teacher's activities	Pre	25	17.600	2.549	-27.263	24	0.05	
during instruction	Post	25	29.760	3.961				
Activities occurring	Pre	25	7.680	1.886	-9.608	24	0.05	
after instruction	Post	25	11.680	2.055	-9.008			
Total	Pre	25	31.840	3.955	-23.766	24	0.05	
	Post	25	51.480	5.355	-23.700			

Results in table (4) demonstrated that there are statistically significant differences between the mean scores of the research group before and after the application of the observation checklist, favoring the post application (the highest average), where all values of "t" are statistically significant at 0.05 level of significance. These results are consistant with the second hypothesis and confirm its validity. The researcher attributes these differences to the proposed program.

Estimating the Effect Size $(\eta 2)$

To calculate the effect size of the proposed program, the square of Eta (η^2) was estimated from the *t*-value. Results are presented in table (5).

Table (5)
The effect size of the proposed program on EFL in-service teachers' assessment performance

Observation Domains	η²	Effect size
Teacher's activities prior instruction	0.816	High
Teacher's activities during instruction	0.968	High
Activities occurring after instruction	0.794	High
Total	0.959	High

Results indicated that the effect size of the proposed program is high in the sub-dimensions of the observation checklist. Results showed that all the $\eta 2$ values are of high effect (0.816, 0.968, 0.794). It is also evident that the total effect size of the proposed program on teachers' assessment

performance inside the class is high (0.959). These results can be interpreted in the light of (\Box^2) values as follows:

- 1. In teacher's activities prior instruction, the value of Eta square was (0.816) which indicates a high effect size and it also indicates that 81.6 % of the variance in teacher's assessment performance and activities prior instruction can be attributed to the experimental treatment.
- 2. In teachers' activities during instruction, the value of Eta square was (0.968) which indicates a high effect size and it also indicates that 96.8 % of the variance in teachers' assessment performance and activities during instruction can be attributed to the proposed program.
- 3. In teachers' activities after instruction, the value of Eta square was (0.794) which indicates a high effect size and it also indicates that 97.4 % of the variance in teachers' assessment performance and activities after instruction be attributed to the experimental treatment.
- 4. The overall score of the assessment performance observation checklist and its sub-dimensions, the values of $(\eta 2)$ was 0.959. This means that 95.9% of the total variance in teachers' assessment performance can be attributed to the proposed program.

These results indicate high percentages which reflect high variance because they are higher than the minimum limit percentage (80% > 15%). (Abo-Hatab & Sadek, 1991)

Based on the results of the *t*-test shown in the previous tables and the results of the effect size shown in table (5) and table (3), the hypotheses of the study are consequently accepted.

In addition to the statistical/quantitative results, the following qualitative analysis could be revealed:

The clear and systematic stages of the proposed program based on blended backward design model helped the research group participants to follow the instructor and to know exactly what they were supposed to do in each stage. Research group participants were given the chance to ask questions, get feedback and share their experience in a rapport atmosphere. This, in turn, provided the opportunity for the researcher to observe the participants' needs and how they reacted to the various topics. These observations led to the following qualitative results:

- The research group participants paid more attention to the sessions where they worked on the activities and tasks. They actively cooperated with their peers. They were more enthusiastic in discussing their performance tasks during and after the sessions.
- Another significant result during the implementation of the proposed

program was that research group participants shared their points of strength through helping each other and making good use of their experience.

• The research group participants enjoyed the performance tasks in each session because most of these tasks focus on the practical aspects of assessment. They became more engaged in the program content as they used what they have learned in their actual classroom practices.

The results discussed above reveal that there is an obvious improvement in the identified assessment literacy knowledge and skills of the research group after the administration of the proposed program; Blended Backward Design Model program.

Discussion of Results

The results discussed above indicate that there is an obvious improvement in assessment literacy identified knowledge and skill and assessment performance of the research group participants on the post administration of the proposed program. The results of the present study revealed that:

- 1. There is a statistically significant difference between the mean score of research group teachers on the pre and post administration of assessment literacy test at 0.05 level in favor of the post administration.
- 2. There is a statistically significant difference between the mean score of research group teachers' pre and post administration of the observation checklist at 0.05 level in favor of the post administration.

