

EFL Students' Personalized Reading Experiences and its Influence on Engagement and Online Presences

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Abstract

These days, screen reading has been widely adopted and discussed by school teachers and researchers. However, few studies have been conducted to formally evaluate the effectiveness of screen reading in improving EFL students' English reading comprehension, not to mention investigating the factors affecting their reading comprehension outcomes. In this study, a personalized electronic reading approach was proposed for an EFL reading comprehension course; moreover, a learning analytics approach was used to analyze factors affecting the students' personalized reading comprehension outcomes. A 14-week research design was implemented with the online personalized reading approach using Microsoft Teams as the platform for facilitating and recording peer-to-peer interactions during the screen reading process. In addition, the STUDENTS' perceptions were surveyed at the end of the 14 weeks. The results show that the experimental group was more engaged and motivated with the use of a personalized e-book reading program and that the group with personalized feedback showed more interaction according to learning analytics data which was collected through the LMS.

Keywords: EFL, Personalization, Learning Analytics, Online Presences, Screen reading

Introduction

With the assist of developing technology, reading for entertainment and educational purposes has changed too. Merging personalized electronic reading with Learning Analytics might advance the changing face of reading by enlightening choices that reduce development time and shorten the iteration process while improving their influence, hence nurturing its adoption. - Kennedy et al. (2008) claim that electronic records from technology-based learning environments allow scientists and analysts to identify various user behaviors and provide empirical evidence to illustrate this by demonstrating how user data can be effectively collected and analyzed. Innovative practices such as Learning Analytics (LA) provide insight into the processes and help to advance the common educational scenarios benefiting from data-driven approaches. LA aims to measure, collect, analyze and report data from learning tools, such as Learning Management Systems (LMS) or educational software and web-pages (Long & Siemens, 2011). Besides, LA also extracts useful information about how students learn with the aim of comprehending and optimizing their learning processes and contexts (Sclater, 2017). The current study examines how personalized e-reading experiences affect the perceptions of the primary school learners in an EFL class in a secondary school in Turkey together with its influence on reading comprehension in the output of the learner's perceived participation by using one form of pedagogical intervention: personalized electronic reading.

In this study, using personalized design elements to improve reading and online presences was examined. The main hypothesis of the study was that personalized electronic reading methods could be facilitated to create an engaging and educationally effective web page. The second research objective in this study was to determine how learning statistics could be used to create more or less engaging and educationally effective through personalized design approaches.

Theoretical Framework Community of Inquiry Presences

The presence of various teaching methods is essential to the achievement of expected learning performance. It is the essential key to balance the social and cognitive presence throughout the investigative operation. Teaching presence is also defined by Garrison and Arbaugh (2007) as a significant determinant of student satisfaction, perceived learning, and sense of community. The research conducted by Akyol et al. (2010) shows that teaching is necessary if perceived learning and fulfillment is to be accomplished, information acquisition, involvement and consistency of responses to be developed.

Any collaborative practices in online teaching and learning need effective oversight by teachers. Collaboration is not assured when grouping students without appropriate directions. Therefore, it is undeniable the value of teaching presence in online collaborative learning. The role and engagement of the teacher in online teaching and learning are important. The teacher promotes a collaborative atmosphere for learning, and teaching and learning are mutual experiences. Garrison (2009) introduced an Online Learning Model named Community of Inquiry (CoI), which facilitates collaboration with the aim of creating, fostering and confirming understanding between teachers and students.

Garrison et al. (2000) maintain that the main requirements of teaching presence are the recognition of appropriate social information, the creation of interactions that promote thought and expression and the identification and assessment of learning outcomes. The teaching presence roles are grouped into three elements: development and

management, discourse assistance, and instruction. Each type correlates with a series of barometers. According to Garrison et al. (2000), the first element of teachers' presence is preparing curricula, activities and timetables. Design sets the scene and learning potential. The formation of a CoI and the production of shared learning environments is a special concern. Garrison et al. (2000) define the second aspect, which is reflection and discourse, to activate and promote personal significance and form and affirm shared understanding. Discourse facilitation includes pedagogical, interpersonal, and operational matters. The learning experience must be both a cognitive and a constructive learning atmosphere and it must regard information, perception, and context as essential parts of a whole. Garrison (2011) states that teaching presence is unachievable in an educational atmosphere without an experienced and conscientious teacher who can identify ideas and topics that merit learning, establish a conceptual order, organize the activities of learning, assist discourse, include additional information resources, and identify misconceptions.

