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# Paper assessment or online assessment: exploring the impact of assessment modes on EFL students' language learning outcomes and personal development

Barno Sayfutdinovna Abdullaeva<sup>1\*</sup> , Fidel Çakmak<sup>2</sup>  and Diyorjon Abdullaev<sup>3</sup> 

\*Correspondence:  
editor1001@gmail.com; barno.sa2024@gmail.com

<sup>1</sup> Tashkent State Pedagogical University, Tashkent, Uzbekistan

<sup>2</sup> Department of Foreign Language Education, Alanya Alaaddin Keykubat University, Antalya, Turkey

<sup>3</sup> Department of Scientific Affairs, Urganch State Pedagogical Institute, Urgench, Uzbekistan

## Abstract

This research explores how paper and online assessments (OA) can affect EFL learners' personal development variables such as self-esteem, mindfulness, demotivation, and language learning development. Sixty intermediate English as a foreign language (EFL) students participated in the current research and were randomly grouped into the experimental group (EG) and the control group (CG). Before the intervention, the data collection tools assessing language learners' self-esteem, mindfulness, demotivation, and language learning development were administered as pre-tests to all the participants. Subsequently, the EG was taught all lessons of the coursebook, Top Notch 2, by utilizing OA while the CG was taught the identical lessons using a conventional (pen and paper) assessment. In the post-treatment phase, the two groups completed the post-tests on self-esteem mindfulness, demotivation, and language learning progress. The study demonstrated that the EG group outperformed the CG group on the four post-tests. The findings indicate that the intervention of OA significantly enhanced language learning outcomes and psychological well-being regarding the measured personal development variables. The enhanced efficacy in the EG group can be ascribed to the utilization of OA during the treatment phase, which has a beneficial effect on academic and personal development. This study also posits that integrating OA augments psychological engagement and language development among EFL learners. It highlights the implications of the results associating teaching EFL via OA with the observed personal development aspects and attributes them to effects of positive psychology.

**Keywords:** Online assessment, Pen-and-paper assessment, Learners' self-esteem, Growth mindfulness, Demotivation, EFL

## Introduction

The research has given a lot of attention to how assessments affect instruction and learning (Coombe et al., 2020; Johnson & Shaw, 2019). Assessment pertains to exams and tasks which evaluate students' performance to determine if they pass the entire subject or just a portion of it. But this goes beyond just giving students grades, diplomas, or

any other kind of recognition when it comes to exams. With the emergence of more advanced learning tools, language learning and assessment have become more popular in online education. The growing utilization of advanced learning technologies has greatly impacted the implementation of language assessment, emphasizing the dynamic relationship between assessment techniques and language learning results. The subject of online assessment's impact is significant in this quickly evolving world, as many experts contend that assessment and language learning processes are causally related. As educators progress from conventional to digital methods, it is crucial to analyze how these new technologies are changing assessment procedures and how they impact outcomes, especially in comparison to conventional offline methods such as pen-and-paper examinations (Daniels et al., 2019; Galikyan et al., 2019; Gedil & Aydın, 2023). The change can manifest itself in a distinct way in an online vs non-OA (generally pen-and-paper type) environment. OA refers to “be any means of evaluating student achievement, providing feedback, or moving the students forward in their learning process in fully online credit courses. These assessments can be completely online (such as online exams) or just require online submission (such as essays) (Weleschu & Dyjur, 2019, p. 5)”. This kind of assessment has appeared in response to the increased demand for OA to comply with the evolving requirements of the educational environment in the digital era (Ndibalema, 2021; Shah & Anshu, 2024). Non-OAs, on the other hand, could refer to the conventional oral and pen-and-paper in class examination (Perry et al., 2022).

Numerous advantages and difficulties have been noted from in-depth analysis of the research literature on the implementation of OA in educational settings. Spivey and McMillan (2014) stated potential benefits, justifying its effectiveness in terms of improved student performance and their efforts to access available resources. They listed five benefits: First, the exam may be administered in flexible testing cycles thanks to online evaluation and multiple-choice format. Second, matching questions can have their response sets and question orders dynamically randomized by online software. Third, there are many kinds of feedback that may be given, including test results, test results with precise answers, and test results with thorough solutions. Fourth, instructors also have the authority to decide how and when feedback is supplied (for example, instantly, at a specific time after every question has been answered, etc.). Fifth, the preferred online testing systems may be configured to provide hints or prompts about where in the book or course notes support for a particular question can be found (Soffer et al., 2017). In a similar vein, Mohamadi (2018) contends that improving language learning outcomes may be achieved by the successful integration of technologies and techniques with suitable affordances such as OA tools.

It is crucial to consider that integrating technology and evaluative methods in education such as OA can enhance learning processes and outcomes (Johnson & Shaw, 2019). However, a more comprehensive approach involves considering whether learning outcomes assessed through OA tools and systems interact with learners' language and personal development such as self-esteem, mindfulness, and attenuate demotivation. Self-esteem is commonly seen as the evaluative component of self-awareness that indicates the degree to which individuals have a positive self-perception and confidence in their abilities (Zeigler-Hill, 2013). It focuses on the learner's perceptions of their own strengths and qualities. Similarly, Richards and Schmidt (2002) defined self-esteem as

an individual's assessment of their value or worth, predicated on a sense of "efficacy," or effectiveness with their own surroundings. They also emphasized the possibility of a favorable correlation between the achievement level in a second language and self-esteem (Azmand, 2014). Some other researchers have also investigated the correlation between self-esteem and language proficiency in relation to language abilities and found that self-esteem positively affected the language learning. (Famarzzadeh & Amini, 2017; Kardaş, 2020).

In addition to self-esteem, using OA can affect EFL learners' mindfulness. The Sanskrit term "Smṛti," which means "something remembered," is where the idea of mindfulness first emerged. Langer (1990) stated that students who practice mindfulness may develop into creative, open-minded thinkers who can observe the world from a variety of angles. Therefore, in the field of education, it is recognized that practicing mindfulness has a positive impact on students' physical and psychological well-being (Brown & Ryan, 2003; Rezai et al., 2024). As for the field of ELT, Wu and Zhao (2023) described mindfulness as paying conscious attention to fleeting thoughts, emotions, and behaviors by integrating intention, attention, and attitude. They presented significant evidence of the positive impact of mindfulness on lowering burnout and increasing engagement and the students' emotionally regulated presence, which is considered crucial for EFL learning. For example, studies have shown that mindfulness training has enhanced learners' performance in the context of foreign language learning (Erdemir et al., 2024; Ghanizadeh et al., 2019; Sheikhzadeh & Khatami, 2017).