Results shown above indicate that the difference between the teachers' mean scores in each part of the assessment knowledge test and the observation checklist is significant at 0.05 level. It is obvious that the teachers have achieved greater improvement in the targeted skills in the post administration. This can be attributed to the proposed program as well as the nature of using backward model which makes learning experiences focused and concentrated. The overall improvement of teachers' performance can be attributed to their interest and awareness of the importance of assessment in their career as teachers.

Based on the obtained results, it was concluded that the proposed program has had appositive effect on developing EFL in-service teachers' assessment literacy and their pupils' language proficiency. This was an indication to the effect of the proposed program on improving the research group participants' targeted skills. In addition, the experimental participants' overall development was satisfactory. For this reason, the study joins and

adds to the other studies that have explored similar approaches for developing EFL teachers professionally. The obtained results of this study revealed that they are consistent with those of numerous related studies and supported by a specific theoretical background that emphasizes the importance of assessment in teaching and learning process.

The results of this study go along with the results of the studies conducted by Gohar (2014), Graff (2011), Yurtseven and Altun (2015), Dialing (2016), Jozwik & et al. (2017), Almasaeid (2017), Hosseini et al. (2019), Ozan (2019) and Al-Tonsi (2019), Rupley and Lumbreras (2020), who concluded that backward design has a positive effect on enhancing teachers' professional development and students' achievement.

Additionally, the results of this study are consistent with the results of the studies conducted by Shih (2010) Fan et.al (2011), Larsen (2012), Acree et.al (2017), Ghazizadeh and Fatemipour (2017), Sulam and Rojas (2020) and Senturk (2021) who examined how BL is effective in enhancing teachers' professional development and students' achievement.

The results of the study are congruent with other studies conducted by Khademi and Mellati (2018), Hussain, Kayani and Aktar (2018), Yastıbas and Takkac (2018) who concluded that teachers' assessment literacy has a positive effect on their students' achievement and performance.

To sum up, the previous discussion and interpretation revealed that all hypotheses of this research were accepted and proved that blended backward design has had a beneficial effect on developing the experimental group teachers' assessment literacy and teachers' assessment literacy.

Findings

The present study reached the following findings:

- The targeted assessment literacy knowledge and skills were needed for the study participants. Therefore, it was necessary to develop such skills
- The proposed blended backward design model has a positive effect on developing EFL in-service teachers' assessment literacy knowledge and skills.
- The proposed blended backward design program has a positive effect on teachers' assessment performance inside the classroom.

Conclusions

 Based on the observed results of the present study, it was concluded that the proposed blended backward design program has had a high positive effect. Therefore, the study joined and added to the validity of other studies that have investigated similar approaches for developing teachers professionally.

- The proposed program appealed to the experimental participants' interests, fields of specialization and professional development goals. It provided them with the opportunity to learn according to their own path and to learn by doing through hands-on activities which resulted, in turn, in improving their performance and reflectivity.
- The proposed program proved to be helpful in contextualizing EFL inservice teachers' assessment literacy in general. Besides, it proved to be successful in making the experimental participants reach a high level of being able to assess and evaluate their pupils through various activities which enabled them to think critically and reflectively about assessment
- Google Classroom facilitates communication between the researcher and participants, allowing for timely feedback and support. It enables the researcher to organize, share resources, and provide feedback, fostering a more efficient and collaborative learning environment. The participants benefit from easy access to assignments, announcements, and class materials, promoting greater autonomy and organization in their studies.

Recommendations of the Study

With reference to the experimental evidence provided throughout the present study and its conclusion, the following recommendations were suggested:

- Using the proposed program as a medium to develop EFL in-service teachers' assessment literacy.
- Applying the proposed program content to student-teachers studying at Faculty of Education.
- Including assessment courses in EFL teachers' preparation programs.

Suggestions for Further Research

In the light of the previous recommendation, the following suggestions can be considered for future research:

- Using the proposed blended backward design program to develop preservice teachers' assessment literacy.
- Studying the impact of teachers' assessment practices on their students' achievement in different subjects.
- Investigating the effect of assessment techniques and developing students' higher thinking skills.

- Evaluating teacher preparation courses to explore whether or not they provide prospective teachers with necessary assessment knowledge and skills.
- Investigating the effectiveness of blended backward design model in improving teachers' teaching skills and their attitudes towards teaching EFL.

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