The emergence of Information Communication Technology (ICT) has enabled teachers and learners to work in varied e-learning environments which facilitate learning at any time and any place. However, as functional as it is, learners' belonging to these environments remains a question. In that sense, social presence was initially proposed by Short et al. (1976), aiming to highlight the difference between traditional classroom communication and e-learning classroom interaction. In their paper, the concept is defined as "the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships." Later on, many researchers attempted to define social presence, yet there seems to be no clear definition (Walther & Burgoon, 1992; Svenning & Ruchinskas, 1984).

While describing social presence, three dimensions of social presence were offered in the literature; online communication, social context and interactivity (Tu, 2000, 2002). The social context consists of concepts as privacy, task orientation, topics and social processes. Online communication refers to learners' language use while learning to express themselves, and lastly, interactivity

encompasses the mutual communication forms. In their study, Tu and McIsaac (2002) found that these dimensions of social presence should be enhanced to support online classes as they affect the quality of the learning process. Along with other presences, social presence has been perceived as one of the “essential” presences by many researchers.

The more learners develop trust and belonging, the more the learning environments become functional. In his study, Whiteman (2002) suggests that learners feel more comfortable if they share an affiliation and common values. Also, if the environment lacks social presence, learners may see it as impersonal and consequently, the information exchange will decrease (Leh, 2001). These social behaviors include sharing a personal anecdote, greetings, discussing a topic, joking, etc. It is suggested by the author that these acts are inseparable parts of online learning environments and they display the significance of interaction with other participants.

Even though the benefits of social presence are agreed upon, what should be done to enhance social presence in e-learning environments is still being discussed. In his study, Aragon (2003) offers several practical strategies under three categories (1) course designers, (2) instructors and (3) participants to support social presence in the online learning environments. Some of them are as follows: Include Student Profiles, Incorporate Audio, Structure Collaborative Learning Activities, Provide Frequent Feedback, and Strike up a Conversation. The researcher suggests that these strategies should not be taken for granted and for future research, they should be investigated in detail for both instructors and participants.

The CoI model has proposed another significant type of presence which is called cognitive presence. Cognitive presence, which is a concept based on Dewey’s idea of reflective thinking, is defined by Garrison et al. (2001) as ‘the extent to which learners can construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry (Garrison et al., 2001, p. 9).

The term cognitive presence is also related to critical thinking. As Garrison (2003) stated: “Cognitive presence reflects the intellectual climate of an exact community of inquiry.” With

these descriptions, cognitive presence is realized through four phases: a triggering event, exploration, integration and resolution. In their study, Garrison et al. (2000) described these phases in detail. According to the study, the triggering event arises in the learning environment where the students acquire an understanding of the subject matter that is taught and discover it individually. The exploration phase is when the participants practice their ideas in different contexts and analyze the content. In the integration phase, learners build meaning from the ideas discussed during the previous page. Finally, learners attempt to find solutions in the next phase, resolution. To be able to foster cognitive evidence, learners should consciously generate knowledge collaboratively. In that sense, the main outcome of cognitive presence is deep and meaningful learning (Akyol et al., 2009).

Along with the other presences of CoI, cognitive presence has significance in online learning. It is argued by Hiltz and Turoff (1993) that cognitive presence is essential and serves as a facilitator in learning environments. These findings suggest that the inefficiency of online learning might have originated from the insufficiency of cognitive presence. Also, it is stated by Vaughan and Garrison (2005) described cognitive presence as a reflective tool on “the focus and success of the learning experience”.

Klemm and Snell (1996) argued that one of the best ways to foster higher-level learning is enabling students to think critically and analytically in a collaborative group. Also, in another study, Darabi et al. (2013) suggested that when learners work together in a group and one of the members tends to approach a concept critically, the group members get used to different perspectives. As a result, their cognitive presence is enhanced. In their study, Darabi et al. (2013) offered that providing students with a critical discussion environment would facilitate their information processing. All in all, cognitive presence is a significant aspect of online learning and implications of the concept might be investigated from different perspectives.