The other personal development variable that can be influenced by OA is the demotivation of EFL learners. Demotivation in the language learning process can be related to a variety of causes. According to Quadir's (2017) review of the literature, a large number of researchers link demotivation to both external and internal factors, such as teaching strategies, students' competence, school resources, textbooks, and specific classroom activities. Internal factors include self-efficacy, personality, and attitudes towards the target language and culture. According to Dörnyei and Ushioda (2021), demotivation can also be attributed to "factors in the social learning environment, such as the personality and attitude of the teacher or classroom counter-cultures and peer pressures" and "particular learning-related events or experiences, such as performance anxiety, public humiliation, heavy work demands or poor test results" (p.148). Dörnyei (2001) asserts that demotivation can result from a variety of circumstances and weakens the motivation behind a behavior or activity, thus affecting the overall performance of learners. A student who was before motivated but has lost all or some of their drive or interest in the process of learning is said to be demotivated. Researchers and language educators can better understand why EFL learners struggle and why they are reluctant to devote additional time to their language study by being aware of the causes of demotivation and implementing potentially mitigating motivational techniques. Others concur that this knowledge also aids EFL teachers in making well-informed decisions about the specific motivation tactics they employ (Karaca & Inan, 2020).

OA can also exert positive impact on EFL learners' academic achievement. Academic accomplishment, as defined by Jin and Zhang (2019), refers to students' topic familiarity and knowledge and specific skills that students have acquired which are assessed and affirmed by valid and reliable assessments. Yurtsever et al. (2014) state that internal

factors can have an impact on a learner's performance and language achievement. In addition to physical issues, impairments, and cognitive and affective factors such as intelligence, attention, enthusiasm, aptitude, motivation, and burnout, students' academic accomplishment and performance can be also affected by various social factors, such as family background, instructional settings, and the particular cultural context (Namaziandost et al., 2024; Liu et al., 2021).

This study employs a pragmatic paradigm, considering the possible impact of internal and external influences on the academic accomplishment of EFL learners. Pragmatism enables a versatile and results-driven strategy that may include several approaches to comprehend the intricacies of achieving academic achievement in educational environments. This paradigm asserts that learning outcomes may be influenced by several aspects, such as cognitive abilities, motivational moods, physical and mental well-being, and socio-cultural and environmental elements. Pragmatism offers a comprehensive framework for examining how many elements impact academic achievement in EFL settings.

The defined psychological variables have significant roles in language learning, and the obtained results can be useful for both EFL learners and teachers. The research is also significant as it covers the psychological variables that aid personal development in relation to language skills and sub-skills. Regarding the importance of these variables, the researchers aimed to examine the effect of OA on four dependent variables: self-esteem, mindfulness, demotivation, and language development among EFL learners.

## **Review of the literature**

### **Theoretical background**

#### ***Online assessment***

An essential component of every educational program is assessment. It measures performance against the established standard of instruction and learning. Webber (2012) defined assessment as "activities designed primarily to foster student learning" (p. 201). Thus, it is evident that understanding the design and use of evaluations is a crucial aspect of the language teachers' professional development. Indeed, due to the involvement of educators in both the formative and summative evaluations of their students in educational settings, understanding their functioning and interaction with larger contextual and experiential elements becomes even more important (Zhang et al., 2021).

These days, OA has gained popularity in the EFL context (Ghanbari & Nowroozi, 2021). Furthermore, since OA benefits from the evaluation process and from utilizing resources inaccessible in a traditional face-to-face setting, educators have begun incorporating an online examination alongside the conventional method of using paper and pencil for assessments (Al-Maqbali & Raja Hussain, 2022). OA designs can be synchronous or asynchronous, much like online learning. Synchronous OA can resemble feedback-assisted auto-scoring tests, simulations, or presentations. E-portfolios, discussion boards, online exams and assignments, and projects are examples of asynchronous OA methods (Weleschuk et al., 2019). Thus, technically, OA measures students' language abilities or skill acquisition using information technology or any other web-based assessment instrument.

In the context of EFL, online testing and assessment are important for three main reasons. In the first place, since online testing and assessment are a natural byproduct of rapidly advancing technology in education, they are well suited for teaching languages in the twenty-first century. The students of today, referred to as Generation Z learners or I-Gens (Long et al., 2018), like using technology to aid in their language learning process. Language assessment activities should take into account the desire for OA as a more acceptable and accessible assessment method for today's students (Appiah & van Tonder, 2018). According to Long et al. (2018), language assessments conducted online offer advantages in terms of practicality, logistical efficiency, and dependability. It increases the flexibility of taking the test by enabling the taker to do so at any time and from any place with internet access. Furthermore, it improves practicality when scoring is done automatically by using computer programs to save time, labor, and improve accuracy. Additionally, it saves time by instantly transmitting the results to the relevant parties, making the task of test engineers easier since they may easily submit and change test items with few time or geographical limits. The ability to sustain testing and evaluation processes in the EFL setting even during times of crisis is the last justification for the importance of online testing and assessment (Alghammas, 2020). Even in situations when in-person instruction and evaluation must end, language learning and assessment activities can often go on without interruption thanks to OA techniques.

Even with its benefits, OA has its drawbacks. The difficulties are divided into three primary categories: those pertaining to academic personnel, learners, and information technology. The success of online learning in general and OA in particular is largely dependent on the IT infrastructure. Inadequate technology, software, and network connectivity might have major repercussions that overwhelm the learning process (Al-Maqbali & Raja Hussain, 2022). Rahim (2020) emphasized that to successfully adopt OA and address the difficulties facing education, it is imperative that all necessary assessment resources, including infrastructure such as network service, online platforms, and technological software be in good working order. In a similar vein, Slimi (2020) observed that IT infrastructure and weak internet connection might potentially hinder the successful implementation of the OA. Thus, the availability of stable and sufficient IT infrastructure is the initial prerequisite for a successful online learning environment.

