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Çevrim içi dil öğrenimi için yapay zeka tabanlı otomatik yazma değerlendirmesi: uzaktan öğrenenlerin algıları

> AI-based automated writing evaluation for online language learning: perceptions of distance learners

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ÖZ

Bilgi ve iletişim teknolojilerinin yaygınlaşması, öğrenenlerin zamandan ve mekandan bağımsız öğrenme taleplerinin artması ve öğrenen profilindeki hızlı değişimlerle birlikte açık ve uzaktan öğrenme yükseköğretim kurumları tarafından giderek daha fazla benimsenir hale gelmiştir. Giderek artan öğrenci sayısı karşısında açık ve uzaktan öğrenme hizmeti veren yükseköğretim kurumları çevrim içi öğrenmenin etkinliğini ve verimliliğini en üst düzeye çıkarmak için yapay zeka tabanlı teknolojilerden yararlanmaya başlamıştır. Bu teknolojiler arasında yer alan otomatik yazma değerlendirme (OYD) araçları özellikle yabancı dilde yazma etkinliklerinde etkili ve verimli biçimlendirici geri bildirim sağlama potansiyeline sahiptir. Konuyla ilgili alanyazın incelendiğinde, OYD araçlarının yabancı dilde yazma becerisinin geliştirilmesindeki etkililiğinin çoğunlukla öğretmenlerin desteğiyle yüz yüze öğrenme bağlamlarında incelendiği görülmektedir. Ancak, bu OYD araçlarının açık ve uzaktan öğrenme bağlamlarında yabancı dil olarak İngilizce yazma becerisinin geliştirilmesine yönelik kullanımına ilişkin yeterli çalışma olmadığı dikkati çekmektedir. Bu çalışma, dört hafta süren yabancı dil yazma etkinliğini gönüllü olarak tamamlamış yetişkin uzaktan İngilizce öğrenenlerin OYD aracı deneyimlerine ilişkin görüşlerini ortaya çıkarmayı amaçlamaktadır. Çevrim içi açık uçlu anket yoluyla toplanan veriler, öğrencilerin sürece ilişkin değerlendirmelerini, aldıkları otomatik geri bildirimin yazma becerilerine nasıl katkıda bulunduğunu ve OYD'nin uzaktan dil öğreniminde kullanımına yönelik önerilerini ortaya çıkarmıştır. Elde edilen verilerin uzaktan dil öğrenme süreçlerinde OYD araçlarının kullanımının etkinliği konusunda literatüre katkı sağlaması beklenmektedir.

Anahtar Sözcükler: otomatik yazma değerlendirmesi, yabancı dil öğrenme, açık ve uzaktan öğrenme, cevrim içi öğrenme, yazma becerisi

ABSTRACT

With the spread of information and communication technologies, increasing demands for learning independent of time and place, and rapid changes in the learner profile, open and distance learning has been increasingly adopted by higher education institutions. In the face of the increasing number of students, these institutions have started to make use of artificial intelligence-based technologies to maximize the effectiveness and efficiency of online learning. Automated writing evaluation (AWE) tools, which are among these technologies, have the potential to provide effective and efficient formative feedback, especially in foreign language writing activities. Based on the relevant literature, it is seen that the effectiveness AWE tools has been examined in face-to-face learning contexts with the support of teachers. However, there are not enough studies on the use of these AWE tools in open and distance learning contexts. This study aims to reveal the views of adult distance English language learners regarding their AWE tool experiences following a four-week writing activity. Data gathered through online open-ended questionnaire revealed learners' evaluation of the process, how the feedback they received contributed to their writing skills, and their suggestions for the use of AWE in distance language learning. It is expected that the obtained data will contribute to the literature on the effectiveness of the use of AWE tools in distance language learning processes.

Keywords: automated writing evaluation, foreign language learning, open and distance learning, online learning, writing skill

INTRODUCTION

The spread of developing communication technologies in the context of open and distance learning triggers the increasing number of learners to expect interaction directly with the teachers, but higher education institutions are not always sufficient to meet this need with a small number of academic staff. Furthermore, some open universities are quite hesitant to develop digital courses and participate in online teaching as it requires a major change in the roles and responsibilities of academic staff (Guri-Rosenblit, 2018). In large open universities, academic staff are expected to improve themselves in using data provided by digital environments effectively, tracking learning analytics, closely monitoring the learning process of learners, using massive open online courses effectively, developing and using e-learning materials. They also have responsibilities to develop new skills in participating in e-chats and scheduling other online activities. Providing learners with continuous formative feedback in online learning contexts, closely monitoring learning processes, identifying and solving problems that may occur technically, and creating a learning community are among the responsibilities of teachers (Guri- Rosenblit, 2019). Within the framework of these expectations and technological developments, it is seen that open universities have made significant investments in achieving quality in distance education economically. Given the growing number of students, universities are making significant investments in developing e-learning materials, providing digital student support and running administrative systems fluently to provide effective and attractive distance learning experiences. Developing new technologies allow teachers to instantly update learning activities and review learning materials more frequently, and students to receive faster and more effective feedback on their work (Daniel, 2019).