Learning Analytics

According to Long and Siemens (2011),

learning analytics (LA) can be defined as “the measurement, collection, analysis, and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environment in which it occurs.” (p.252). Duval (2012) also explained the term as “collecting traces that learners leave behind and using those traces to improve learning.” Although researchers see the term differently, when the definitions are analyzed, it illustrates that LA has to supply insights for the researcher (Siemens et al., 2011). Recently, learning management systems (LMS) or web-based systems collect data (Chatti et al., 2014; Papamitsiou & Economides, 2014). According to Brown et al. (2020), “the availability of tools that measure, collect, analyze, and report data about students’ progress has given rise to the field of learning analytics for student success.”

To have an efficient LA process, an important phase is “‘closing the loop’ by feeding back this product [e.g., analytics] to learners through one or more interventions” (Clow, 2012, p. 134). As the influence of feedback relies on individual factors such as prior knowledge or self-efficacy (Narciss, 2013), the evaluation of LA consequences necessitates a level of know-how. Misinterpreted data might lead to the unintentional performance of the learners (Corrin & Barba, 2014). To prevent this, it might be advantageous to embrace pedagogical concerns (Tempelaar et al., 2017) that can contribute to the quality of the LA application.

Reading Skills in EFL Environment

Throughout history, language acquisition has been associated with building it by speaking and writing (Nunan, 2004). Conversely, this understanding has been laid off by researchers (Hilton, 2008; Krashen, 1985; Lee, 2012). According to Krashen (1985), ‘people acquire second languages only if they obtain comprehensible input and if their affective filters are low enough to allow the input (p. 82). EFL learners adopt the linguistic rules of the target language with the assist of extensive exposure to authentic texts (Paradis et al., 2017) and then in the instructional process, assimilation follows (Ellis, 2005). Learning a foreign language in a country where almost all of the people speak only the mother tongue of the learner

dramatically reduces the possibility of mastering the target language and makes it almost impossible to have constant and immediate access to people who can assist learners with practicing, learning, and communicating in the target language (Kukulska-Hulme, 2016; Liman Kaban & Karadeniz, 2021). Free voluntary reading (FVR) (Krashen, 2011), sometimes referred to as sustained silent reading (SSR), has been identified as the best approach to reading. However, for it to take place, readers need to have access to diverse reading materials. It is important that they should be able to choose reading materials that interest them and that are in their Zone of Proximal Development (ZPD) (Vygotsky, 1978) or (i+1) as Krashen (1982) puts it. The use of the Internet can be immensely helpful in doing that.

Technology-Assisted Personalized Reading Comprehension

The shift from paper-based reading to screen reading also has been a concern for educators. Numerous studies were conducted to evaluate how reading from a screen might affect reading comprehension. There seems to be a consensus that it makes no difference to reading comprehension whether readers read on paper or screen (Liman Kaban & Karadeniz, 2021; Sun, Shieh, & Huang, 2013; Wright et al., 2013). These findings favor digital reading in an indirect way because the digital texts can be presented with multiple annotations which are readily accessible. This feature of digital texts gives it an immense advantage over paper-based texts.

Personalized learning is based on theories of learning like constructivism which is aimed at supporting self-directed, active, and autonomous learners; the focus of the Vygotsky is interaction, contextualization, and the zone of proximal development; and self-determination theory, which highlights the influence of goal setting on learners’ achievements and their intrinsic and extrinsic motivation (Loizzo et al., 2017). Bray and McClaskey (2015) defines personalized learning as;

“Learners actively participate in their learning. They have a voice in what they are learning based on how they learn best. Learners have a choice in how they demonstrate what they know and provide

evidence of their learning. In a learner-centered environment, learners own and co-design their learning. The teacher is their guide on their journey” (p. 14).