Once basic IT infrastructure is established, the effectiveness of the global shift to online learning is primarily contingent upon the students. Nevertheless, several learner-related challenges such as the students' potentially immoral actions, their sense of isolation, and their personal technical barriers such as the inability to switch on cameras, and their general IT competence may impede the effectiveness and accuracy of the assessment process. The following issues can be linked to these challenges (Adeyoyin & Soykan, 2020): Students should possess enough know-how to meet the assessment requirements in an any setting whether online or traditional in the classroom. For learners to be able to manage learning in an online setting, they must possess the requisite IT abilities. Regretfully, new research indicates that many students lack IT capabilities (Tuah & Naing, 2021). This element has the potential to slow down the evaluation process and separate seasoned IT users from novices online. Learners' inability to manage their time effectively was another obstacle that emerged in OA environments (Mishra et al., 2020). This resulted in late or missed submissions for online assessment

requirements. Planning appropriate assessment procedures should thus begin with an analysis of the learners' baseline skills.

### **Personal development variables**

The academic success of EFL learners is influenced by several factors. Affective elements are among the factors that are most important to their academic achievement. One of the main motivations in humans is self-esteem. A person's beliefs about themselves that they carry into the world are known as their self-esteem (Blascovich & Tomaka, 1991). Individuals are greatly impacted by social elements as they construct their social identity depending on how others react to them (Koosha et al., 2016). According to Branden (2001), positive self-esteem is the perception that one is deserving of happiness and capable of handling life's fundamental obstacles through their physical and social abilities with self-respect. Self-esteem has also been recognized as a personality trait that is relevant to any cognitive or emotional activity inside a foreign or second language classroom, encompassing a positive relationship with EFL learning outcomes (Aydoğan, 2016; Liu, 2012). According to Acosta-Gonzaga (2023), self-esteem is seen as a crucial component in the process of academic and educational performance. Students with high self-esteem can be more willing to take chances and to learn from their mistakes, further developing their foreign language skills.

Koosha et al. (2016) asserted that self-esteem can serve as a measure of self-concept, which encompasses behavioral and cognitive characteristics and provides a more comprehensive presentation of an individual. According to some researchers, possessing a robust sense of self-worth facilitates the achievement of objectives (Leary et al., 2007). Individuals possessing a strong sense of self-worth frequently set high standards for themselves and have an increased ability to confront difficulties (Baumeister et al., 2003). Self-esteem is crucial in motivating students to have confidence in their abilities, enjoy learning, and participate in authentic communication (Abdumalikova, 2020).

Three types of self-esteem were identified by Brown and Ryan (2003): task self-esteem, situational or particular self-esteem, and global self-esteem. As to Brown's (Brown and Ryan 2003) assertion, the formation of global self-esteem stems from the combination of intra- and inter-personal experiences as well as the evaluation of the present environment. Situational or particular self-esteem is closely linked to an individual's judgments of themselves in specific environment or context. Depending on the circumstances and issues someone is facing, their situational self-esteem level may vary. For example, a student might have a high level of self-confidence at school but lower level of self-confidence in a larger social context. Task self-esteem refers to the judgments individuals make about certain activities in different situations. An example of task self-esteem in the domain of L2 learning occurs when individuals engage in self-assessment on a specific aspect of L2 skills (Aydoğan, 2016; Azmand, 2014). The fluidity of self-esteem, especially in relation to situational and task-based self-esteem, implies that an individual's perception of themselves may have a substantial impact on their actions and achievements in many areas, including foreign language education (Zhang, 2022). The relationship between how individuals see themselves and their academic performance has been the subject of extensive research, revealing the significant influence of self-esteem on language learning outcomes (Bouchareb, 2016; Kırmızı, 2015). For example, Lawrence

(2000) noted that learning results are found to be significantly influenced by the self-esteem concept. Studies have demonstrated a positive correlation between individuals' self-esteem and their academic achievements (Hisken, 2011). People with high self-esteem typically do more. Conversely, those who do not believe in themselves do not accomplish as much (Faramarzzadeh & Amini, 2017).

Demotivation is another psychological factor that affects foreign language learning. By examining practical strategies to increase learners' motivation for learning a foreign language, a thorough knowledge of learners' demotivation to learn a language is beneficial to conceptually and practically enhancing the findings of psychological research on language acquisition (Gao et al., 2022; Gau & Lio, 2022; Namaziandost et al., 2023; Thorner & Kikuchi, 2020).

L2 demotivation is a diminished degree of L2 learning motivation rather than a total loss (Dörnyei, 2001). Up until now, the majority of studies have concentrated on the motivation behind language acquisition, with little attention paid to demotivation (Gao & Liu, 2022). Investigating language learning demotivation might assist in offering strategies for increasing students' curiosity about learning a second language. Consequently, research on language learning demotivation is necessary. However, most research focus on the variables that affect learners' demotivation rather than highlighting the link between demotivation as a negative emotion and self-esteem in the EFL context. Several factors linked to students' psychological changes may also contribute to their demotivation, including negative attitudes towards a language, reduced confidence, and excessive learning anxiety (Falout & Maruyama, 2004; Xaypanya et al., 2017). However, they could also be linked to the educational setting, including teaching content and materials and the gap between actual and required input (Ren & Abhakorn, 2022), difficulty with challenging assignments (Lai, 2013), and unsatisfactory test outcomes (Sakai & Kikuchi, 2009). Over the past 30 years, several academics have made significant progress in their study of foreign language learning demotivation in a variety of circumstances, allowing them to thoroughly examine possible demotivators in those circumstances (Gau & Lio, 2020; Kikuchi, 2015) with the aim to improve the quality of the foreign language education and elevate the well-being of learners.

