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Research Paper

Developing Highschool EFL Learners' Autonomy Through Web-based Dynamic Assessment in Iran

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Abstract

It is assumed that web-based dynamic assessment will continue to thrive and have a profound role in pedagogy. In this regard, an explanatory sequential mixed-methods design was selected to consider the effect of web-based dynamic assessment on learners' autonomy. A sample of 60 high school EFL learners was selected non-random for this purpose, and they were categorized into two groups web-based dynamic assessment and the control group based on the convenience sampling method. The learners' autonomy questionnaire was used as a data-gathering tool for the pretest and posttest in autonomy. The high school students were exposed to web-based DA via a designed web, based on the student's level and need in grammar. However, control learners learned grammar through the traditional or conventional method of instruction. Based on Mann-Whitney U-test results, the learners' autonomy means scores in web-based DA increased in comparison to those of the control group. The platform and methods employed in this study produce results that are encouraging for the field of language instruction and could produce motivational outcomes in the future. The pedagogical implications of the study will be discussed.

Keywords: Learners' autonomy; Teachers' authority; Zone of proximal development; Web-based dynamic assessment

توسعه استقلال زبان آموزان زبان دبیرستانی از طریق ارزیابی پویا مبتنی بر وب

فرض بر این است که ارزیابی پویا مبتنی بر وب به پیشرفت خود ادامه خواهد داد و نقش عمیقی در آموزش خواهد داشت. در این راستا، طراحی ترکیبی متوالی توضیحی برای بررسی تأثیر ارزیابی پویا مبتنی بر وب بر استقلال فراگیران انتخاب شد. برای این منظور، نمونه ای متشکل از 60 نفر از زبان آموزان مرد زبان انگلیسی در دبیرستان به صورت غیرتصادفی انتخاب و بر اساس روش نمونه گیری در دسترس در دو گروه ارزیابی پویا مبتنی بر وب و گروه کنترل قرار گرفتند. از پرسشنامه خودمختاری فراگیران به عنوان ابزار جمع آوری داده ها برای پیش آزمون و پس آزمون در خودمختاری استفاده شد. دانش آموزان دبیرستانی از طریق یک وب طراحی شده بر اساس سطح و الزامات دانش آموزان در دستور زبان در معرض DA مبتنی بر وب قرار گرفتند، با این حال، فراگیران گروه کنترل دستور زبان را با روش سنتی یا متعارف آموزش آموختند. بر اساس نتایج آزمون Mann-Whitney U، نمرات خودکارآمدی فراگیران در DA مبتنی بر وب در مقایسه با گروه کنترل افزایش یافته است. پلت فرم و روش های به کار گرفته شده در این مطالعه نتایجی را ایجاد می کند که برای رشته آموزش زبان دلگرم کننده است و می تواند نتایج انگیزشی را در آینده ایجاد کند.

کلمات کلیدی: استقلال فراگیران، اختیارات معلمان، منطقه توسعه نزدیک، ارزیابی پویا مبتنی بر وب

Introduction

Developing learner autonomy (LA) in language learning is challenging as it leads to a role shift from teacher authority to learner autonomy. Holec (1981) defined learner autonomy as the ability to take charge of one's own learning. Noting that this capacity is not innate but must be acquired naturally or through formal learning, in a systematic and deliberate manner.

Holec (2008) Since its inception, learner autonomy, along with the shifts from linguistic to communicative competence, from behaviorist to cognitive description of acquisition, and from teacher-centered to student-centered approaches, has revolutionized pedagogical practices and principles, leading to the birth of an entirely new pedagogical paradigm in language pedagogy.

In recent years, instruction and learning have become student-centered and occur through technology (Laurillard, 2002). As part of this change, we are following the debate on the relationship between the web-based dynamic assessment (WBDA) of EFL learners and its relevance to the development of autonomy.

To conceptualize LA, the theoretical underpinnings of this study are rooted in two elements of sociocultural theory (SCT), mediation and proximal developmental zone (ZPD). According to Vygotsky (1978), mediation is the basis of all higher mental functions. Learners' actual development level is defined as learners' independent problem Solving, which learners already internalized. Vygotsky's ZPD is defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). learners' (ZPD) potential development level through mediators grows, it is more helpful for future learning and education. Through the internalization of social and cultural forms of mediation, the social nature of people also becomes their psychological nature. (Luria, 1979, p.45). Learning is no longer seen as a passive process of receiving information; rather, it is seen as an active interpretation and processing of knowledge that students actively seek out depending on their own interests and needs.