Redding (2014) stated that personalized learning replaces the traditional educational one-size-fits-all model that relies on time, place, and pace with one that engages learners to meet their own needs, goals, and interests. Wolf (2010) mentioned that personalized learning transforms the traditional educational model mostly dominated by time-based content compilation and drives instructors toward a model that frees learners from those constraints, allowing them to progress at their own pace.

Studies have shown the importance of students’ motivation in online learning environments (Lim & Kim, 2002; Liman Kaban, 2021; Park & Choi, 2009). Chen and Jang (2010) identified how to mediate the effect of online learners’ need satisfaction between “contextual support and motivation/self-determination” (p. 741). They suggested providing online learners with a learner-centered environment, flexible learning options, and a choice in learning strategies, emphasizing that online instructors need to provide customized facilitation to individuals to reduce uncertainty to promote motivated and self-determined online learners. We, therefore, relied, for the Personalized Learning (PL) course design, on the Self Determination Theory (SDT) theoretical recommendations to provide contextual support to enhance online learners’ autonomy by providing relevant curriculum (Assor et al., 2002), a learner-centered environment that allows choices to foster learning interests (Chen & Jang, 2010; Ryan & Deci, 2000), and opportunities for personalization (Patall et al., 2010; Liman Kaban, 2021). Feelings of competence were facilitated through meaningful learning choices, differentiated tasks, and different learning strategies (Deci & Ryan, 2000; Ryan & Deci, 2000). Technology-assisted personalized reading environments might increase the inner motivation and self-efficacy of the learners (Liman Kaban & Karadeniz, 2021; Liman Kaban, 2021).

Finally, technology offers a viable option for promoting reading comprehension. However, computer intervention is not as straightforward as it might seem since there are issues surrounding it

such as level of implementation, designing of tasks, context, cost, training and, last but not the least, its role in the teaching the learning process. The present study was conducted given the unique context of Turkey, aforementioned in the introduction. It evaluated the impact of technology assisted intervention on reading comprehension of English as a Foreign Language (EFL) students at a secondary school.

The target group of the present study is 6th-graders (11-to-12-year-old students), and it specifically addresses the following research questions:

1. What is the effect of personalized reading compared to traditional reading on students’ online presence and interaction?
2. How does the use of a personalized reading platform influence students’ perceptions toward EFL lessons?

Methodology

The study is a quasi-experimental study intended to analyze the reading skills of English with a control group and an experimental group. The latter group took part in an intervention that involved using their answers as valuable information to prepare specific feedback for each individual. At the same time, the former was provided with general feedback. This research was conducted in 2020 in two classes in English courses in a Turkish State Secondary School. The classes met for 2 hours per week, for 14 weeks each semester, and were taught by the same English teacher, and shared the same objectives: (1) to enhance students’ English reading performance on the given book titles and (2) to promote students’ English communication and oral presentation skills.

Participants

In this study, a quasi-experimental design was used and students in two EFL classes were assigned to an experimental group and a control group. The experimental group with 30 students adopted the personalized digital reading, while the control group with 30 students practiced conventional in-class reading. The students in these two classes were 6th graders who took the placement test set by the school and had the same level of English proficiency. The average age of the students was 11.

Instruments

In the study, four types of data were collected and they are students’ digital activity, students’ communication activity, and the survey questionnaire of the students’ reflections and perceptions on the personalized learning. Within the 14 weeks, four video clips of storytelling performance by students were uploaded to Learning Management System. The following section describes the rubric of English Storytelling performance.

The Rubric of English Storytelling Performance

The rubric for measuring the students’ English Oral Performance was developed by field experts and piloted before the study. Table 1 shows the rubric, which consists of five dimensions with a total score of 20 points, 4 points for each dimension, which are ideas, organization, voice, word choice, and conventions. The aim of this study was to develop an understanding of the reading competence of the students in the experimental group and control group.

