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Learning Styles and the Writing Process in a Digitally Blended Environment: Revising, Switching, and Pausing Behaviors in Focus

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Abstract
The present investigation sought to explore the relationship between learning styles and writing behaviors of EFL learners in a blended environment. It also aimed to identify the learning style types best predicting writing behaviors. Initially, the participants' preferred learning styles were identified through the Kolb's learning style inventory (Kolb, 1984). Secondly, data were obtained through analyzing the Stat counter and Input log data to reveal the pausing, revising and switching behaviors of the participants who attended a writing course in which they developed their writing texts using an online module. The results indicated a negative and significant correlation between the accommodator learning style and the revision behavior. A statistically significant and positive relationship was also found between the converger learning style and the pausing behavior, and between the converger learning style and the revision behavior Furthermore, a positive and significant relationship between the accommodator learning style and the switching behavior was revealed. The accommodator learning style was found as the best predictor for the switching behavior and the converger learning style turned to predict the revision and pausing behavior at an optimal level. The findings suggest that internal factors, cognitive and learning styles, play a significant role in the learning behaviors of English writing learners. The results encourage writing educators to take into account students' learning style and provide more flexible and rigorous learning environment in which all learners can take benefit.

Keywords: learning styles, blended learning, writing behaviors, input log

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INTRODUCTION

The newly accepted truth in the world of technology-enhanced learning is that teachers must permit content to drive technology and should be careful not to let technology drive the content. The objective is to use instruments that are consistent with the needs of the learners' learning experiences (Gynn, 2001). Evidently, different senses in our body are involved in the learning process and the proportion of their effectiveness is diverse in different people. Computers (technology) can here play the role of a multisensory tool, which can ultimately provide learners with different learning preferences (Kadir & Din, 2006).

There should always be good reasons for including technology in the learning environment. Gynn (2001, as cited in Cox, 2008) points out that technology can be the tool that connects the student to knowledge, the student to other students, and the student to the teacher. One of the questions that Gynn sought to answer was "How do we address learning styles?" She contends that to address the multiple learning styles in any classroom, the principles of sound pedagogy are at the front position. One way to do this is to integrate a selection of learning activities to accommodate different learning styles. This will help students expand their learning style experience.

In this study, we tried to build an online writing module that explicitly accommodates the preferences of different types of learners. We tried to do this by adopting the principles of problem-solving learning (Evensen & Hmelo, 2000; Glasgow, 1997; Schwartz, Burgett, Blue, Donnelly & Sloan, 1997). The module for this study was constructed to potentially become accessible and user-friendly for students with different learning styles. In other words, we wanted to create an object of inquiry, allowing us to investigate the effect of an open and flexible learning environment on the acquisition of writing skills. In the following section, then, a brief review of the key related studies will be presented.

LITERATURE REVIEW

CALL and the Development of Writing Skill

The employment of CALL and Online learning practices are alienated into different categories and it is proven by previous studies that the approach provides numerous advantages for the effectiveness of teaching

and learning. This effectiveness can be manifested in the development of language skills, more particularly writing skill. The eminent preponderance is that it provides flexibility in learning and access materials according to student needs in terms of time and techniques. This makes students more responsible for their own learning which enhances student centeredness (Simuth & Sarmany-schuller, 2013). In addition, compared to traditional courses, online learning provides interactive materials that allow easy access to information and feedback from others (Abu Mansor & Ismail, 2012).

Almost all education institutions, particularly higher education, started using this paradigm in their teaching and learning processes (Abu Mansor & Ismail, 2012; Agélii Genlott & Grönlund, 2013; Chapelle & Jamieson, 2008; Godwin-Jones, 2000; Stanley, 2013). As "an act that takes place within a context, that accomplishes a particular purpose, and that is appropriately shaped for its intended audience" (Hamp-Lyons & Krool, 1997, p. 8), the ability to write properly is an indication of critical thinking and reasoning (Weigle, 2002). Accordingly, due to its standardized system, writing needs instruction in order to be acquired effectively (Grabowski, 1996). Yet developing a course for teaching writing, which also involves other skills, notably the skills of planning, drafting and revising" (Dudley-Evanns & St John, 1998, p. 115) does not appear to be an easy task; hence, educators need to search for, develop, and present different media that lend themselves to the effective and fruitful teaching of writing.