Nevertheless, many open and distance education institutions that have become mega universities with the increasing number of learners face challenges with regard to provide learner, teacher and program interaction. Due to the high number of learners and insufficient academic staff, problems such as delays and disruptions arise in the continuous formative evaluation of learner activities by giving quick and effective feedback at an individual level (Boud & Molloy, 2013). Formative evaluation not only focuses on process, but also it can provide learners with critical thinking skills, reinforce collaborative learning skills, and strengthen problem-solving skills in order to support learners' reinforcement and progress in their learning (Simonson et al., 2015, p. 267). However, the physical distance between the teachers and the learners in the teaching and learning processes in open and distance learning and the use of communication technologies lead to the existence of different types of interaction. For this reason, sometimes evaluation processes can be more limited than traditional educational environments (Puspitasari, 2010, p. 60). For example, in his study Karadağ et al. (2014, p. 94) focused on evaluation systems applied in mega universities, and findings revealed that institutions mostly use multiple choice tests. For both feedback and assessment, institutions have to use their limited workforce for a large number of learners, and since there are often delays in providing feedback, summary assessments consisting of multiple choice tests can be made instead of continuous formative assessments. However, the main purpose of evaluation is not to rate learners, but to provide learners with the feedback they will need throughout the process, to enable learners to use effective strategies to increase the development of learning, to be aware of the difficulties they experience, and to support their development accordingly. For this reason, it is important to carry out continuous assessment practices in the form of formative assessment in e-learning processes (Chaudhary & Dey, 2013, p. 209).

A similar situation exists in the evaluation of the foreign language learning process. It is essential to provide continuous feedback by using different methods so that learners can realize their language skills more clearly in foreign language learning processes. A more efficient process can be achieved when effective and timely formative feedback is provided rather than summative feedback in foreign language learning (Alvarez et al., 2014). Although developments in information and communication technologies have the potential to play an important role in providing feedback to open and distance education programs and providing feedback on learner

performance, it is noteworthy that many open universities limit the use of these technologies in their online programs (Chaudhary & Dey, 2013, p. p. 214). As Anderson et al. (2013, p. 32) emphasized, the most important method necessary for the development of a productive skills, especially writing, is that the learners write regularly and receive formative feedback on their activities from a good teacher.

Software developed with artificial intelligence (AI) technology may have the potential to offer solutions to eliminate the problems encountered in online learning. Thanks to the databases enriched with the data obtained from the learner, the role of artificial intelligence-based software in providing timely feedback and mediating in practice and research becomes more evident. Today, the rapid progress of instructional technologies and the significant increase in the provision of distance courses and online environments make it possible to receive feedback on assignments presented in online learning processes, not only from teachers, but also from peers and software (Hyland & Hyland 2006, p. 22). Artificial intelligence technologies, which have been on the agenda more frequently since the beginning of the 2000s, are developing more and more every day, finding a place for themselves in education as in many fields and shedding light on the future (Roll & Wylie, 2016, p. 582).

With machine learning algorithms, which is one of the developing technologies, it is now possible to closely monitor the performance of learners in a much faster and more effective way, to identify their outstanding skills or deficiencies, to measure their motivation for class participation and study, and to predict the points where they need help. In particular, the spread of online education has led to the rapid and exponential increase in digital data, thus creating large educational data that can be fed by artificial intelligence (Weld et al., 2012, p.161). It is predicted that all these developments can play an important role in the fastest and most effective monitoring of learner performance in online teaching-learning processes, and in providing learners with the feedback they need, just in time, exactly as they need it. As AI-based AWE tools provide real-time feedback that is adjustable to student progress (Zhu et al., 2020), they might have potentials to meet the needs of large number of learners in open and distance contexts. In this study, artificial intelligence is considered as an algorithm-based machine learning fed with computational linguistics and training data used in automatic feedback tools. With machine learning, the automated feedback tool 'learns' by examining the database opened to it, to find from that data the same errors and error patterns written by any learner given it.

There are not many studies focusing on the contribution of AWE in the development of foreign language writing skills (Wilson et al., 2014). When the limited number of studies are examined, it can be concluded that there is a positive relationship between the feedback provided by AWE tools and the improvement of students' academic performance in not only writing skills but also in their foreign language skills in general (Elliot & Mikulua, 2004; Shermis et al., 2008). Some findings from these studies show that AWE helps students reduce the number of grammatical, mechanic, and writing style errors (Kellogg et al., 2010). In the writing processes in which these tools were used, it was observed that the compositions of the learners improved in terms of content and writing quality (Wade-Stein & Kintsch, 2004). The findings of the studies conducted by Shermis et al. (2008) revealed that foreign language learners who receive formative feedback from AWE tools tend to be more interested in writing, their motivation to produce higher quality content increases, and they make writing mistakes less frequently. Studies showing the positive effects of automatic feedback on the quality of learner texts and its contribution to writing proficiency in general are still quite limited (Stevenson, 2016; Stevenson & Phakiti, 2019).

Based on the relevant literature, it is seen that the use of AWE tools has been examined mostly in face-to-face learning contexts with the support of teachers. According to the systematic review of 109 AWE systems in 190 papers Deeva et al. (2020) revealed that the larger share with more than half of the studies (54.1 %) aimed at an in-class educational setting rather than online or blended learning. In other words, in-class implementations of the AWE systems outweigh all the other types. Moreover, a purely online context for AWE systems was described in only 13.8% of the studies. This study might contribute to the relevant literature as it involves

participants from the distant learning context. Also, it might be possible to obtain reliable inferences by including the most important stakeholders of the learning process, namely the learners themselves, who directly affect the foreign language learning process. The fact that the first-hand in-depth data about learner experiences can shed light on course designers and teachers about the necessary improvements that can be made in the evaluation and feedback processes of foreign language writing activities reveals the importance of the research. The research questions of this study, which aims to reveal the experiences of distance foreign language learners on AWE, are as follows.

- 1. How do distance language learners prefer to get feedback?
- 2. What are the perceptions of distance learners towards AWE?
- 3. How does use of AWE contribute to the development of writing skills in a foreign language?
- 4. What are the distance learners' suggestions for the use of AWE tools?