Table 1: The rubric of English Storytelling Performance

Items	4 25 pts.	3 15 pts.	2 10 pts.	1 5 pts.
Ideas	<ul style="list-style-type: none"> The opening lines vividly present the story’s main conflict and characters Significant, descriptive details reveal the setting and characters. 	<ul style="list-style-type: none"> The opening lines present the story’s main conflict and characters Most details are relevant in revealing the setting and characters. 	<ul style="list-style-type: none"> The opening lines vaguely present the story’s main conflict or characters. More details and examples are needed. 	<ul style="list-style-type: none"> The opening lines do not present the story’s main conflict or characters. Details and examples are irrelevant or are missing.
Organization	<ul style="list-style-type: none"> The writer sets the scene by introducing the characters, setting, or action in a memorable way. These quence of events is clear and engaging. The story has a clear beginning,middle,and ending. 	<ul style="list-style-type: none"> The writer vaguely presents the characters, setting, or action. The sequence of events is mostly clear. The story has a beginning, middle, and end, but the action is not always easy to follow 	<ul style="list-style-type: none"> The writer hints at the characters, setting, or action. The sequence of events is sometimes confusing. The story has a beginning, middle, and end, but the action is hard to follow. 	<ul style="list-style-type: none"> The writer does not set up what the story is about. The story begins and ends in a confusing way
Voice	<ul style="list-style-type: none"> The tone and voice are strongly individual and appropriate for the story. 	<ul style="list-style-type: none"> The tone and voice are individual and acceptable 	<ul style="list-style-type: none"> The tone and voice are not clearly individual and not always appropriate. 	<ul style="list-style-type: none"> The voice lacks individuality.

Word choice	<ul style="list-style-type: none"> Thoughtful use of sensory language helps create memorable pictures of the setting, characters, and conflict. Sentences have a pleasing variety of structures. Use of fragments and run-on sentences in dialogue is deliberate and thoughtful 	<ul style="list-style-type: none"> Sensory language is adequate to describe the setting, characters, and conflict. Sentences mostly have a variety of structures. Use of fragments and run-on sentences in dialogue is thoughtful. 	<ul style="list-style-type: none"> A little more sensory language is needed. Some sentences have a variety of structures. Use of fragment and run-on sentences in dialogue is not always thoughtful. 	<ul style="list-style-type: none"> Lack of sensory language limits the picture of the setting, characters, and conflict Repetitive sentence structures and lack of dialogue make the writing difficult to follow.
Conventions	<ul style="list-style-type: none"> Spelling is correct. Grammar and usage are correct. 	<ul style="list-style-type: none"> Spelling is usually incorrect. Grammar and usage do not distort meaning but are not always correct. 	<ul style="list-style-type: none"> Spelling is sometimes incorrect. Grammar and usage errors distract from meaning. 	<ul style="list-style-type: none"> Common words are misspelled. Grammar and usage mistakes are frequent and distort meaning

Understanding Students' Communication Activities

To explore the students' oral interactive patterns in the online personalized reading class, a coding scheme was used from the "Insights" application on Microsoft Teams. "Insights" application records the students' weekly interaction data in the course. The content downloaded on Wednesday, 13 January 2021, at 15:04:24, and originally developed by Microsoft Teams, was analyzed. The data, as the name of the application suggests, is supposed to give educators insights into the usage patterns and study habits of the learners in their classes. Using "Insights," it is possible to obtain, identify and study trends that help educators to improve the performance of their learners.

Questionnaire of Students' Perceptions of the Online Personalized Reading

The questionnaire used to analyze student perceptions of online personalized reading was modified based on the survey developed by Al-Zahrani (2015). It is a 5-point Likert style rating

scheme (5 = "strongly agree" and 1 = "strongly disagree") with 14 items to evaluate the students' views on the personalized digital reading items. These 14 items were divided into four dimensions: "content" dimension (items 1-5) such as "the personalized digital reading classroom offers me the opportunity to review the lecture as many times as I need to," "communication" dimension (items 6-8) such as "the personalized digital reading classroom helps me to effectively cooperate with my classmates," "performance" dimension (items 9-12) such as "the personalized digital reading classroom helps me effectively participate in the learning activities," and "interest" dimension (items 13-14) such as "the personalized digital reading classroom is a very enjoyable approach." The Cronbach's α values of the individual dimensions were 0.86, 0.86, 0.89, and 0.87, respectively, showing acceptable reliability in internal consistency.

Experimental Procedure

Table 2 shows the experimental procedure, which was carried out over 14 weeks in 2020 with an experimental group and a control group.