CALL can be considered one of the possible ways for practicing writing (Hanson-Smith, 2001; Shetzer & Warschauer, 2000). The primary application of computer technology for writing has been the word-processing and proofing devices (Godwin- Junes, 2000; Goldberg, Russell, & Cook, 2002; Hanson-Smith, 2001; Murphy, Kruger, & Grieszl, 1998). In general, the research on word processors and student writing conducted during the 1980's and early 1990's suggests many ways in which writing with computers may help students produce better work. (Dauite, 1986; Etchinson, 1989; Hannafin & Dalton, 1987; Kerchner & Kistinger, 1984; Owston, 1991; Vacc, 1987; Williamson & Pence, 1989). Later on, with the boost in the field of IT and arrival of different online possibilities (Murphy, Kruger, & Grieszel, 1998), research on the writing skill moved beyond plain practice of the word processor system. A new perspective for writing practice through shifting

from personal to collaborative, interactive realm has been opened. In other words, CALL realized in the form of various online environments, with a flexible degree of availability, allows learners and teachers to deal out unrestricted time to the practice of writing (Elter & Merhout, 2007). That is, pupils have the opportunity of developing their writing skills via collaborating with other pupils and even native speakers asynchronously (Kreeft Peyton, 1999; and Rajasingham, 2007).

Some studies show that using computers in language learning environments can improve the quality of learning. Put it another way, CALL leads to improved language skills (reading, speaking, writing and listening). For example, a study conducted by Warschauer (2000) used online learning in four reading and writing classrooms in Hawaii. Vilmi (2003) found out that online collaborative writing projects improved the learners' cultural awareness and their proficiency. Nelson (2006) in another research on Multimedia writing (MW) with five L2 speakers of English at the University of California worked on multimedia essays in digital format. He concluded that MW potentially increased the quality of authorial voice of the participants who might not otherwise gain a chance for expressing themselves in a second language. Some researchers (e.g., Ansarimoghaddam, Tan, Yong, & Mohd Kasim, 2012; Kasper 1999; Rajasingham, 2007) argued that CALL when combined with collaborative work could be of much use for second language learners. In addition, another study probed the teachers' attitudes towards the effect of Computer- Assisted Language Learning (CALL) on teaching writing. The results showed that English language teachers have a positive attitude toward using computer for teaching writing (Amirsheibani & Iraji, 2014).

However, writing alone either in paper-and-pencil or in online areas cannot offer learners with sufficient practice necessary for developing the writing skill. The students also need to be exposed to different samples of writings for better comprehension of the skill (Reppen, 2002). Again, here CALL stands as one possible potential in a writing class by providing access to authentic or instructional sample writings written in various genres. Besides, the virtual environment enables the educators to develop their own instructional material according to the specific objectives of a particular course in the form of web-based courses or lessons.

Blended Learning

Virtual learning environments (VLE) have been created to make use of the Internet's advantages while controlling the learning process and learning management, in which students and their tutors participate in online interactions of various kinds, including online learning (Kember, McNaught, Chong, Lam, & Cheng, 2010; Schober & Keller, 2012). E-learning, a method which evolved from distance education, has received special attention from public universities. However, for e-learning to be effective, it must be combined with the other forms of learning such as face to face learning. This combination leads to a new methodology called blended learning. (Álvarez, Martín, Fernández-Castro & Urretavizcaya, 2013; Graham, 2005; Howard, Remenyi, & Pap, 2006; Lin & Wang, 2012; Krasnova, 2015).