A web-based dynamic model represents the learner's current understanding It has a computer-based educational environment that responds to student behavior in that environment. Generally, it is the web's role to mediate the learner's knowledge, challenges, and misunderstandings based on their answers to the questions. In the web environment, students are engaged in grammar, and after receiving enough instruction on grammatical issues, they were evaluated simultaneously. In other words, in dynamic web-based assessment, teaching and evaluation happen at the same time in favor of learning. One of the main goals of dynamic assessment is to improve student performance by providing them with instructional support through assessment activities (Chen et al., 2022). Learner autonomy (LA) is characterized by the willingness to take charge of one's own learning in the service of one's own needs and purposes.

Therefore, it clarifies why web-based could enhance the chance of learners' autonomy in grammar accuracy by decreasing the role of the teacher's dependency. The former is manifested in learners' beliefs about the teacher's role and motivation to learn languages. Those who believe, teachers are facilitators of learning are ready for autonomous learning; In contrast, learners who think that teachers should tell them what to do, offer help, and explain everything are not yet ready for LA (Rungwaraphong, 2012). Through the development of a managed learning environment, with access to learning materials and support services provided via the Internet, learners move smoothly from dependency to autonomy. WBDA moves students from their actual zone to the Zone of proximal development. They gain the chance to become more autonomous. According to Madjar et al. (2013), supportive environments help learners' autonomy, these students embrace online learning that results in greater academic success. The aim of this study is



how can move learners from teacher authority to learners' autonomy in the learning process through dynamic web-based mediation.

Review of the Related Literature

Learners are expected to be aware of teachers' roles and their own roles, as their beliefs about their roles can greatly influence their responsibilities within or outside of the classroom and their willingness to learn English independently (Hozayen,2011; Le, 2013; Mousavi,2017). It can be argued that students' beliefs in language learning are reinforced by teachers' behavior. There is a strong belief that learners' beliefs about their own role and the role of their teachers, go a long way toward accepting their language learning responsibility and enhancing LA.

The expanding potential of new technology was examined by Cole and Vanderplank (2016) to see how it facilitated student autonomy and enhanced English proficiency. They discovered that it made it possible for a sizable number of unstructured, independent language learners to become very proficient in foreign language environments. This allows pupils greater autonomy in their studies.

Wen-Ta, et al (2020) have investigated, Effects of mediation, learner autonomy, and pair work collaboration in a 3D virtual environment on vocabulary learning in a Taiwanese context. Their findings showed that virtual environments mediation had a positive effect on facilitating of vocabulary learning. Moreover, individual and pairwise autonomous use, consistent with the nature of the program's design, promoted deeper retention of vocabulary than teacher-directed use.

Sanaeifar and Farsi (2020) examined the effect of static and dynamic on learners' autonomy in the Iran context. They have chosen both male and female students and assigned them two static and dynamic assessment groups. The collected data were analyzed. the results of the data analysis showed that Static assessment had no statistically significant effect in promoting autonomy in EFL learners, whereas dynamic assessment had a statistically significant effect in promoting autonomy in EFL learners.

A study has been done (Orakci, 2021) in three national universities in Turkey. The aim of this study was to explore the relationship between cognitive flexibility, learner autonomy, and reflective thinking, and the mediating role of cognitive flexibility in the effects of reflective thinking on learner autonomy. Participants in this study included 483 student-teachers from three national universities in Turkey. The result of data analysis showed that increasing reflective thinking had an increasing effect on cognitive flexibility and increasing the ability for cognitive flexibility had an increasing effect on learner autonomy. In reviewing the literature, they are a lot of studies which investigated students' autonomy, teacher's centeredness (Hadi, 2018; Hemmati et al.,2022; Lak et al.,2017; Salimi & Ansari,2015) in comparison to the rest of the studies in literature, developing students' autonomy in teacher-centered context through dynamic web-based mediation, seems to be attracted little attention.