Table 2: Experiment Design

Two classes of Reading Skills in English	
The personalized digital reading classroom (N:30)	Traditional in class reading (N: 30)
Introduction of basic knowledge for English Reading Skills	
Out-of-class learning: Reading digital story books and creating oral summaries	Attending traditional English Reading Classes
In-class: Classroom discussion and mobile language activities	Textbook lecture, printed book reading and mobile language activities in class
Homework	Homework
1st, 2nd , 3rd , and 4th English Story Summaries Video Recording	
Post- questionnaire and Reflections	

Findings

In this mixed-method, experimental study, the data analysis was conducted for each of the 14 items in the survey answered by participants in experiment and control groups. The lowest mean in the experiment group belongs to item 14, whereas in the control group it belongs to item number 6. And the highest mean in the experimental group belongs to item 7. In the control group, the highest mean belongs to item 5. Item number 14 has the highest Standard deviations (S.D.= 0.94) in the experimental

group, showing a higher level of variances in participants’ responses on their perceptions, and item number 7 has the lowest (S.D.= 0), illustrating a lower level difference between participant responses. Items number 2, 4, 10, 11 have the highest Standard deviations (S.D.= 0.51) in the control group, showing a higher level of variances in participants’ responses regarding their perceptions, and item number 6 has the lowest (S.D.= 0.35), illustrating a lower level difference between participant responses.

Table 3: Comparison of the Groups

	Personalized digital reading classroom (N:30)			Traditional in class reading (N: 30)		
	Mean	Mode	SD	Mean	Mode	SD
(1) The personalized digital reading classroom offers me the opportunity to review the lessons as many times as I need to.	4.90	5	0.31	2.43	5	0.50
(2) The personalized digital reading classroom offers me access to the online course tools and materials.	4.93	5	0.25	2.53	55	0.51
(3) The personalized digital reading classroom helps me to use various e-learning resources.	4.97	5	0.18	2.67	5	0.48
(4) The personalized digital reading classroom helps me to enrich my learning experience.	4.83	5	0.53	2.53	5	0.51
(5) The personalized digital reading classroom helps me to connect theory with practice in real life.	4.8	5	0.48	2.80	5	0.41
(6) The personalized digital reading classroom helps me to effectively cooperate with my classmates.	4.9	5	0.31	2.13	5	0.35
(7) The personalized digital reading classroom facilitates more communication between me and my teacher.	5	5	0.00	2.73	5	0.45

(8) The personalized digital reading classroom facilitates more communication between me and my classmates.	4.83	5	0.38	2.7	5	0.47
(9) The personalized digital reading classroom helps me to effectively participate in the learning activities.	4.8	5	0.41	2.63	5	0.49
(10) The personalized digital reading classroom enables me to manage my learning activities.	4.83	5	0.38	2.5	55	0.51
(11) The personalized digital reading classroom helps me to develop my problem-solving skills.	4.9	5	0.31	2.5	5	0.51
(12) The personalized digital reading classroom facilitates my personalized learning.	4.63	5	0.85	2.63	5	0.49
(13) The personalized digital reading classroom is a very enjoyable approach.	4.80	5	0.55	2.7	5	0.47
(14) I prefer the personalized digital reading classroom over the traditional lectures.	4.43	5	0.94	2.7	5	0.45

Comparison of the Experimental and Control Groups Learning Analytics

Experimental and control groups' learning analytics data were collected through Microsoft Teams "Insights" application. When the data was compared, it was evident that students in the experimental group showed higher amount of participation through reactions, replies, and posts compared to the students in the control group. The students in the experimental group showed a total of 2456 reactions whereas this number for the control

groups reactions was at 1142. In the experimental group, learners made 3342 replies to the posts in total. The replies to posts in the control group were at 660. Total number of posts made by students in the experimental group was 97 whereas the total post number in the control group was 65. Table 5 below shows the number of posts, replies and reactions by each participant in the experimental and control groups. Overall, it is clear that the participants in the experimental group showed more engagement.