Various studies have proved the advantages of B-Learning over online and face-to-face learning alone. According to Farahiza, Zaihan and Azizan, (2010), this type of learning enhances social interaction, offers flexibility and efficiency; extends the reach and mobility; and optimizing development cost and time. The students can learn from an online course that matches their different learning styles (Osguthrope & Graham, 2003) and at the same time, they can learn from lectures in class. Besides, the students can learn from social interaction, whether face-to-face or online for developing social communication in Higher Education Institutions community and get immediate feedback that increases learners' competence and confidence. Through B-learning, the student's achievement is higher because media and VLE tools (Thompson, 2003) increase retention of the learning material. Moreover, in B-Learning the students are actively involved in the learning process (Thompson, 2003), which can help them develop critical thinking in learning environment and they have access to different online resources (Lim, Morris & Kumpitz, 2006; Osguthrope & Graham, 2003) providing a diverse and quality learning experience. Echavez-Solano (2003) focusing on the learning outcome, found that the students in technology-enhanced classes had better understanding of course content, immediate feedback, self-learning and control of their learning. In addition, Victoria López-Pérez (2011) believes that B-Learning has a positive effect on students' performance in reducing dropout rates and improving exam marks.

Although it is clear from reviewing the literature that B-Learning tends to be more effective than online or face to face instruction alone, students who learn by this approach may not achieve significantly better results than those studying face to face or online courses only. (Alshwiah, 2010; Echavez-Solano, 2003).

Learning Styles and Writing Skill

Students' learning is influenced by learning styles and preferred learning approaches (Abu-Moghli, Khalaf, Halabi, & Wardam, 2005; Rourke & Lysynchuck, 2000), which are not fixed. Individuals can develop their abilities in less dominant styles, as well as enhance their skills in the styles they already often use. Therefore, understanding students' different learning styles of learning, in the EFL context, specially writing classes helps instructors to teach and manage their classes effectively to suit individuals' learning preferences (Wasanasomsithi, 2004).

Prosperous administration of cognitive factors and metacognitive processes to complete a writing task and attain the proposed objectives depends on the overall patterns that give general direction to learning behaviors and preferred ways in which an individual approaches a task, a learning situation or tries to solve a problem, which are known as learners' learning styles (Cohen, 2003; Oxford, 2003). EFL scholars have widely discussed how to manage a class to suit students' learning styles, and a number of studies have investigated learning styles and their influences on students' academic achievement (e.g., Sahragard & Mallahi, 2014; Srijongjai, 2011). However, the application of learning styles in EFL writing classes and further research in this area is still needed, most specifically in the Iranian context.

One investigation presents results from a study of learning styles of Thai English major students in an EFL writing class. The objectives of the study were to identify the learning styles of these students and to see whether there were significant differences in their learning styles based on their achievement levels in their English writing course. The instruments used in the study were the Memletics Learning Styles Inventory and a semi-structured interview. Data analysis showed that the average primary and secondary learning styles of the students were social and aural and there were no significant differences of the students' learning styles based on their achievement levels in the writing class (Srijongjai, 2011).

In their study, Sahragard and Mallahi (2014) attempted to explore the preferred language learning styles of a group of Iranian EFL learners and differences in the styles of learners with different L2 writing proficiency levels. The participants were 30 Iranian upper-intermediate EFL students learning English at a language institute. Data analysis revealed that most of the learners in the sample had a communicative learning style preference and the more proficient writers favored this type of learning as well. As for the comparison between the students' writing self-assessment and the assessment done by the researchers, the results indicated that the more proficient writers underestimated their writing ability whereas the majority of the less proficient ones overestimated different aspects of their writing ability.

The above studies have explored the effects of CALL on learning styles and writing performance. However, most of these studies have investigated the writing products of the participants and the process of writing seems to have been scantly at the hub of research. Additionally, in most of these studies writing as a general skill has been the focus of researchers and the effect of practicing writing in a digital blended environment on genre writing and writing process has yet to adequately probed.