Research Questions

most teachers in teacher-centered educational systems, expected students to listen to them just because they are the teachers. They're supposed to listen to the teacher, and responded more favorably to classroom expectations in order to satisfy their teacher's expectations. Maybe the teacher expects them to pay attention because he knows his content so well. It should be noticed that students listen and behave better if the educational system began to move from teacher-centeredness to learner autonomy. These questions are going to be answered to fill this gap.

RQ1: why the web-based dynamic assessment should enhance learner autonomy in grammar learning by exploring the role of both the teachers and learners?

RQ2: how web-based dynamic assessment can move learners from teacher authority to learners' autonomy in the learning process?

METHOD

Participants

A sample of 63 male EFL high school students in the 11th grade who were chosen from a pool of 300 students in all grades based on availability participated in this study. Sixty students from two intact courses were divided into two **groups**. Experimental (N = 30) and controls (N = 30), and three students were outliers. The pupils, whose ages varied from 15 to 16, had intermediate English proficiency as determined by the Nelson test. They spent five years in school studying English as a foreign language. The participants were from Naghadeh, West Azerbaijan, Iran, and their native language was Turkish. Their English language teacher, a TEFL Ph.D. candidate, took part in the study by providing the necessary one-by-one explanations of the study's objectives and methods.

Instruments

Autonomy Questionnaire

The questionnaire created by Zhang and Li's original version served as the study's additional tool (2004). It contained 21 items with a Likert scale of 1 to 5. There are five possibilities for each of the first 11 Likert scale items, ranging from never to always. The second section is multiple-choice, and the participants were instructed to select the response that best matched their beliefs out of a range of 1 (1 point) to 5. (5 points).

Nelson Test

One of the tools utilized in this study to identify homogeneous pupils in both groups was the Nelson test. Two weeks before the start of the trial, the exam was conducted. The exams in the book "Nelson English Language Tests" (Fowler & Coe, 1976) range in difficulty from beginner to expert. Book 1 (Elementary), Book 2 (Intermediate), and Book 3 make up the three sections of the book (Advanced). There are 50 multiple-choice questions on each test. In this study, the test 200 B from Book 2 was chosen (Intermediate). Grammar (in two parts), vocabulary, and reading comprehension made up the test's four sections. Based on the results of the proficiency test, 60 EFL students (out of a total of 63) were chosen as the study's final participants and divided into two groups. Their Nelson test scores were one standard deviation above and below the mean. 30 pupils were therefore divided into each group. It is worth noting that since the Nelson test as a homogeneity test is a standard test, hence its psychometric value of the test is ensured.