METHOD

Research Design

The aim of this study is to explore the experience of using AWE by distance foreign language learners. In order to serve the purpose of the study, a single case qualitative exploratory case study was employed. Exploratory case study is often viewed as a preliminary step or a prerequisite to more focused investigations. Different from deductively confirming studies, qualitative exploratory case studies aim to inductively generate insights regarding the phenomenon of interest especially when there is lack of sufficient empirical examination on the topic (Ogawa & Malen, 1991). The study included open-ended questionnaire data, documents produced by the AWE tool and the researcher's own on-site-observations. Volunteer participants who responded positively to the call made on a social media platform were introduced to the AWE tool to be used in the study and the participants received unlimited feedback from the AWE tool for four different writing activities that lasted for four weeks. The researcher created an online class on the AWE tool platform and registered the participants. At the beginning of each week the researcher uploaded a task on the online class. The participants had a week to complete their tasks and receive feedback from AI-based AWE tool as many times as they wished. Thanks to the teacher account, the researcher could have a chance to observe learner activities such as frequency of attempts, corrections made following AWE, learner progress graphs, improvements in the written work quality. The field notes from on-site observations were used to verify and elaborate the interview data. At the end of the writing activities, the participants answered an online open-ended questionnaire.

Participants

The study was conducted with the participation of students who were continuing their education or graduated from various programs at open education faculty of a public university. There were 309 participants enrolled in the AWE platform. As this activity was an extracurricular activity and some of the participants were graduates, most of them failed to complete all four writing activities. Therefore, the questionnaire was sent to those who were able to complete all four activities. Of the 79 participants who completed all tasks, 52 of them volunteered to complete the questionnaire. Information about the participants can be seen in Table 1. All participants completed English I and English II as must courses and their proficiency level was A1-A2 according to Common European Framework of Reference (CEFR).

Case N=52 Case N=52 Participants % Ν % п Age Grade ≤30 6 12% 1st year 0 0% 9 >30 88% 2nd year 17% 46 0 Gender 3rd year 0% Female 45 87% 4th year 14 27% Male 7 13% Graduate 29 56% Department Department 2 Sociology 19 37% Political Science & Public Adm. 4% 7 Medical Doc. & Secr. Tra. 2 Social Services 13% 4% Public Rela. & Advert. 4 8% 2 4% History 2 International Relations 4 8% **Computer Programming** 4% 2 **Child Development Business Administration** 4 8% 4% 2 Accounting and Taxation 2 Labor Econ. & Indust. Relat. 4% 4%

Table 1 Demographic Information about the Participants

Instruments

In this study the data were collected from different sources as case studies require data triangulation. According to Creswell (2013), questionnaires, various documents that are relevant to the phenomenon being studied, interviews, artifacts, and on-site observations can be used for data collection in qualitative research. By this way, qualitative researchers can both provide additional information to supplement the data and triangulate the data. In this study, a questionnaire compiled by the researcher, on-site observations and document analysis were used as data collection instruments.

Apart from demographic information (age, gender, department and grade), the questionnaire consisted one closed-ended question addressing feedback preferences of the participants and three open-ended questions that were generated on the basis of objectives of the study and review literature. The questions addressed learners' perceptions of AWE (positive and negative opinions regarding AWE), the contribution of AWE to English writing skills, and suggestions for the use of AWE. The online questionnaire form was enclosed with a covering letter which included information about the purpose of the study, its usefulness, why responses are important, and promise of confidentiality. For the face validity of the questionnaire, the researcher piloted the survey with a group of nine learners who were not included in the study. According to their responses, revisions were made in terms of layout and wording. With regard to the content validity, questions were examined by a subject-matter expert to see if they were actually addressing what they intended to address within the scope of the research questions. As another data collection instrument, the researcher made on-site observations in the online classroom and took field notes. The observations focused on learner engagement and writing skill development based on the revision attempts made by the participants after receiving AWE. In addition, documents produced by the AWE tool including learner progress graphs at task, learner and class level and information on revision frequency of individual learners were used as data.

Data Analysis

Demographic information related questions of the survey were analyzed by using frequency percentages. The responses of the participants for each open-ended question were transcribed, and the data were analyzed using conventional content analysis. The researcher read all data repeatedly to get a clear understanding and highlighted the important statements that are relevant to the research questions. The researcher developed a coding scheme inductively from these data because use of AWE in distance language learning was a relatively new phenomenon. Avse Taskıran

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After the coding scheme, the researcher discussed the codes with a second researcher and revised the codes when necessary until reaching a consensus (Strauss & Corbin, 1998). During this process all data that relate to each code were re-examined by the two coders. As the next step, all the codes obtained were linked with each other on an axis. By this way, which is also called axial coding, all data were placed on an axis (Punch, 2011). Later, the codes containing similar ideas and linked were combined under more general themes. Field notes based on on-site observations and the documents produced by the participants and the AWE tool itself were analyzed following the survey analysis. With the occurring codes and general themes of survey analysis, relevant outcomes of field notes and documents were combined in order to acquire more perspectives and in-depth information on the phenomenon (Strom & Fagermoen, 2012).

Research Ethics

In the whole process from the planning of this research to its implementation, from the collection of data to its analysis, all the regulations specified in the "Ethics Directive of Higher Education Institutions Scientific Research and Publication" were followed. No action contrary to the specifications under the second part of the heading "Actions Contrary to Scientific Research and Publication Ethics" was taken.

Scientific, ethical and citation rules were followed in the writing process of this study; the participants officially agreed to participate in the current study, no modifications were made on the collected data and this study was not sent to any other academic publication medium for evaluation.

Research ethics committee approval information

Name of the committee that made the ethical evaluation: Anadolu University Ethical Board

Date of ethical review decision: 10.02.2020

Ethics assessment document issue number: 41924959-050

FINDINGS

The participants were asked to make preference between getting feedback form AWE tool only, getting feedback from their teachers only, and getting feedback from both sources. The content analysis of the questionnaire revealed three themes which are: perceptions towards the tool, contribution of the tool to English writing skill, and suggestions. Important statements, codes, and themes are displayed in Table 2.