PURPOSE OF THE STUDY

The increase in the use of technology makes inspection of the relationship between learning styles and writing behavior of students a priority. In this respect, we aimed to see if the provision of an online writing module in a blended learning environment would facilitate the active involvement of EFL learners with different learning styles in the process of completing the assigned writing tasks so that it would be possible to detect their writing behaviors in terms of pausing, switching and revision.

To achieve the above stated objectives, we addressed the following research questions:

1. Is there any significant relationship between students' learning styles and the amount of time they spend on theory, practice and case sections of the module?
2. Is there any significant relationship between students' learning style types and their pausing, revision and switching behavior in a digitally blended environment?

3. Which one of the learning style types is the best predictor of pausing, revision and switching behavior of the participants?
4. Which time amounts spent on different sections of the module best predict the writing scores of the participants?

METHOD

Participants

Following a purposive sampling procedure, 30 sophomore students took part in this experiment. Purposive sampling is when a researcher chooses specific people to use for a particular study or research project. Unlike random studies, which intentionally include a diverse cross section of ages, backgrounds and cultures, the idea behind purposive sampling is to concentrate on people with particular characteristics who will better be able to assist with the relevant research goals. Purposive sampling was used in this research because of availability and willingness of the participants to take part in the study. They were all majoring in TEFL at the state university of Mazandaran and had all passed pre-grammar and writing courses prior to this study. These students were required to pass the essay-writing course at the time of conducting the study, so they appeared to be the right candidates to take part in the investigation. The ratio of male to female participants was equal to avoid bias caused by possible gender differences. The participants' age ranged from 20 to 32.

Instrumentation

Online Writing Module

For this experiment, an online module adapted from an online writing center developed at the University of Antwerp in Belgium was constructed (Van Waes, Weijen & Leijten, 2014). The module was designed to practice three different genres of writing i.e., letter writing (thank you letter, bad news letter) and argumentative essay writing. The reason for choosing these genres of writing was to add to the previous literature regarding these genres and the frequent demand from language learners. The module consisted of a general introduction page and three inter-linked sections: (a) a theory section, (b) a set of short exercises in the practice section, and (c) a case. The theory section contains general information on writing, for example, related to style, structure, strategy or wording. In other words, it increases students' awareness about discoursal and sentential features of the target genres. The practice

section contains exercises that students could draw on in order to train specific sub-skills that are relevant for a specific type of writing task. The case section includes a description of a communicative context with an assignment that students are required to carry out in order to complete the module. The module is designed in such a way that each of the sections is explicitly linked to the others through hyperlinks on several levels, which potentially provide the users with the freedom to access them in the order they prefer.

Learning Style Questionnaire

Students' learning styles can be scrutinized in many different ways. One frequently used method is Kolb's (1984) Learning Style Inventory (LSI), which distinguishes between four different learning styles: the accommodator, the assimilator, the converger and the diverger. These four different learning styles cause the difference in the way learners advance towards new tasks. In order to differentiate between these learning styles, Kolb positions them on four dimensions: concrete experience, reflective observation, abstract conceptualization and active experimentation (Figure 1).