Demotivation is explained by the Activity Theory, which is derived from the socio-cultural theory of Vygotsky (Vygotsky, 1978). It contains the important notions of mediation and contradiction. The indirect link that is created between an external stimulus and an individual's approval of different mediational resources is referred to as mediation (Guo et al., 2020). According to this theory, interactions between people and their social environment are what make human activity real. Learning discourse, material conditions, and cultural artifacts, as well as the influence of significant social agents, serve as mediational instruments in the actualization of this interaction (Gao, 2010). Additionally, as supported by the theory, demotivation is characterized as a socially mediated process in which learners' realization of the importance of language acquisition is hindered or slowed down by inconsistencies between the elements of the activity system in which they are participating. It arises from perceived inconsistency between the activity system's constituent parts. This contradiction would have a detrimental effect on the learner's attempt to engage in the learning activity system, which would consequently hinder or delay the learner's realization of the

activity's significance (Kim et al., 2019; Wu & Zhao, 2023). In other words, when conflict results from the interplay of the constituent elements, it can either help or hinder language learning activities from progressing smoothly (Kikuchi, 2017). This suggested analytical framework explains the social disposition of learning behavior from the subjects to the learning results, stressing the importance of appropriate mediation tools and illuminating the formulation process of demotivation (Li, 2021). According to Li et al. (2020), demotivation is a social behavior that occurs in a particular socio-cultural environment and is a cognitive behavior that is the outcome of the interaction between contextual factors and individual cognition. However, Dörnyei (2001) argues that demotivation is caused by several outside factors that have the potential to erode a person's behavioral intention and the driving force behind a continuous action. Demotivated students were formerly very motivated to learn, but lost interest due to outside factors. Dörnyei and Ushioda (2021) elaborated on the concept of demotivation, asserting that it involves a detrimental process wherein an individual's motivation to act or carry out their intentions is diminished. Rather than stressing the external sources of demotivation, this concept describes demotivation as a negative process that people go through on an individual basis, which can affect the overall processes of learning and a feeling of well-being while learning.

This internal viewpoint redirects attention towards an individual's encounters and emotional mechanisms, which can significantly impact their cognitive and emotional condition. Comprehending these internal processes corresponds to the concepts of mindfulness, as examined by Holas and Jankowski (2012) and Leary and Tate (2007). In addition to fostering awareness and acceptance, mindfulness is also about having the capacity to manage, guide, and refocus another person's attention for the greater good (Holas and Jankowski 2012) with an awareness of the present moment (Leary & Tate, 2007). It can diminish the perception of negative thoughts about the past and future, help one to accept and appreciate the present situation without attachment or rejection, and foster positive attitudes and pleasant emotions by improving communication skills. It is well recognized that the elements of mindfulness, such as awareness and unconditional acceptance of the present moment, are effective treatments for a variety of distressing conditions, such as anxiety, panic attacks, sadness, and rage (Wang et al., 2023).

Several psychological studies have suggested that mindfulness has several advantages for individuals. Thanks to mindfulness training and practice, students can reduce stress (Kriakous et al., 2021) and overthinking (Ramel et al., 2004). Furthermore, they can become more autonomous (Goodman et al., 2021) and improve self-regulation (Schultz, 2015). In education, mindfulness is known as mindful learning, and it is used in the classroom to help students focus and become aware of the present moment (Namaziandost & Rezai, 2024; Zeilhofer, 2023). Weare (2023) highlighted that mindfulness is the act of attentively monitoring one's thoughts, emotions, and physical sensations without any critical judgments. Engaging in this technique can facilitate individuals in cultivating a sense of self-awareness, alleviate tension, and augment their ability to concentrate and focus. Learning with awareness opens up new possibilities and fosters creativity and sensitivity to contemporary concepts. There are many different ways to see and comprehend an event when learning mindfully. Furthermore, Zhi et al. (2023) suggested that



mindfulness practices might be employed as an effective means of overcoming difficult situations.

According to certain research, mindfulness imparts advantages across a wide range of industries. It is used to increase focus and promote mental clarity (Anālayo, 2020). Additionally, it is strongly linked to cognitive functions that support creative thinking, decision-making, and the learning process (Henriksen et al., 2020; Whitfield, 2022). All these advantages really help to promote English language learning in a variety of ways. Initially, it facilitates concentration on the subject matter being studied, since mindfulness motivates students to be present in the moment (Cerit, 2019). Secondly, conscientious learners develop strong self-confidence, which wards off language anxiety (Pappamihie, 2002). Numerous professionals concur that practicing mindfulness helps to increase self-efficacy and confidence (Glomb et al., 2011). Additionally, a feature of mindfulness is a reduction in persistently unpleasant thoughts that cause anxiety in people (Williams et al., 2024). Mindful learners avoid anxiety far more easily because they remain in the now without dwelling on the past or thinking about the future.

Lastly, in a speaking exercise, attentive learners frequently recognize the emotional phase they are in. Anxiety and emotions are intimately intertwined. Non-judgmental acceptance of unpleasant feelings, a quality of mindfulness, aids students in managing negative ideas that might impair their capacity to provide persuasive presentations (Hofmann et al., 2010) and can improve memory even in high-stress situations (Jha et al., 2010). People who practice mindfulness come to understand that all of their unpleasant thoughts and emotions may be gently accepted and let go of because they are only fleeting emotions. Because of this, English language learners who are aware of this truth might be able to more readily let go of their negative feelings and stop letting them affect their presentations. Studies have also shown that even in high-stress situations, mindfulness improves people's memory (Jha et al., 2010). A number of studies have been done to provide the benefits of mindfulness for learning foreign languages (Fan & Cui, 2024). With its benefits such as improved mental clarity and the ability to maintain composure, it can assist students in concentrating on the discourse at hand and organizing the text more effectively when speaking in English (Brown & Ryan, 2003; Ersanlı & Ünal, 2022).

#### **Empirical studies on the use of OA in EFL**

Some empirical studies were done on the effects of OA on EFL learners' English language learning. Abdulrazzaq and Abdellatif (2023) looked at how willingness to communicate (WTC) and test-taking anxiety in L2 was affected by online and offline assessments. In the study, a group of ESL learners was employed, and they were randomly placed into the experimental and control groups. The results showed that the online assessment condition had a good effect on learners' WTC, leading to increased involvement and engagement in communicative activities. The findings suggest that online evaluations have the potential to improve students' motivation and confidence in oral communication in the target language and minimize test-taking anxiety. The study advocates for the incorporation of OA in educational environments because of their beneficial influence on students' academic achievement and psychological well-being.