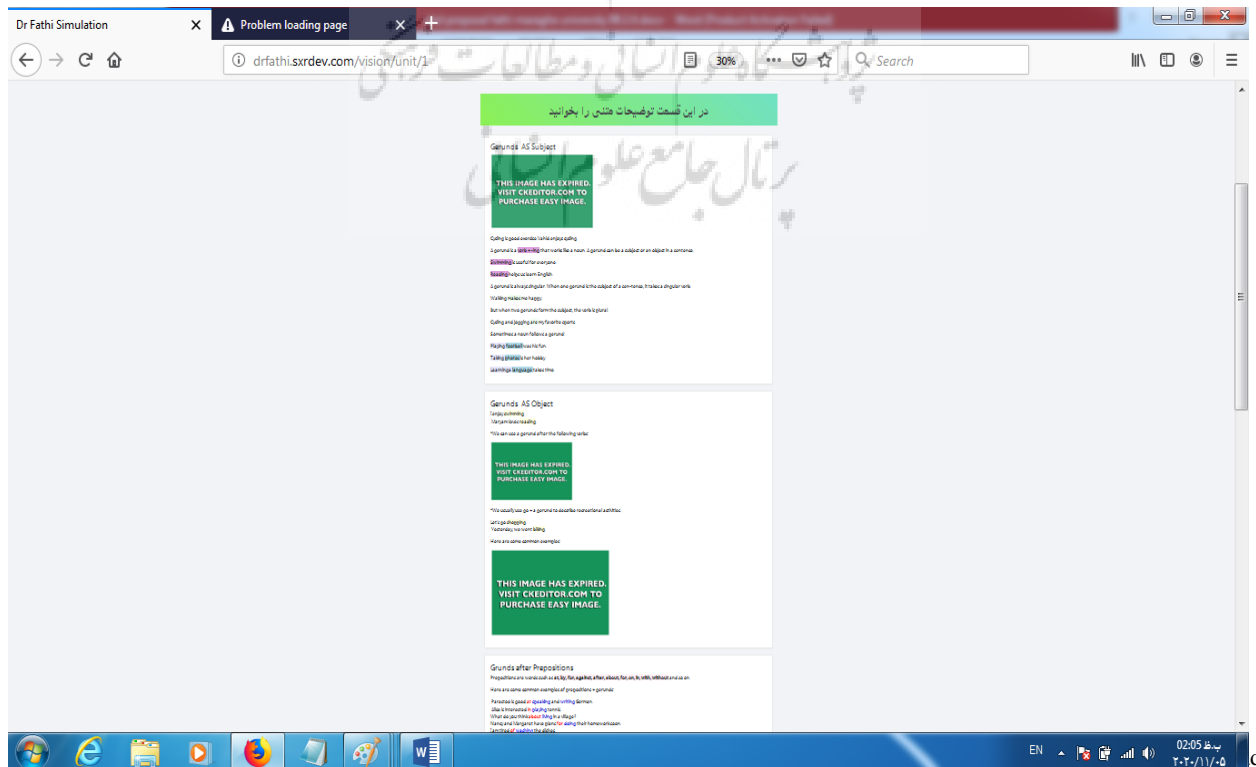
Procedure

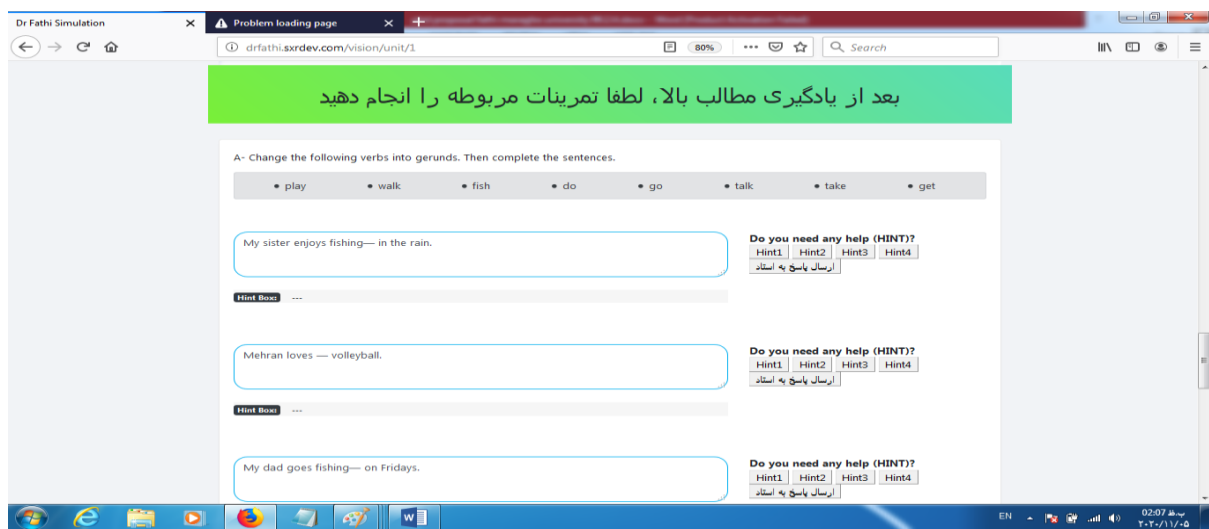
Two weeks before treatment, the Nelson Test was given to 63 high school students in one high school in Naghadeh, Iran, to ensure the homogeneity of the students. Based on the findings of the homogeneity test, a sample of 60 students was chosen, three were of whom deemed outliers since their Nelson test results were one standard deviation above and below the mean. One week prior to the start of the treatment, the researcher administered the Nelson test, followed by the autonomy surveys to the groups of students. Following the phases, the treatment began, and the researcher served as the treatment group's instructor, providing the necessary explanations regarding the web-based training and assessment program, the study's objectives, and its methods one at a time.