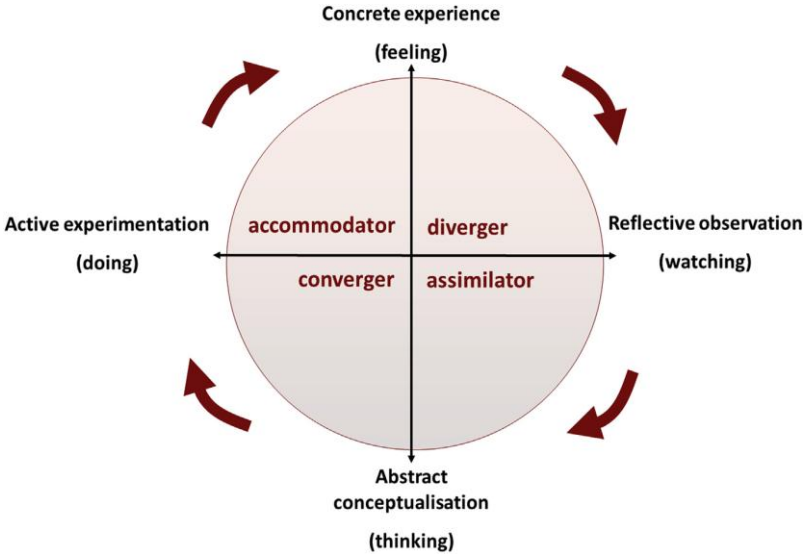

Figure 1: Kolb's learning styles (Kolb, 1984)

For the ease of learners understanding and researchers' confidence of their right recognition of each question, the Persian version of the questionnaire was administrated. To establish the internal consistency, the questionnaire was piloted on 15 students with similar characteristics as the participants of the study. The results of Cronbach's alpha indicated that the questionnaire had the required level of reliability ($r = 0.92$) for the purposes of the study.

Data Collection Procedure

The participants of the study took part in a writing course in which they were required to develop their writing texts using the online module. Since each section in the module was explicitly linked to the others through hyperlinks on several levels, users had the freedom to access them in the order they preferred. Students' navigation was unrestricted which entailed access to almost any route through the module. Data collection was completed in the computer lab at Mazandaran University while running an online essay-writing course, and with the presence of the researcher as the course instructor. Each participant worked individually on one computer while they received the required instruction about the computer-based learning program (online module).

Initially, the researchers needed to collect data concerning the preferred learning styles of the participants. To this end, the Persian version of the learning style questionnaire adapted from Kolb's learning style inventory (Kolb, 1984) was administered at the beginning of the study in order to determine each student's type of learning style (i.e., Accommodator, Assimilator, Converger and Diverger). Because Kolb's learning style inventory questionnaire contains responses on a Likert scale, its reliability was established through Cronbach alpha. The questionnaire consists of 12 questions, which are ranked according to the participants' priority. Each question had four answers, and the students allocated one of the points 1, 2, 3 or 4 to each, based on the consistency of the replies with their own learning style. If the students found high compliance for each answer, they would score it four and in the case of the least compliance, they would give the score of one to it. Responses to each question were set in accordance with four different learning modes and none of them was superior to the other.

Second, data were required to reveal the pausing, revision and switching behavior of the participants. To gain the relevant data, initially

each student was required to write four different texts based on three different genres: two letters (A thank you letter, a bad newsletter) and two argumentative essays during the study. The texts were written in Microsoft Word, and the participants were given three hours to complete each one of the tasks in a computer site with the presence of the researcher (instructor). Firstly, it deemed necessary to determine the amount of time the writers spent on each part of the module. To this end, the Stat counter and Input log data were combined based on the time stamps in both logging files. As both data collections contained identical time based data, it was possible to merge the datasets and combine the complementary information into one large data set. By doing so, the detailed basis to describe the writing and learning process from different perspectives was created (Leijten & VanWaes, 2013; VanWaes et al., 2014): (1) pausing behavior (e.g., length and location of the pauses during writing as an indicator of cognitive effort; P-Bursts, i.e. writing episodes divided by pauses above a certain threshold, e.g., two seconds; pausing time vs. active writing time), (2) revision behavior (e.g., ratio of characters in the final text vs. total characters produced during the complete writing process), and (3) switching behavior (e.g., switches from the learning module (task environment) to Word and from one section of the module to another). For the latter, each switch was coded and characterized (time, duration, origin, and destination). Earlier research has shown that the moment at which writers carry out certain activities during the writing process can influence the quality of the texts they produce (Van Waes, Weijen & Leijten, 2014). Therefore, the writing phase was considered as a factor in the analyses of the logged writing processes. In doing so, the researcher was also able to examine when the different types of switches occurred during the writing/learning process and how much time each writer devoted to each section during the different phases of the process.