Table 2

Important Statements, Codes, and Themes

Important statements	Codes	Themes
Realized my mistakes and shortcomings with instant feedback We were able to receive feedback whenever we wanted We can recheck the text we have written many times We could reach 24/7, whenever we needed it I see the error right away because it's fast	positive opinions regarding AWE	
Sometimes the feedback becomes overly automatic The tool gives false feedback to correct sentences sometimes The feedback given is not descriptive enough Had a hard time understanding the errors Some feedback is not clear	negative opinions regarding AWE	perceptions
Immediate feedback made me try again and again I checked my mistakes freely anytime I wished I always tried more than once	contribution to practice	
Increased the vocabulary Helped me improve my vocabulary Prompted research to learn vocabulary Led me to look for new or synonyms. Our vocabulary knowledge has expanded	contribution to vocabulary	contribution
Increased the ability to make sentences Feedback was helpful in making sentences I noticed my spelling mistakes and punctuation I could start to construct sentences on my own Each activity with different topic helped me try new sentences and styles	contribution to grammar	to overall writing
Realized that I should expand my vocabulary for writing Realized my writing competence I realized what I did not know and what I knew wrong I had a chance to see my mistakes and improve myself	language awareness	
Directing learners to instructional videos Making explanations and suggestions for mistakes and punctuation	supplementary studies examples for correction	
More specific wording in the feedback Some tips and feedback in Turkish Underline the exact part that is problematic Provide more understandable and explanatory feedback Display the corrected versions of mistakes	explicit correction	suggestions
Writings of others also viewed to compare performance	compare performance	

The first research question intended to find out how distance language learners preferred to get feedback. None of the participants preferred getting feedback from the teacher only option; whereas, 69.2% of them preferred getting feedback from both AWE tool and the teacher. Also, 30.8% of them stated that they were content with the AWE tool feedback only. It was revealed that most of the participants preferred getting feedback from both the teacher and AWE tool. Some of the original responses of participants of this study are as follows:

"It can be a useful system in daily and individual work. Of course, the teacher should see it afterwards."

"In addition to the feedback here, it would be great if there were teacher feedback as well in order to understand our mistakes better."

"The system should give automatic feedback first and then the teacher should make the final touch."

The second research question intended to explore the learners' perceptions regarding their experience with the AWE tool. Based on their responses, the perceptions of the participants were grouped as positive and negative opinions. Considering that the participants were all distance learners, they often expressed how useful the tool was as it provided them with immediate feedback whenever they needed. On the other hand, participants stated that they were not always content with the feedback they received from the tool. They claimed that some feedback was too implicit to understand. Some of the learners' original statements about their positive opinions are as follows:

"It is also very difficult to find someone who can give feedback at that moment. It was nice to have an application at our fingertips that could return to us at any time."

" I can see errors and alternatives very quickly because the feedback is provided by the system within seconds. The system is like a one-on-one study or private lessons, that is, it is more efficient than other lessons that it only takes care of me."

" Great to receive instant and unlimited feedback and to see the last 10 changes we have made on a progress graph."

" With the immediate feedback we can work on the task over and over without distraction."

"I had a hard time understanding the errors because the feedback was implicit and not detailed enough."

"The system does not show details for the error. I could not understand where exactly my mistake was."

The third research question aimed to find out how the use of AWE contribute to the development of writing skills in a foreign language. Regarding the contribution to writing skill theme, the data revealed codes such as contribution to practice, contribution to vocabulary, contribution to grammar, language awareness. Some of the original responses of the participants are as follows:

"While I was trying more than once and thinking why and what to write, I learned words, sentences."

"We can see and correct the mistakes that we need to fix."

" When I want to write a paragraph, I worry if I wrote it correctly. This anxiety also undermines my self-confidence. Thanks to this AWE tool, I had the chance to see my mistakes and improve myself. I felt comfortable and had full self-confidence."

" I saw how good my writing was so my self-confidence has increased."

Document analyses and on-site observations were in line with the participants' claims. When the learner participation in the activities in the online classroom is examined, it can be seen that all the participants, except for six, made between at least five to 38 checks for different writing activities at different times. This might show how much learners engaged in the learning process and how often they kept trying for having better results. Below, in Figure 1, an example for a learner's progress graph and check number can be seen. Below the example is the whole class progress graph showing frequency of participants' checks (Figure 2). As seen in the figures, participants tried many times to make changes in their writing based on the AWE. They could observe their own progress after each check in the form of their language proficiency level depending on the quality of their writing.

Figure 1

A Participant's Progress

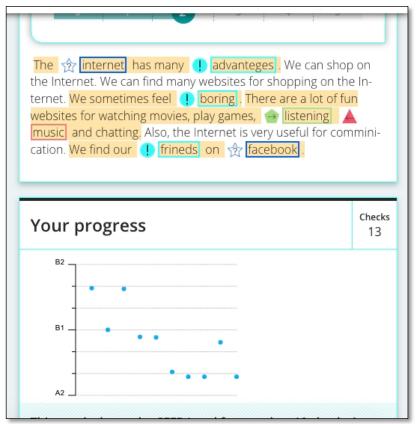
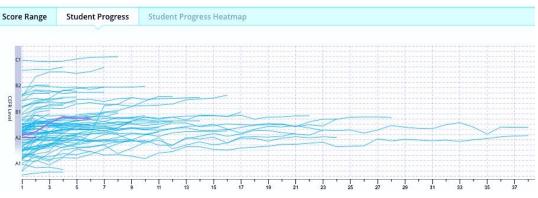


Figure 2 Class Progress Graph of a Writing Task



The fourth research question aimed to explore the participants' suggestions regarding the use of AWE in English writing. According to the online learners, AWE tools would be more efficient if they provided more explicit feedback, examples for correction, supplementary materials for practicing the problematic language areas, and comparative examples of the peers' writings. Similarly, participants in Wang and Wang's (2015) study asserted that AWE was beneficial for detecting fundamental form errors during the preliminary revision process, but still it was not sufficiently clear, and so human communication and concrete teacher comments during the following revision stage were needed. Some of the original responses of the participants in this study are as follows:

"If the hints in the system were in Turkish, I could understand. I could have corrected it more easily if it didn't just paint it yellow, but underlined the exact problematic place in the sentence."