The procedure for web-based DA classroom as a treatment group represented in two facets of instruction and assessment: The content of each lesson in web-based DA was developed in the



forms of visual and auditory, learning styles with IP of <http://www.drFathi.com/vision>. By web-based platform, we mean the program that have been designed by a computer and software engineer with an IP of <http://www.drFathi.com/vision>. At the first facet of instruction, each student entered the main page and did the tasks that the teacher as admin planner, pre-planned in advance. In the first facet of DA (instruction), learners watching instructional films, reading grammar points, and listening to the podcast. At the second facet of DA (assessment), learners after receiving instruction at the first facet of instruction by the web immediately receive preplanned quizzes and tests. giving hints were designed in tests and quizzes. all of the phases of instruction and assessment and receiving hints as the following images from the platform show:



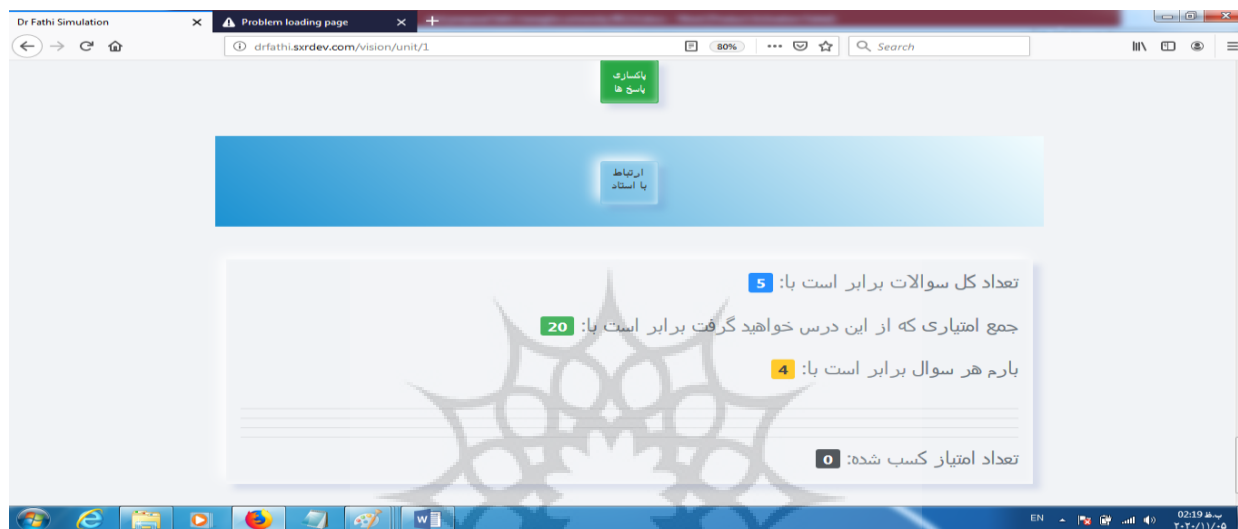


The most important part of the platform was the last image that contained filling-in-blank questions with 4 hints. In the case that the student could not do the task, he received the first hints in the form of feedback but the score was deducted by the program. Giving hints continued four times if the student could not do the exercise and surely the scores in each feedback was lowered lastly, the final score was observed by the student, as the following image shows.

As it is clear, teaching was not done by the teacher, but by the program. The students were needed to diagnose selected grammatical points on the web which implicitly were taught by visual, and auditory learning styles in the forms of watching films, reading text, and listening to

the podcast. After receiving enough instruction, students were given immediate tests (true or false, or multiple tests) by the website to check their understanding of the selected grammatical points.

In process of answering the test, the students who could answer the question, go to the next question, and for those who could not diagnose grammatical points, enough hints in form of feedback were given implicitly. In the second phase of the study, consequently after each feedback, the score was lowered. In fact, in this method of teaching (web-based DA) using the website, we mixed teaching, and testing at the same time in process of learning and led learners to an autonomous level. The existence of visual support and movies were considered as hints that are the gist of dynamic assessment.



After three sessions for each grammar point, a quiz was administrated to the learners in a web-based DA group and during the test, they took the hints via computer in order to find the correct answer. The quizzes were in both production and diagnostic format. It is worth noting that these classroom quizzes were assessed and they were rated by site, but the scores were not analyzed for the final data analysis section. the second facet of DA (assessment), learners after receiving instruction at the first facet of instruction by the web immediately receive preplanned quizzes and tests. giving hints were designed in tests and quizzes.