Data Analysis

In the next phase of the study, the learners' written products were scored to obtain data regarding the improvement of the participants' overall writing practice. Two experienced EFL writing instructors rated the students' written products. A combination of holistic and analytic scoring was used to guarantee a sound perspective on text quality (Charney, 1984). In the first place, the raters reviewed the mentioned texts and gave

each a holistic rating on a scale of 1 (poorest) to 10 (best) (Van Waes, Weijen & Leijten, 2014). After a week, they rated the texts a second time, using an analytic scoring scheme. The students' final versions were also graded both holistically and analytically following the analytic method proposed by Jacobs, Zinkgraf, Wormouth Hartfiel and Hughey (1981, as cited in Hughes, 2003, p.104). Inter-rater and intra-rater reliabilities were calculated to ensure the reliability of scoring procedures. To assure the validity of the scoring scheme "differential experiment" procedure proposed by Brown, (2007) was employed.

RESULTS

To investigate the research questions formulated for the purpose of this study, initially it deemed necessary to establish the normality assumption of different sets of data. To this end, One-Sample Kolmogorov-Smirnov Normality Test was utilized. Tables 1 and 2 illustrate the results of normality analysis for the learning style types and pausing, revision and switching behaviors of the participants, respectively.

Table 1: One-sample Kolmogorov-Smirnov normality test for the participants' learning styles scores

	N	Most Extreme Differences			Kolmogorov-Smirnov Z	Asymp. Sig. (2-tailed)
		Absolute	Positive	Negative		
Accommodator Learning Style	30	.239	.122	-.239	1.309	.165
Assimilator Learning Style	30	.310	.310	-.231	1.700	.256
Converger Learning Style	30	.158	.097	-.158	.865	.443
Diverger Learning Style	30	.270	.270	-.123	1.479	.125

Table 2: One-Sample Kolmogorov-Smirnov normality test for the pausing, revision and switching behavior of the participants

	N	Most Extreme Differences			Kolmogorov-Smirnov Z	Asymp. Sig. (2-tailed)
		Absolute	Positive	Negative		
Pausing Behavior	30	.239	.122	-.239	1.309	.565
Revision Behavior	30	.310	.310	-.231	1.700	.356

Switching Behavior	30	.158	.097	-.158	.865	.453

As it can be seen in Tables 1 and 2 all the significant levels are bigger than 0.05. Thus, it can be concluded that all the data sets are normally distributed. Therefore, the parametric test of Pearson correlation Coefficient can be run to investigate the existence of any significant relationship between the four learning style types and the pausing, revision and switching behavior of the participants.

Investigating the First Question

To address the first question, initially, One-Sample Kolmogorov-Smirnov Normality Test was used to check the normality assumption of the collected data. Table 3 displays the results of the analysis.

Table 3: One-sample Kolmogorov-Smirnov normality test for time spent on different sections and participants' learning styles scores

	N	Most Extreme Differences			Kolmogorov-Smirnov Z	Asymp. Sig. (2-tailed)
		Absolute	Positive	Negative		
Time Spent on Theory section	30	.146	.146	-.124	.801	.542
Time Spent on Practice section	30	.206	.206	-.104	1.127	.157
Time Spent on Case section	30	.139	.139	-.128	.759	.612
Accommodator Learning Style	30	.239	.122	-.239	1.309	.165
Assimilator Learning Style	30	.310	.310	-.231	1.700	.256
Converger Learning Style	30	.158	.097	-.158	.865	.443
Diverger Learning Style	30	.270	.270	-.123	1.479	.125

As Table 3 illustrates, all the significance levels for the data sets are bigger than 0.05. Thus, it can be concluded that the data sets for the first research question are normal. After observing the normality assumption,

the Parametric test of Pearson Correlation Coefficient was run on the data to find out any significant relationship between the four learning style types and the amount of time they had spent on the theory, practice and case sections of the module. Table 4 shows the results.