"In addition to feedback, there can be a short simple grammar lesson in the tool to correct the grammatical error. (For example: If I made a mistake with the Present Perfect Continuous Tense, the system can suggest a link on that topic.) It can also make clearer suggestions."

"When AWE tool sees an error, instead of asking us to correct it, it would be much better if it said clearly where it came from or suggesting alternative sentences."

"I think it would be nice if other friends could view and compare their posts."

DISCUSSION and CONCLUSION

More than two third of the participants claimed that they preferred to get feedback from both AWE tool and the teacher. There might be different reasons behind this preference. Firstly, learner responses indicated difficulties in understanding some implicit feedback provided by the AWE tool. Therefore, teacher feedback might help them figure out the flaws in their texts . Also, learners might have a chance to eliminate most of the surface level mistakes thanks to AWE and this advantage might help teachers and learners use class time more effectively (Ariyanto et al., 2021). Teachers are allowed to devote more feedback to higher-level writing skills like content and organization, while AWE addresses lower-level skills, such as grammar. Similarly, participants in Sherafati et al.'s (2020) study expressed their preference in favor of both sources of feedback. The qualitative data in the study indicated that participants believed the benefits of AWE, but they still stated that it would be more efficient to use it in the company of a teacher. In another study AWE is found to be effective if provided with teacher feedback (Link et al., 2020).

Positive opinions of learners regarding AWE are generally centered around the opportunity to access and receive feedback anytime, anywhere. Learners have repeatedly emphasized how valuable it is for them to have such an opportunity in the context of distance learning. Learners claimed that being able to receive unlimited and instant feedback positively affects their English writing development, and they stated that the learning process is more efficient thanks to AWE. This finding is supported by the relevant literature (Cheng, 2017; Hsieh et al., 2017; Link et al., 2020; Zhang & Hyland, 2018). AWE plays an important role in the active participation of students in the revision process and is seen as a useful formative assessment resource in terms of providing frequent and process-oriented diagnostic assessment. Eventually, AWE has the potential to enable student engagement (Zhang & Hyland, 2018). Participants' responses revealed the advantages of AWE in online learning process in terms of receiving feedback without time, place, and amount limitations and AWE often supports to reduce the need for a teacher. In other words, AWE can act as a facilitator in meeting the urgent need of language learners for feedback without delays. Many learners claimed that they practice without giving up thanks to the instant progress graph and proficiency level indicators provided by the AWE tool. It might be concluded that in addition to the formative feedback on the language structure presented with AWE, the feedback on individual progress in the learning process is also appreciated by the online learners.

Negative opinions of the participants regarding their AWE experience are centered around not being able to understand and make use of the AWE because it was too implicit and not detailed enough. Learners mentioned about problems with understanding the instructions and feedback. Based on the responses, it can be deduced that the language proficiency of the learners is not advanced enough to understand some contents of the AWE tool and make corrections. That is why some participants suggested providing native language interface, instructions and feedback support. Participants complained that AWE tool does not provide native language support, so cannot fully benefit from AWE. Moreover, the participants emphasized that the indirect and implicit feedback provided by the tool makes it hard to understand the source of their mistakes, and they cannot receive adequate guidance. Similarly, the findings of Zang and Hyland's (2018) study revealed that some error categories were not diagnosed by the AWE tool and AWE tended to highlight, rather than correct, student errors. Therefore, it can be concluded that two different sources of feedback, teacher and AWE tool might be applied together as they can complement each other. In Figure 3, an example of a participant's AWE application can be found. When the texts are analyzed, it can be seen that the learner failed to correct some of the mistakes despite trying 25 times. In the last check AWE tool still colors the problematic parts but does not provide elaborative feedback. For example, for the sentence "She teach geography", the tool might provide pop-up explanation box in which source of the mistake can be elaborated. Moreover, the analyses of learner texts revealed that AWE mostly provided guidance and support for lower-level writing skills such as spelling, punctuation, sentence structure, and grammar rather than higher-level skills such as style, ideas and elaboration, and organization (Wilson & Czik, 2016).

Figure 3

Example of a Participant's AWE Application: From First Check to Last Check

 My best friend is Nancy. She is 30 years old and she has two daughter. She is teacher of at a phiphschool. She teach geography. She lives in a small town. She is a kind person. She is host to my she daughter is very sweet. Nacy likes chatting and she is very smart. She of make jokes all the time. We hang out together for shopping or sightseeing. We sometimes go for holiday together.

 My best friend is Nancy. She is 30 years old and she has two daughters. She is teacher at a high school, She teach geography. She lives in a small town. She is a kind person. She is my neighbour. Her daughter is very sweet. Nacy likes chatting, and she is very smart. She always makes jokes. We hang out together for shopping or sightseeing. We sometimes go on holiday together.