Likewise, Cassidy and Gridley (2005) investigated the effect of online and pen-and-paper assessments on test anxiety in language learners. Students who participated in the

study were assigned to an online or offline assessment condition. The results showed that students who participated in online testing reported decreased levels of perceived test anxiety. Implementing online practice exams as a preparation tool has had a positive impact, mainly by reducing negative perception related to testing, thereby increasing student's confidence and sense of fairness with relation to assessment (Nguyen et al., 2024). The findings showed that language learners might benefit from a more relaxed and pleasant testing atmosphere while using online assessments.

Lee and Hsieh (2019) also looked at how communicative openness was affected by both offline and online contexts. Their study investigates whether the mode of evaluation has an impact on students' inclination to participate in oral communication activities. The findings indicated that students were more ready to talk when taking tests online because it provided a less intimidating and more private environment. Nhu and Tan Tin (2019) investigated how students' writing performance in a Schoology learning management system writing course was affected by online formative evaluation. Using the online discussion board as the primary activity, a fifteen-week writing course included two participant groups from an EFL context. The findings demonstrated a statistically significant difference between the participants in the treatment group and the control group. It was suggested that teachers use online formative evaluation while teaching writing to help EFL students in Vietnam and other comparable environments obtain better writing outcomes.

Additionally, Shamshiri et al. (2023) presented a study evaluating the effects of offline and online testing on L2 vocabulary learning in an EFL context. The results significantly demonstrated that OAs produced a considerably positive impact on L2 vocabulary gains as compared to offline evaluation. According to the findings, OA may enhance language learning outcomes and promote vocabulary development in the target language.

As seen in the literature review, OA positively affects learning. However, even though several studies investigated on the effect of OA on English language skills and sub-skills, few studies have been carried out on the effects of paper and online assessment on variables of personal development such as EFL learners' self-esteem, growth mindfulness, experience of demotivation, and language learning development. So, this research was conducted to contribute to the existing studies by posing the following questions:

RQ1: Do paper assessment and OA affect EFL learners' self-esteem equally?

RQ2: Do paper assessment and OA affect EFL learners' mindfulness equally?

RQ3: Do paper assessment and OA affect EFL learners' demotivation equally?

RQ4: Do paper assessment and OA affect EFL learners' language leaning development equally?

## **Method**

### **Participants and design of the research**

A quasi-experimental design with a pragmatism paradigm was applied in this study. This research was conducted with the students at Urganch State Pedagogical Institute, Uzbekistan, in 2023–2024. In the study, convenience sampling was employed. According to the study by Mackey and Gass (2012), members of the target population were chosen for this kind of sampling provided that they satisfied certain practical requirements, such as being close by geographically, being available at a specific time, or being

otherwise easily accessible. This study involved 60 intermediate EFL students who took six-hour General English classes each week for three months. To confirm the level of language proficiency and entry level of each participant, a placement exam (Preliminary English Test) was given at the start of the course. Participants were found to have an intermediate (B1) level of language proficiency. These participants were males ranging in age from 18 to 27. Thirty students were randomly assigned to either the experimental (EG) or control group (CG). During the study period, one of the researchers was responsible for instructing both of these two classes in the major courses.

### Instruments

Four data collection instruments were utilized for this research. The Academic Demotivation Scale (ADS), which gauges academic demotivation, was the first instrument employed in the research. An ADS was developed by Sakai and Kikuchi (2009) to gauge participants' demotivation levels. It is comprised of 35 items on the Likert scale, where 1 denotes total disagreement and 5 denotes total agreement. Six aspects are evaluated by the ADS: instructors (6 items), classroom characteristics (7 items), environment (7 items), supplies (6 items), disinterest (4 items), and failure experiences (5 items). Internal consistency was then assessed using Cronbach's alpha, which yielded a score of .81.

The Revised Rosenberg Self-esteem Scale was the second tool used to assess the participants' degree of self-esteem (Rosenberg, 1965). Ten elements make up this metric, which has been utilized and adopted in different contexts. The participants filled in the questionnaire using a four-point Likert scale that ranged from "1= strongly disagree" to "4= strongly agree." This measure's reliability according to Cronbach's alpha was .70.

A test on mindfulness served as the third tool. To measure mindfulness, Brown and Ryan (2003) created the Mindfulness Attention and Awareness Scale (MAAS). The scale consists of fifteen questions and was used in its original form. A 6-point Likert scale was used to assess all the questions in the original measure, with 1 representing very usually and 6 representing almost never. The purpose of the 15-item instrument scale is to demonstrate the participants' level of awareness and attentiveness regarding their engagement in daily life. MAAS had an internal consistency of  $\alpha = .92$ .

The fourth tool was a thirty-item objective exam designed for research purposes to assess language learner's proficiency in grammar, vocabulary, and reading comprehension. The course materials for the participants were used to generate the test by the two assessment experts working at the institute, where the data was collected. It was piloted with a group of participants with intermediate level of English in another state institute, and some items were revised in terms of language mechanics. The validity of the exam was confirmed by a panel of specialists in the field of English language learning, and its reliability ( $\alpha = .86$ ) was calculated using the KR-21 algorithm. It is significant to note that this exam was administered both before and after the intervention, together with the questionnaires that were previously detailed. Together, they functioned as the study's pre- and post-tests, whose validities were confirmed statistically.

### Data collection and analysis procedures

Thirty respondents were considered the CG, and thirty respondents were designated as the EG for the purposes of this study. Then, to determine each participant's level of

**Table 1** All pre-test descriptive statistics

	Group	N	Mean	Std. deviation	Std. error mean
Self	CG	30	20.83	4.48	.81
	EG	30	21.46	4.29	.78
Mind	CG	30	33.76	4.65	.85
	EG	30	34.66	4.18	.76
Demotivation	CG	30	44.53	4.33	.79
	EG	30	45.86	5.34	.97
Development	CG	30	12.46	2.31	.42
	EG	30	12.13	2.52	.46

**Table 2** All pre-test inferential statistics (independent samples *t*-test)

	F	Sig.	t	Df	Sig. (2-tailed)	Mean difference	Std. error difference	95% confidence interval of the difference	
								Lower	Upper
Self	.00	.97	-.55	58	.57	-.63	1.13	-2.90	1.63
			-.55	57.89	.57	-.63	1.13	-2.90	1.63
Mind	.39	.53	-.78	58	.43	-.90	1.14	-3.18	1.38
			-.78	57.35	.43	-.90	1.14	-3.18	1.38
Demotivation	1.44	.23	-1.06	58	.29	-1.33	1.25	-3.84	1.18
			-1.06	55.62	.29	-1.33	1.25	-3.85	1.18
Development	.66	.41	.53	58	.59	.33	.62	-.91	1.58
			.53	57.55	.59	.33	.62	-.91	1.58