In the control group, the learners didn't receive the second facet of dynamic assessment. They were required to practice the same grammar points in visual, and auditory learning styles in forms of without quizzes, hints, or implicit cues, watch movies, read texts, and listen to podcasts. There was no concurrent teaching and assessment while the student was studying because the detailed explanation of the grammar was provided online. The primary duties of the learners in the control group were to memorize and apply the grammar, while the teacher's main task was to teach grammar explicitly online on the shad platform. The 12-session course of treatment ended with the administration of the autonomy questionnaire. Non-parametric Mann-Whitney tests were used to analyze these three tests since the ratios of skewness and kurtosis over their standard errors were larger than +/- 1.96, in order to publish the results of the autonomy pretest and posttest.

Results

In the second research question, which aims to investigate the effect of web-based DA on the autonomy of EFL learners before and after treatment, a set of data analysis tests were used. was examined. Table 1 shows the autonomy pre-test and post-test normality

Table 1*Kolmogorov-Smirnov Tests of Normality in Autonomy*

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest Autonomy	0.123	30	0.200*	0.043	30	0.025
Posttest Autonomy	0.126	30	0.200*	0.049	30	0.027

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The Sig value for the pretest of autonomy with df=30 is 0.025, while the Sig value for the posttest of autonomy with df=30 is 0.027. As both of the significance levels are lower than 0.05; thus, the data are not normally distributed in the autonomy test. Therefore, the Mann-Whitney test was used as a nonparametric test. The median scores on the pretest of autonomy were compared between the experimental and control groups using a Mann-Whitney test because the assumption of normality was not maintained. According to the findings, the experimental group's median on the pretest for autonomy was 59.50, while the control group's median was 60 (Table 2).

Table 2*Mean Ranks; Pretest of Autonomy by Groups*

Group	N	Mean Rank	Sum of Ranks	Median
Experimental	30	28.82	864.50	59.50
Control	30	32.18	965.50	60.00
Total	60			

According to the Mann-Whitney test results ($Z = -0.753$, $p > .05$; Table 3), There were no statistically significant differences between the median values of the two groups of study participants on the autonomy pretest. This finding demonstrates that at the beginning of the study and before to the treatment procedures, the members of the control and experimental groups had the same level of autonomy.

Table 3*Mann-Whitney Test; Pretest of Autonomy by Groups*

	Score
Mann-Whitney U	399.500
Wilcoxon W	864.500
Z	-.753
Sig. (2-tailed)	.451

The second null hypothesis of the study may either be accepted or rejected because the assumption of normalcy was not maintained, thus a Mann-Whitney test was conducted to take into account the comparison of the two groups post-test median scores on autonomy. The results of the autonomy post-test showed that the experimental group's language learners had higher levels of autonomy than those in the control group (median = 76.50 vs. 61.50). (Table 4).

Table 4
Mean Ranks; Posttest of Autonomy by Groups

Group	N	Mean Rank	Sum of Ranks	Median
Experimental	30	45.27	1358.00	76.50
Control	30	15.73	472.00	61.50
Total	60			

The results of the Mann-Whitney tests ($Z = -5.66$, $p < .05$) (Table 5) indicated a rejection of the second null hypothesis because, in the autonomy post-test, the experimental group members gained better scores compared with the language learners within the control group.

Table 5
Mann-Whitney Test; Posttest of Autonomy by Groups

	Score
Mann-Whitney U	7.000
Wilcoxon W	472.000
Z	-6.557
Sig. (2-tailed)	.000

Discussion

Assessing learner autonomy through dynamic web-based assessment in language learning is a challenging topic as it leads to important considerations. First students' belief about the teachers' role, Second, the willingness to take responsibility for one's own learning, and third dynamic web-based assessment which mediates between learners and their learning taken into consideration.

In this study, we conceptualize students' LA development as web mediation and their ability to take control of their foreign language learning. The ZPD represents a developmental approach from the present to the future (Valsiner, 2001) as it indicates what a learner can do autonomously tomorrow based on what he or she can do today with mediation. In contrast, "static" evaluations follow a pattern from the past to the present, indicating current development rather than potential development.

As it will be expected from a web-based dynamic group, the learner's responsibility and autonomy increased, because hints and prompts were ranged from implicit to explicit, and learners themselves were responsible for distinguishing the grammatically correct points.