 Your progress
 Checks 25

Another striking finding of the research is the consensus of the participants regarding the contribution of AWE to the development of English writing skills. Responses indicated that AWE tool facilitates writing revision by motivating learners to try as many times as they want. This is a parallel finding with the relevant literature (Alharbi, 2016; Cotos et al., 2020; Curry & Riordan, 2021; Stevenson & Phakiti, 2014). According to researchers, AWE provides immediate, recursive and individualized feedback and provides multiple opportunities for review, which in return enhances learners' reviewing skills (Cotos, 2015; Stevenson & Phakiti, 2014). Participants of the study also highlighted that thanks to AWE, they tried to learn new words, practiced how to use them in sentences, improved their grammar and sentence structure, and finally became more aware of their language competence. Learners pointed out that upon receiving instant AWE for each writing activity in the online classroom, they were able to realize their problems with the target language or the subjects they need to improve, as well as the structures they misunderstand.

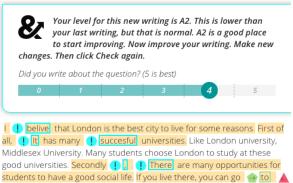
In addition to the responses of the participants, the document analyses indicated improvement in the written work. After making more than one check, most of the participants could correct their mistakes especially those related to mechanics, spelling and lexicon. Some of the sample writings of the participants can be seen below in Figure 4 and 5. Figure 4 shows the first check and Figure 5 shows the final check for the written works. It is seen that participants tried many times to correct their mistakes and improve the quality of their written work. Findings of the related studies also confirm AWE's contribution to learners' academic performance both in writing and in foreign language learning in general (Shermis et al., 2008). Researchers claim that AWE enhances writing development by assisting learners to reduce the number of errors in grammar, mechanics, and style (Kellogg et al., 2010).

Ayşe Taşkıran

Çevrim içi dil öğrenimi için yapay zeka tabanlı otomatik yazma değerlendirmesi: uzaktan öğrenenlerin algıları

Figure 4

First Check of a Sample Writing



students to have a good social life. If you live there, you can go et to cinemal or you can listen to your favourite singer at the concert hall. The other important reason is environment. There are many parks and green areas. If you have a bad times you can visit these good places and you can relax. Morover, London is the cheapest city in the world. To live this city, you do not have to have lots of money. Finally, London is the best city in every condition for everyone.

Figure 5 Final Check of a Sample Writing

I believe that London is the best city to live for some reasons. Firstly, there are many successful universities, such as London University, Middlesex University. Many students choose London to study at these high quality universities. Secondly, there are many opportunities for students to have a good social life. If you live there you can go to the cinema or you can listen to your favourite singer at the concert hall. Thirdly, this city is convenient for everybody. There are many parks and green areas where you can visit and relax when you are stressed. Moreover, London is the cheapest city in the world. In order to live in this city, you do not need to have lots of money. Many cultural activities, festivals and concerts are free. Finally, London is the best city for everyone in many aspects.

Your progress

This study aimed to reveal the views of adult distance English language learners regarding their experiences after experiencing AWE. The participants were adult online language learners and the study was conducted as an extracurricular activity on a voluntary basis. Data gathered through open-ended questionnaire responses, on-site observations and document analyses revealed that the participants were satisfied with the AWE and this reflected on their writing quality. This finding is significant because it might offer an alternative solution to the problem of providing individual formative feedback in the context of online learning. Findings of this study indicate that AWE improves students' revision skills through multiple revision possibilities and unlimited, instant feedback, which is mostly appreciated by the participants. The participants of this study found AWE very beneficial and emphasized that it contributed to their English writing skills both in terms of grammar and vocabulary. Learners claimed that they made many trials to reduce their mistakes with the instant AWE whenever they needed. This effort and achievement motivation might be due to the attractiveness of AWE. Similarly, findings of Wang and Wang's (2012) study indicates the benefits of AWE as it encourages learners to practice continuously and recognize their difficulties in writing.

Checks

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Thanks to the development of AI-based technologies, it is now possible to provide instant, formative feedback responsive to individual learner differences (Ai, 2017). The availability of such sources for online learning processes is considered a substantial gain for online learners. As Hockly (2019) maintains, AWE is promising in providing individual feedback in crowded

online classrooms and distance learning contexts although there are areas of improvement such as the feedback provided implicitly, the need for explanations pointing to the source of the error, and the need for more guidance especially for students with low language proficiency. As a finding that supports this, the participants in this study also argued that AWE would be more effective when used together with teacher feedback. AWE can be recommended to complement, rather than replace formative teacher feedback (Woodworth & Barkaoui, K2020) especially for online learners with lower language proficiency levels. AI-based technologies are evolving to make better detections with relevant inputs. The more digital data from student activities, the better the performance evaluations of individual learners.

Limitations of the Study

This study has some limitations regarding the sample, the research context, and the research design. The sample selected for this study was 52 learners who were studying at or graduated from open education faculty in a public university. Therefore, the results obtained in this study may not be applicable to the distance or online learners outside of this designation. Also, the research context included AWE on a specific tool, Write & Improve. There are different AWE tools that might have different effects on learners' perceptions. In addition, this study was designed as a single case exploratory case study and utilized different data sources such as open-ended questionnaire, documents and on-site observations, but better conclusions could have been made by also adding focus group interview data.

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As the author, I do not have any support or acknowledgment concerning the research process.

Statement of Contribution Rate

The author of this research has personally completed all the processes of the research.

Declaration of Conflict of Interest

As the author of the study, I hereby declare that I have no conflict of interest.

Statement of Publication Ethics

All the rules stated in the "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with in the whole process from the planning of this research to its implementation, from data collection to data analysis. None of the actions specified under the heading "Actions Contrary to Scientific Research and Publication Ethics", which is the second part of the directive, have been taken.

Scientific, ethical and citation rules were followed in the writing process of this study; No falsification has been made on the collected data and this study has not been sent to any other academic media for evaluation. This section under the heading Method is mandatory. Case reports should include information that the informed consent/consent form was signed.