*p* > 0.05

English proficiency and measure self-esteem, growth awareness, demotivation, and language learning development before the treatment, the four pre-tests described above were administered. Then, using OA, all of the lessons from Top Notch 2 were given to the EG, while the CG received the same instruction through a traditional evaluation. Following the instruction of each lesson, the EG took one OA, and the CG took a paper evaluation. When all lessons were taught to both groups and all assessments were taken, the post-tests measuring self-esteem, growth mindfulness, demotivation, and language learning development were given. Next, the scores of the pre- and post-tests were analyzed, using the one-way ANCOVA test and the independent samples *t*-test.

**Results**

Once a normal distribution was assured, the researchers employed parametric statistics to examine the information. The Kolmogorov-Smirnov test was used to confirm the normal distribution of the data. The obtained findings for each variable’s pre- and post-tests are shown in the tables that follow.

Table 1 demonstrates that both groups’ mean scores on every pre-test were essentially equal. The pre-test replies for the two groups did not differ statistically significantly, according to an independent samples *t*-test.

According to the results of the pre-test inferential statistics, the two groups do not differ statistically significantly. As all of the *p*-values in Table 2 are larger than 0.05, it may be inferred that there was no significant difference between the two groups on any of the four pre-tests.

As indicated in Table 3, the average score for the EG is 26.10, whereas the average score for the CG is 23.20.

Table 4 demonstrates that there was a significant difference in the self-esteem post-test scores between the two groups, with *p*-value being .00, less than 0.05. As it transpired, in the self-esteem post-test, the EG did better than the CG.

*The descriptive outcomes for the two groups on the mindfulness post-test are shown in Table 5.*

*On the mindfulness post-test, it appeared that the EG group outperformed the CG group. With *p*-value (.00) being less than 0.05, Table 6’s one-way ANCOVA test shows a significant difference in the mindfulness post-test outcomes for the two groups.*

**Table 3** Self-esteem descriptive statistics

Group	Mean	Std. deviation	N
CG	23.20	4.18	30
EG	26.10	3.64	30
Total	24.65	4.15	60

**Table 4** Self-esteem inferential statistics (ANCOVA)

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	324.79 <sup>a</sup>	2	162.39	13.32	.00
Intercept	595.37	1	595.37	48.84	.00
Pre-test	198.64	1	198.64	16.29	.00
Group	103.45	1	103.45	8.48	.00
Error	694.85	57	12.19		
Total	37,477.00	60			
Corrected total	1019.65	59			

<sup>a</sup> R squared = .319 (adjusted R squared = .295)

**Table 5** Mindfulness descriptive statistics

Group	Mean	Std. deviation	N
CG	35.70	4.27	30
EG	43.36	8.49	30
Total	39.53	7.70	60

**Table 6** Mindfulness Inferential Statistics (ANCOVA)

Source	Type III sum of squares	Df	Mean square	F	Sig.
Corrected model	1544.57 <sup>a</sup>	2	772.28	22.43	.00
Intercept	172.23	1	172.23	5.00	.02
Pre-test	662.90	1	662.90	19.25	.00
Group	723.03	1	723.03	21.00	.00
Error	1962.36	57	34.42		
Total	97,280.00	60			
Corrected total	3506.93	59			

<sup>a</sup> R squared = .440 (adjusted R squared = .421)

**Table 7** Language development descriptive statistics

Group	Mean	Std. deviation	N
CG	13.76	1.88	30
EG	16.53	1.56	30
Total	15.15	2.21	60

**Table 8** Language development inferential statistics (ANCOVA)

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	149.75	2	74.87	30.50	.00
Intercept	273.06	1	273.06	111.25	.00
Pre-test	34.93	1	34.93	14.23	.00
Group	123.24	1	123.24	50.21	.00
Error	139.90	57	2.45		
Total	14,061.00	60			
Corrected total	289.65	59			

**Table 9** Demotivation descriptive statistics

Group	Mean	Std. deviation	N
CG	47.86	7.15	30
EG	74.60	17.49	30
Total	61.23	18.90	60

According to Table 7, the CG's mean score is 13.76, whereas the EG's mean score is 16.53.

The one-way ANCOVA test findings are in Table 8, with *p*-value being .00, less than 0.05, showing that there were significant differences between the post-test of language learning development of the two groups. Table 8 shows that the EG outperformed the CG on the language learning development post-test.

Table 9 shows that the EG has a mean score of 74.60, whereas the CG has a mean score of 47.86.

**Table 10** Demotivation inferential statistics (ANCOVA)

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	10815.65	2	5407.82	30.03	.00
Intercept	1618.54	1	1618.54	8.98	.00
Pre-test	95.59	1	95.59	.53	.29
Group	10,241.33	1	10,241.33	56.87	.00
Error	10,263.07	57	180.05		
Total	246,050.00	60			
Corrected total	21,078.73	59			

The findings of the one-way ANCOVA test in Table 10 showed that the EG scored better on the demotivation post-test than the CG. The table above indicates that the difference was statistically significant with  $p$ -value being less than 0.05 at .00.

This study investigated the effects of paper assessment and OA on EFL learners' self-esteem, growth mindfulness, demotivation, and language development. The results in the above tables reveal that on the pre-tests, the performances of the two groups were the same, but they performed differently on their post-tests. The results highlight a significant difference between the post-tests of the EG and CG in favor of the EG students.

## Discussion

According to the result of the present study, there was a significant difference between the post-test scores on the four post-tests for EG and CG. Our findings are consistent with Fitriyah and Jannah's (2021) findings that OA can benefit EFL classes by raising student motivation and autonomy and enhancing the quality of feedback. Additionally, the findings support Förster et al.'s (2023) findings that online quizzes can enhance student engagement by providing students with regular feedback on their performance, which motivates them to actively interact with the course content and maintain motivation and focus on their learning objectives.