Table 5: Experimental and Control Groups Learning Analytics

Experimental Groups Learning Analytics				Control Groups Learning Analytics			
Participants	Posts	Replies	Reactions	Participants	Posts	Replies	Reactions
Experiment 1	3	141	3	Control 1	1	109	49
Experiment 2	2	121	123	Control 2	0	4	20
Experiment 3	4	111	102	Control 3	0	4	62
Experiment 4	4	122	78	Control 4	0	30	22
Experiment 5	4	112	82	Control 5	0	12	25
Experiment 6	4	136	47	Control 6	2	11	13
Experiment 7	5	115	53	Control 7	2	6	23
Experiment 8	5	125	32	Control 8	2	16	32
Experiment 9	7	159	43	Control 9	3	47	91
Experiment 10	5	135	41	Control 10	0	78	33
Experiment 11	8	144	104	Control 11	2	45	31
Experiment 12	8	54	83	Control 12	1	4	23
Experiment 13	9	56	86	Control 13	2	19	38
Experiment 14	9	131	122	Control 14	0	49	92

Experiment 15	10	134	98	Control 15	2	37	24
Experiment 16	2	62	29	Control 16	3	2	122
Experiment 17	3	145	117	Control 17	3	1	21
Experiment 18	3	120	133	Control 18	5	25	19
Experiment 19	4	90	120	Control 19	5	19	19
Experiment 20	2	39	73	Control 20	6	18	43
Experiment 21	3	172	122	Control 21	2	17	20
Experiment 22	3	141	129	Control 22	3	16	54
Experiment 23	4	121	90	Control 23	1	15	43
Experiment 24	3	151	149	Control 24	2	14	20
Experiment 25	2	114	35	Control 25	3	13	53
Experiment 26	3	35	33	Control 26	3	12	20
Experiment 27	5	48	53	Control 27	4	11	35
Experiment 28	3	121	112	Control 28	2	10	20
Experiment 29	2	125	122	Control 29	4	9	32
Experiment 30	3	62	42	Control 30	2	8	43
Total	132	3342	2456	Total	65	660	1142

Discussion and Conclusion

The present study set off to explore the potential of personalized electronic reading environments in terms of contributing to more presence and interaction during online learning and providing practical implications for researchers, practitioners, and material/course designers. Previous research has indicated that personalized learning environments may have a positive influence on pre-school learners' motivation, engagement and total achievement. The current study suggests that personalized learning environments may also effectively stimulate students' interaction and online presence. A well-designed personalized learning environment can motivate secondary school learners' interaction. Moreover, the findings revealed that electronic reading lessons could significantly improve the learners' reading comprehension skills and participation in in-class and out-of-class activities. Furthermore, the gathered results illustrated that personalized learning environments could increase motivation and interaction, and with the help of recent instructional technologies, provide personalization. These results are in line with those published in research-based studies such as those conducted by Hidayet and Setiawan (2020), Liman Kaban (2020), and Pérez-Segura et al. (2020).

With English being taught as a foreign language

worldwide, this study was conducted with the hope of shedding some light on the effects of providing personalized reading practice in EFL settings. Also, given the fact that unwillingness to read in the target language is a common problem that language teachers have been facing recently (Arnold, 2009), and since the students in this study showed more engagement in the personalized learning environment than the control group, the need for more studies is evident. More engagement in the experimental group can be attributed to the fact that personalized learning environments create autonomous learners (Bingham, 2017; Liman Kaban & Karadeniz, 2021). At the end of the term, the signs of successful development of learner autonomy were also identified in their active reactions to the posts, post creation and responses to their friends' posts. All students in the experimental group submitted at least two posts and replied to the interactive posts. These results agree with the studies of Nyland (2018), Liman Kaban (2020), and Yan (2012), among others. They remark that personalized treatment is one of the most effective ways of improving engagement (Hattie & Timperley, 2007;). It is, therefore, possible to claim that the experimental group has benefited from the personalized e-book reading program and increased their participation and engagement in in-class and out-of-class activities.

Limitations

This study is conducted within a specific context in Turkey. The results of the study cannot be generalizable to other parts of the world. Thus, further studies are needed in other research contexts to confirm the findings of this study. Further studies are required to gain more insights into the role of personalized learning environments among primary and high school students.

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