All authors agree that the author list is correct in its content and order and have seen and approved the manuscript being submitted and agree to its submission.

Research ethics committee approval information

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Ayşe Taşkıran

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GENİŞLETİLMİŞ ÖZ

Giriş

Artan öğrenci sayısı ile mega üniversiteler haline gelen birçok açık ve uzaktan eğitim kurumu, öğrenci, öğretmen ve program etkileşimini sağlama konusunda zorluklarla karşılaşmaktadır. Öğrenen sayısının fazla olması ve akademik kadronun yetersiz olması nedeniyle öğrenen etkinliklerinin bireysel düzeyde hızlı ve etkili geri bildirim verilerek sürekli biçimlendirici değerlendirilmesinde gecikme ve aksama gibi sorunlar ortaya çıkmaktadır (Boud ve Molloy, 2013).

Yapay zeka (YZ) teknolojisi ile geliştirilen yazılımlar, çevrim içi öğrenmede karşılaşılan sorunları ortadan kaldıracak çözümler sunma potansiyeline sahip olabilir. Öğrenenden elde edilen verilerle zenginleştirilmiş veri tabanları sayesinde, makine öğrenmesi algoritmaları ile öğrenenlerin performanslarını çok daha hızlı ve etkili bir şekilde yakından takip etmek, güçlü ve zayıf yönlerini tespit etmek, derse katılım ve ders çalışma motivasyonlarını ölçmek artık mümkün hale gelmiştir. YZ tabanlı otomatik yazma değerlendirme (OYD) araçları, öğrencilerin gelişimine göre ayarlanabilen gerçek zamanlı geri bildirim sağladığından (Zhu vd., 2020), çevrim içi uzaktan eğitimde çok sayıda öğrencinin ihtiyaçlarını karşılama potansiyeline sahip olabilirler. İlgili literatüre dayalı olarak, OYD araçlarının kullanımının daha çok öğretmenlerin desteğiyle yüz yüze öğrenme bağlamlarında incelendiği görülmektedir.

Bu çalışma, uzaktan öğrenme bağlamından katılımcıları içerdiğinden ilgili literatüre katkıda bulunabilir. Ayrıca öğrenme sürecinin en önemli paydaşları olan yabancı dil öğrenme sürecini doğrudan etkileyen öğrenenlerin kendilerinin dâhil edilmesiyle güvenilir çıkarımlar elde etmek mümkün olabilir. Çalışmanın araştırma soruları aşağıdaki gibidir:

- 1. Uzaktan yabancı dil öğrenenlerin geri bildirim tercihleri nelerdir?
- 2. Uzaktan yabancı dil öğrenenlerin OYD'ye yönelik algıları nelerdir?
- 3. OYD kullanımı yabancı dilde yazma becerilerinin gelişimine katkı sağlıyor mu?
- 4. Uzaktan öğrenenlerin OYD araçlarının kullanımına ilişkin önerileri nelerdir?

Yöntem

Araştırmada tek durum desenli durum çalışması kullanılmıştır. Bu tür çalışmalar genellikle daha odaklı araştırmalar için bir ön adım veya ön koşul olarak görülür. Çalışma, açık uçlu anket verilerini, OYD aracı tarafından üretilen belgeleri ve araştırmacının kendi yerinde gözlemlerini içermektedir. Bir sosyal medya platformunda yapılan çağrıya olumlu yanıt veren gönüllü katılımcılar, çalışmada kullanılmak üzere OYD aracı ile tanıştırılmış ve katılımcılar, dört hafta süren dört farklı yazma etkinliği için OYD aracından sınırsız geri bildirim almıştır. Öğretmen hesabı sayesinde araştırmacı, deneme sıklığı, OYD sonrasında yapılan düzeltmeler, öğrenen ilerleme grafikleri, yazılı çalışma kalitesindeki iyileştirmeler gibi öğrenci etkinliklerini gözlemleme şansına sahip olmuştur.

Araştırma, bir devlet üniversitesinin açıköğretim fakültesinde öğrenimine devam eden ve çeşitli programlarından mezun olan öğrencilerin katılımıyla gerçekleştirilmiştir. 79 katılımcı dört yazma etkinliğinin hepsini tamamlayabilmiş ve aralarından 52'si çevrimiçi anketi yanıtlamaya gönüllü olmuştur. Anket, demografik bilgilerin (yaş, cinsiyet, bölüm ve sınıf) yanı sıra, katılımcıların geri bildirim tercihlerini ele alan bir kapalı uçlu soru ve çalışmanın amaçları ve literatürün gözden geçirilmesi temelinde oluşturulan üç açık uçlu sorudan oluşmuştur. Sorular, öğrencilerin OYD hakkındaki algılarını, OYD'nin İngilizce yazma becerilerine katkısını ve OYD'nin kullanımına yönelik önerileri ele almıştır. Diğer bir veri toplama aracı olarak araştırmacı, çevrimiçi sınıfta yerinde gözlemler yapmış ve alan notları almıştır. Ayrıca OYD aracının ürettiği etkinlik dönütleri, öğrenci ve sınıf düzeyinde öğrenen ilerleme grafikleri ve bireysel öğrenicilerin revizyon sıklığı bilgilerini içeren dokümanlar veri olarak kullanılmıştır.

Anketin demografik bilgileri ile ilgili soruları frekans yüzdeleri kullanılarak analiz edilmiştir. Katılımcıların her bir açık uçlu soruya verdikleri yanıtlar yazıya dökülmüş ve veriler geleneksel

içerik analizi kullanılarak analiz edilmiştir. Saha gözlemlerine dayalı saha notları ve OYD aracının kendisi tarafından üretilen belgeler anket analizinin ardından analiz edilmiştir.