Furthermore, Stowell and Bennett's (2010) assert that students in the OA condition outperformed those in the paper-based testing condition on the examinations and that participants reported relatively lower levels of test anxiety. They contended that this could be the case because students feel more in control of the testing process when they take exams online. Students may take online tests whenever and wherever is most convenient for them. Additionally, students may test in a more comfortable setting, which might lower their anxiety levels and thus enhance their performance on the test.

The results of our study align with Boukhentache's (2022) study in that, due to OA's flexibility concerning time and location, as well as reported anxiety levels among EFL students were lower. He clarified that because OA is so simple to use at home and eliminates the stress of taking an exam in class, it might provide learners with a more comfortable testing atmosphere.

Additionally, the present study's results are consistent with those of Abdulrazzaq and Abdellatif (2023) who presented quantitative proofs that OA is effective for improving communicative willingness, lowering test anxiety, and accurately reflecting language proficiency when compared to traditional assessment since it grants fairness because of

the equal and precise time length allocated for each test taker and avoids subjectivity in scoring (Nguyen et al., 2024).

The results also align with other research demonstrating the benefits of OA for learners and instructors, which are frequently linked to its temporal and spatial flexibility (Annamalai et al., 2022; Fitriyah & Jannah, 2021). Research revealed that OAs permit the administration of tests on dates and times that are flexible (Spivey & McMillan, 2014). They also permit the direct preservation of data that is accessible from anywhere at any time. This enables instructors to examine student work for any issues that may arise later on or to track changes in students' performance over time (Fitriyah & Jannah, 2021). Moreover, Annamalai et al. (2022) discovered that students could relatively have more time for revision since they were able to take examinations online instead of having to physically go to test centers, which would mean saving time for preparation.

According to Poehner and Infante (2016), providing students with feedback that is suitable and based on their needs and gaps might help them to go beyond their baseline capacities and jointly develop new knowledge and awareness. This aligns with the Vygotskian socio-cultural theory, which states that knowledge is first co-constructed through social interaction in which students may engage with more experienced individuals (Lantolf & Poehner, 2014). The current investigation's findings are consistent with Harasim's (2011) study of online collaborative learning, which presents the advantages of online education and CALL for L2 acquisition. The theory states that students could more readily collaborate to find solutions to their issues, which might improve their English language learning. Using the resources provided by the Internet, online collaborative learning creates learning environments that encourage cooperation and knowledge development.

One reason for the outcomes might be that learners are receiving continuous feedback through OA. Students can receive continuing feedback from their exam results as well as quick feedback when responding to auto-scoreable questions. Rahim (2020) stresses the importance of giving students high-quality feedback through OA. It is important to acknowledge that in order to improve learners' comprehension of the desired goals and inspire them to do better in the summative assessment, grades during formative OA must be accompanied by corrective comments. Another benefit that OAs can offer is the ability to give large student cohorts rapid, accurate feedback on each student's performance, enabling them to concentrate on their particular areas of weakness and make necessary improvements (Mate & Weidenhofe, 2022). The OA makes it easier to quickly and clearly report on the progress and achievements of pupils. This makes it simpler to provide applicants with insightful feedback on how they are doing, their strengths, and the areas that still need improvement.

One possible explanation for the achieved outcomes is the economic benefit of OA. Because OA requires far less administrative time to manage the entire test production, distribution, and grading process, it is more cost-effective. When compared to administering tests on paper, there are notable cost savings. Paper exams can be very costly because of the significant costs involved in structuring the testing. These include renting the devices or testing facilities, printing and transporting the tests, securely storing the



exams, and payroll for the required extra staff hours. All of these expenses are eliminated by OA.

With OA, students can take their exams anywhere they like. Additionally, they can choose an exam window during a convenient time and day. This capacity may be a huge competitive advantage, especially for students who are also working full-time jobs or who are balancing other obligations. Since no printing is required, online assessments provided to students are quicker to administer and grading OAs also goes much more swiftly. Students usually appreciate getting their results quickly.

An additional rationale for the findings of this study is that OAs offer enhanced security in contrast to conventional paper-based tests. There is far less pressure to keep finished test papers safe and secure after the evaluation and during the grading process. Since all online test data, applicant profiles, grades, and results are digitally recorded, increased security is really one of the main advantages of OA. Furthermore, system access can only be authorized to those who should have access to the information with online exams. Paper-based tests make it far more difficult to handle results, ensure secure storage, and to control access. Furthermore, OA portals frequently have features installed to identify questionable test behavior. They can turn off navigation options, making it impossible for students to access other applications or websites to look for information to provide more secure testing conditions.

Convenience is another benefit of online exams that may have helped the EG group score better on their post-tests. As noted earlier, the tests are online, and students may choose the times that work best for them. This highlights the flexibility of online tests in terms of scheduling and location, which may be a substantial benefit for students. This flexibility can work to alleviate anxiety and enable students to do examinations when they feel most ready and attentive. Additionally, after completing a test with automated scoring, students can receive their results online nearly instantly. Examining bodies are not limited to providing tests in physical test centers when using OA, which allows them to provide exams to applicants situated over larger geographic areas. This marks the start of mass learning by facilitating the development of student learning globally. Giving students more options for testing increases their chances of receiving an education, especially for those who want to learn new things and further their education. Additionally, managing all the duties required in designing tests is made easier for the examining body via online learning. Authoring questions may now be done collaboratively online with well-defined processes for reviewing and approving questions before they are published to the question bank. This enables the teacher to supplement existing information and guarantee that pupils are receiving high-caliber ability assessments to support each unique student.

The capacity to examine and evaluate data is another advantage of OA. OA tools provide strong insights and facilitate easier and more efficient interpretation of examination data. Everything that has to do with taking the OA may be analyzed, such as how long the examiner takes to grade, how many scores are often given for a certain topic, or how long it takes students to complete a given kind of question. The analysis' findings can help one decide what steps to take to further improve the online exam's dependability and efficiency while also making it better for upcoming students.

The administrative work associated with paper-based exams is significantly reduced by OAs. For instance, scheduling the test is made easier for students, printing is not

necessary, there is no dependency on the mail service, and remote proctoring and automated scoring are possible. These elements all work together to expedite and simplify the evaluation process, reducing the possibility of mistakes or unplanned delays. Making the switch to OA will also help to increase fairness and inclusion for students with different needs and requirements. For the public, larger stakeholders, and students alike to continue to trust evaluations, impartiality, and accessibility are essential. OA may increase equality via lowering instances of overt prejudice, increasing accessibility, and removing physical obstacles to participation that could impair a learner's performance using other methods.