So, in answering the first research question, why dynamic web-based should enhance learner autonomy in grammar learning by exploring the role of both the teachers and learners? The results showed that learners in the web-based treatment group had better levels of autonomy than those in the control group. The results of the autonomy post-test showed that the experimental group's language learners had higher levels of autonomy than those in the control group (median = 76.50 vs. 61.50). (Table 4). As a result, students' expectations about the teacher's authority in the control group may prevent teachers from transferring responsibility to them.

The second question of autonomy is aimed at how web-based dynamic assessment can move learners from teacher authority to learners' autonomy in the learning process?

The result of the post-test reflects learners' beliefs about the role of the teacher for language learning. Those who agree that teachers are facilitators of learning are equipped for autonomous learning; In contrast, students in the control group, who feel the teacher needs to tell them what to do, offer help, and explain things, are not yet ready for LA. The outcomes are consistent with the research conducted by Bhattacharya and Chauhan (2010), who used Web technology to increase students' autonomy when learning English. Similar to our findings, they found that using blogs as

electronic media for language learning helped students develop their autonomy and independence in problem-solving. In line with these claims, Snodin (2013) taken into consideration online studying as a platform to provoke autonomous learning for Asian students. The results show that once a teacher initiates instruction, a "CMS" course management system that uses an external structure that allows learners to self-organize resources within the system, ensure that they accept new learning roles that differ from traditional face-to-face learning, and they may eventually develop self-directed perceptions and behaviors as a result of their participation in this blended learning environment. Sanaeifar and Farsi (2020) examined the effect of static and traditional dynamics assessment on learner autonomy in the Iranian context. The outcome of their investigation showed that dynamic assessment, compared with static assessment, leads to autonomous learning.

Although the present study was subject to some limitations such as the general English level, using just male high school learners, and test items that should be more than the number administered in this study, the future body of research should juxtapose web-based DA strategy in all dimensions, taking into consideration different types of language forms as well as learner differences. Future studies are suggested to examine the reliability of the results over time. (e.g., many years of academic achievement) and throughout different subjects in ESP classrooms. Because there is no "one-size-fits-all" approach to education, web-based DA enables the instructor and learners to explore deeper core ideas for challenging areas such as autonomy. Teacher educators can make suggestions to teachers in the teacher training course, in implementing strategies of web-based DA within the classrooms, hoping to have more encouraged teachers who pay much more attention to this strategy in line with other training interventions.

Above all, we believe that learners need metacognitive knowledge and skills to effectively learn English and meet their language needs in a rapidly changing world. As a knowledge facilitator, not a knowledge presenter, it is the teacher's job to create a computer-aided learning environment, where learners are encouraged to think critically and creatively while developing personal ownership and appreciation of the knowledge gained.

Conclusion

Teachers must accept the role of facilitator, not a content provider. Not only teaching students but also trying to provide conditions in which students can learn. As a facilitator of knowledge, rather than a presenter of knowledge, it is the teacher's job to create a computer-based learning environment where students, through mediation, can promote autonomy in learning and take duty for his or her personal learning. The results of this study show that web-based dynamic assessment in a supportive learning environment gives students the opportunity to continue learning and become more independent than those who receive only static assessments. Unfortunately, Iran's EFL education system is teacher-centered, leaving little room for learner autonomy. On the other hand, student learning depends on the guidance and evaluation of the teacher.

The results of this study show that if web-based dynamic assessments are applied to the right extent, they can give learners space to unleash the spirit of creativity and innovation.

When it said that teachers should take on the role of facilitator in the classroom. In other words, teachers should not control learners' activities, but rather in a supportive atmosphere to help learners implicitly develop language abilities, promoting the students' self-control and making them more independent. Teachers are becoming facilitators of learning. In short, the role of teachers has shifted from instructing students to guiding students to build their own learning. Students must also have a desire and some freedom to participate in the language

teaching and learning process. Dynamic web-based mediation helps learners recognize, engage, or develop effective ways to develop their language skills. To summarize, the major distinguishing feature of Web-based dynamic assessment over traditional dynamic assessment is that, it applies to a larger number of learners at the same time and the result of it, can be reported immediately for interpretation. Another feature of web-based dynamic assessment is that it can make up the time-consuming nature of traditional DA in a fast way and make the students more autonomous.

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