Bulgular

İlk araştırma sorusu, uzaktan dil öğrenenlerin geri bildirim tercihlerini bulmayı amaçlamıştır. Katılımcıların hiçbiri yalnızca öğretmenden geribildirim almayı tercih etmemiştir; %69,2'si ise hem OYD aracından hem de öğretmenden geri bildirim almayı tercih etmiştir. Ayrıca %30,8'i yalnızca OYD aracı geri bildiriminden memnun olduklarını belirtmiştir. Anketin içerik analizi sonucunda araca yönelik algılar, aracın İngilizce yazma becerisine katkısı ve öneriler olmak üzere üç tema ortaya çıkmıştır. İkinci araştırma sorusu, öğrencilerin OYD aracıyla deneyimlerine ilişkin algılarını keşfetmeyi amaçlamıştır. Katılımcıların verdikleri yanıtlara göre algıları olumlu ve olumsuz görüsler olarak gruplandırılmıştır. Uzaktan öğrenenler tarafından aracın ihtiyaca yönelik anında geri bildirim sağlamasının ne kadar yararlı olduğu sıklıkla dile getirilmiştir. Öte vandan katılımcılar bazı geri bildirimlerin anlaşılamayacak kadar örtük olduğunu ifade etmiştir. Üçüncü araştırma sorusu, OYD kullanımının yabancı dilde yazma becerilerinin gelişimine katkı sağlayıp sağlamadığını bulmayı amaçlamıştır. Yazma becerisine katkı temasına ilişkin veriler, uygulamaya katkı, kelime dağarcığına katkı, dilbilgisine katkı, dil farkındalığı olarak kodlar ortaya çıkarmıştır. Dördüncü araştırma sorusuyla ilgili olarak, katılımcıların yanıtları, tamamlayıcı calısmalar önerme, düzeltme icin örnekler sunma, acık ve net geri bildirim ve performansı karşılaştırma fırsatları sunma önerilerini ortaya çıkarmıştır.

Doküman incelemeleri ve yerinde gözlemler, katılımcıların ifadeleriyle ile uyumlu bulunmuştur. Çevrimiçi sınıftaki etkinliklere öğrenen katılımı incelendiğinde, altı kişi hariç tüm katılımcıların farklı zamanlarda farklı yazma etkinlikleri için en az beş ila 38 arasında deneme yaptığı görülmektedir. Bu, öğrencilerin öğrenme sürecine ne kadar katıldığını ve daha iyi sonuçlar elde etmek için ne sıklıkla denemeye devam ettiklerini göstermektedir.

Tartışma ve Sonuç

Katılımcıların üçte ikisinden fazlası hem OYD aracından hem de öğretmenden geri bildirim almayı tercih ettiklerini belirtmişlerdir. Ayrıca öğrenciler, OYD sayesinde yüzeysel ve mekanik hataların çoğunu ortadan kaldırma şansına sahip olabilir ve bu avantaj, öğretmenlerin ve öğrencilerin ders zamanını daha etkili kullanmalarına yardımcı olabilir (Ariyanto ve diğerleri, 2021). Öğrencilerin OYD ile ilgili olumlu görüşleri genellikle her zaman, her yerde geri bildirim alma ve diledikleri kadar geri bildirim alma fırsatı etrafında toplanmıştır. Öğrenciler, uzaktan eğitim bağlamında böyle bir fırsata sahip olmanın kendileri için ne kadar değerli olduğunu defalarca vurgulamıştır. Öğrenciler, sınırsız ve anında geri bildirim alabilmenin İngilizce yazma gelişimlerini olumlu etkilediğini ve OYD sayesinde öğrenme sürecinin daha verimli olduğunu ifade etmiştir. Bu bulgu ilgili literatür tarafından desteklenmektedir (Cheng, 2017; Hsieh vd., 2017; Link vd., 2020; Zhang ve Hyland, 2018). Katılımcıların OYD deneyimlerine ilişkin olumsuz görüşleri, OYD 'nin çok örtük ve yeterince ayrıntılı olmaması nedeniyle OYD 'yi anlayamama ve ondan yararlanamama etrafında toplanmıştır. İfadelerden yola çıkarak, öğrencilerin dil yeterliliklerinin OYD aracının bazı içeriklerini anlayacak ve düzeltmeler yapacak kadar ileri düzeyde olmadığı sonucuna varılabilir.

Araştırmanın bir diğer dikkat çekici bulgusu, OYD 'nin İngilizce yazma becerilerinin gelişimine katkısı konusunda katılımcıların ortak görüşüdür. Yanıtlar, OYD aracının öğrencileri istedikleri kadar denemeye motive ederek revizyon yapmayı kolaylaştırdığını gösterdi. Bu bulgu ilgili literatürle paralel bir bulgudur (Alharbi, 2016; Cotos vd., 2020; Curry ve Riordan, 2021; Stevenson ve Phakiti, 2014). Belge analizleri de aynı şekilde yazma becerisindeki gelişmeyi göstermiştir. Birden fazla deneme yaptıktan sonra, katılımcıların çoğu özellikle mekanik, imla ve sözcük kullanımı ile ilgili yanlışlarını düzeltebilmiştir.

Açık uçlu anket yanıtları, yerinde gözlemler ve belge analizleri yoluyla toplanan veriler, katılımcıların OYD 'den memnun olduklarını ve bunun yazma kalitelerine yansıdığını ortaya koymuştur. Bu bulgu önemlidir çünkü çevrimiçi öğrenme bağlamında OYD bireysel,

biçimlendirici geri bildirim sağlama sorununa alternatif bir çözüm sunabilir. OYD kalabalık çevrimiçi sınıflarda ve uzaktan eğitim bağlamlarında bireysel geri bildirim sağlama konusunda umut vericidir.