There are various consequences of this study for EFL students. To keep students motivated and interested in their studies, OA might offer more involved and interesting assignments through optional assessments or ongoing formative evaluation. One of the key justifications for using OA is that it may offer a more dynamic learning environment by combining instant feedback and interactive activities, which are catered to students' particular needs, preferences, and interests. This can increase their engagement in language learning. Additionally, OA can provide a more customized and adaptable approach by allowing students to track their own development, which promotes both autonomy and engagement.

It is critical to understand that OA may affect students' anxiety in different ways and that anxiety results from a variety of underlying causes. According to research, students' anxiety may be reduced by giving them clear instructions, offering a variety of practice chances, and acquainting them with OA techniques. Furthermore, the perceived fairness and utility of OA materials might affect how anxious EFL students feel. To reduce anxiety and increase learning results for EFL students, educators and institutions must take these aspects into account while creating and implementing OAs. The untethered nature of OA can also benefit EFL students who might be nervous about taking an evaluation in a regular classroom environment as perceived privacy might ease their anxiety.

Additionally, by providing learners with a clear picture of their strengths and limitations, OA may help learners feel more confident in their skills and minimize anxiety by providing them with rapid feedback. OA of students can also grant them some autonomy over the testing procedure resulting in relatively more time and opportunity to study for the exam, which can help them to feel less anxious. For example, Förster et al. (2023) found that online quizzes can improve student engagement because they give students frequent feedback on their performance, which motivates them to actively interact with the course materials and maintain motivation and focus on their learning objectives. According to the study, receiving regular feedback enables students to keep track of their personal progress and pinpoint their areas of strength and weakness. The specific implementation of online quizzes, such as the instruction and timing of quizzes, time span for testing, the types of questions utilized, the design and affordances of the testing platform, and the availability of dynamic feedback, can all affect student interest.

The results of this study may be helpful to some educators and stakeholders as it suggests that OA can help language teachers provide their students with dialogic, progressive feedback that takes into account their zone of proximal development (ZPD). Additionally, it is advised that teachers conduct some of their class activities online, such as writing assignments, because students may refer to and learn from

the teacher's and other peers' input regularly when it is available online. Additionally, the current study can benefit teacher educators, who can use its findings to inform instructors about the benefits of doing certain sessions online. The results of this study may really be included by teacher educators in teacher education curricula, and they can also enlighten teachers about how using online social networks can improve feedback session efficiency while simultaneously saving them instruction time.

Instead of just using OA for summative assessments, teachers may also utilize it as a tool for formative evaluation and feedback. Teachers may foster a more pleasant learning environment and support students in maintaining their motivation and engagement in the process by giving them regular and constructive feedback (Chen, 2023). Before the exam, teachers can acquaint students with the testing platform and offer them clear instructions and standards for OA. By doing this, teachers can lessen students' nervousness and encourage a more assured and relaxed testing environment (Ahmad & Khan, 2022). The results can also be used by textbook publishers to encourage educators and students to take advantage of online resources for practice.

The study's findings suggested that OA can have a positive impact on EFL learners' language development, self-esteem, mindfulness, and attenuate demotivation. Thus, it can be said that language teachers should carefully plan and carry out OAs that meticulously consider learning environments and learners' profiles in the design and implementation of the assessments. They should also make sure that students have access to the tools and resources they need to help them overcome demotivation and strategically increase motivation and sense of self-worth during the OA process. Taking such an approach to OA may ensure that EFL students are at ease, motivated, and engaged in the learning process.

## Conclusion

Through interactive, collaborative, and engaging exercises, OA may boost EFL students' motivation, mindfulness, self-esteem, and engagement without sacrificing customized support. Nonetheless, teachers must carefully plan and execute the implementation of OA such that it complements students' interests and personal learning objectives. It is also critical to take into account the unique, cultural, and contextual characteristics of each learner. By doing this, teachers may gain a better understanding of how OA affects EFL students and create more useful plans to enhance student learning and engagement.

It can be inferred that OA provides EFL learners with a significant chance for personal development. It is recommended that EFL teachers use a range of open educational resources (OA) in their lessons and employ effective strategies to increase students' familiarity with OA. Furthermore, students engaged in OA report experiencing fewer psychological problems than when taking physical exams. To help EFL learners learn English more successfully, teachers are advised to integrate technology-driven pedagogy and assessments into their English lessons.

The study is subject to several limitations. The small sample size of this study presents significant limitations. Since the researchers limited the investigation to 60 EFL students at a single English institute, it is impossible to generalize the study's findings, and results should be evaluated cautiously. The quantitative information gathered from the pre- and post-test design of the study was also limited. Future research endeavors may employ diverse methodologies, such as more extensive surveys, including a substantial

participant pool from many nations and regions, to enhance the research's representativeness and generalizability. Given that complete OA is still relatively new and something requiring facility with technology, it is suggested that more research be done with a larger sample size and additional supporting documentation to draw precise conclusions regarding the consequences of the online evaluation.

#### Abbreviations

OA	Online assessment
EG	Experimental group
CG	Control group
EFL	English as a foreign language
GDA	Group dynamic assessment
Non-GDA	Non-group dynamic assessment
PET	Preliminary English test
ADS	Academic Demotivation Scale
MAAS	Mindfulness Attention and Awareness Scale

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#### Authors' contributions

BSA and DA made substantial contributions to conception and design. Data was collected by BSA. Data analysis and interpretation was done by FÇ. BSA and DA conducted the intervention and participated in drafting the manuscript. FÇ revised the manuscript critically for important intellectual content and finally approved the manuscript.

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#### Availability of data and materials

The data that support the findings of this study are available from the corresponding author upon reasonable request.

#### Declarations

##### Ethics approval and consent to participate

The study involving human participants did not require ethical review and approval, as it complied with local legislation and university requirements of Uzbekistan. Written informed consent was obtained from all participants prior to their participation in the study.

##### Consent for publication

Not applicable

##### Competing interests

The authors declare that they have no competing interests.

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