Table 4: Pearson correlation coefficient between learning style types and time spent on the different sections of the module

		Time Spent on Theory section	Time Spent on Practice section	Time Spent on Case section
Accommodator Learning Style	Pearson Correlation	.348**	.158	.225
	Sig. (2-tailed)	.003	.112	.321
	N	30	30	30
Assimilator Learning Style	Pearson Correlation	.186	.187	.144
	Sig. (2-tailed)	.512	.228	.817
	N	30	30	30
Converger Learning Style	Pearson Correlation	.368*	.182	.111
	Sig. (2-tailed)	.022	.335	.420
	N	30	30	30
Diverger Learning Style	Pearson Correlation	.143	.289*	.317**
	Sig. (2-tailed)	.195	.024	.001
	N	30	30	30

As Table 4 illustrates a significant and positive correlation exists between accommodator learning style and time spent on theory section ($r=0.348$, $p = 0.003 < 0.01$). Moreover, a significant and positive correlation was found between converger learning style and time spent on theory section ($r=0.368$, $p = 0.022 < 0.05$). Additionally, a significant and positive correlation was revealed between diverger learning style and time spent on practice section ($r=0.289$, $p = 0.024 < 0.05$) as well as time spent on case section ($r=0.317$, $p = 0.001 < 0.01$) of the module.

Investigating the Second Question

The second question of the study was investigated through running Pearson Correlation Coefficient Formula on the data (see Table 5).

Table 5: Pearson correlation coefficient between learning style types and the behavior of the participants

		Pausing Behavior	Revision Behavior	Switching Behavior
Accommodator Learning Style	Pearson Correlation	125	-.302*	.289*
	Sig. (2-tailed)	.758	.028	.032
	N	30	30	30
Assimilator Learning Style	Pearson Correlation	.124	.123	.145
	Sig. (2-tailed)	.256	.512	.776
	N	30	30	30
Converger Learning Style	Pearson Correlation	.389**	.343**	.110
	Sig. (2-tailed)	.002	.021	.564
	N	30	30	30
Diverger Learning Style	Pearson Correlation	258	189	.102
	Sig. (2-tailed)	.319	.325	.465
	N	30	30	30

As Table 5 demonstrates, a negative and significant correlation exists between accommodator learning style and revision behavior ($r = -.302$, $p = 0.028 < 0.05$). Moreover, a statistically significant relationship was found between the converger learning style and the pausing behavior ($r = 0.389$, $p = 0.002 < 0.01$). Furthermore, the relationship between the converger learning style and the revision behavior was also positively significant ($r = 0.343$, $p = 0.021 < 0.05$). Additionally, a positive and significant relationship between the accommodator learning style and the switching behavior was observed ($r = 0.289$, $p = 0.032 < 0.05$). As Table 5 indicates except for the previously mentioned relationships, no other significant correlation indices were found between other learning style types and the pausing, revision and switching behavior of the participants.

To detect the possible differences between the three genres of thank you letter, bad news letter, and argumentative essay in terms of pausing, revision, and switching behaviors a Chi-Square test was run. Table 6

shows the statistics related to the test and figures 2, 3 and 4 display the comparative frequencies between these writing genres in terms of pausing, revision, and switching behaviors.

Table 6: Genre differences in terms of pausing, revision, and switching behaviors

	Chi-Square Value	Significance
Pausing Behavior	43.78	0.05
Revision Behavior	31.20	0.22
Switching Behavior	80.82	0.00

As Table 6 shows, participants of the study performed significantly differently regarding pausing and switching behaviors in writing the thank you letter, the bad news letter, and the argumentative essay. The Chi-Square value was 43.78 with the significance level of $p \leq 0.05$ for the pausing behavior. The value for the switching behavior was 80.82 with the significance level of $p \leq 0.05$. The revision behavior was the same across the three genres of writing with the Chi-Square value of 31.20 and the significance value of $p \geq 0.05$.

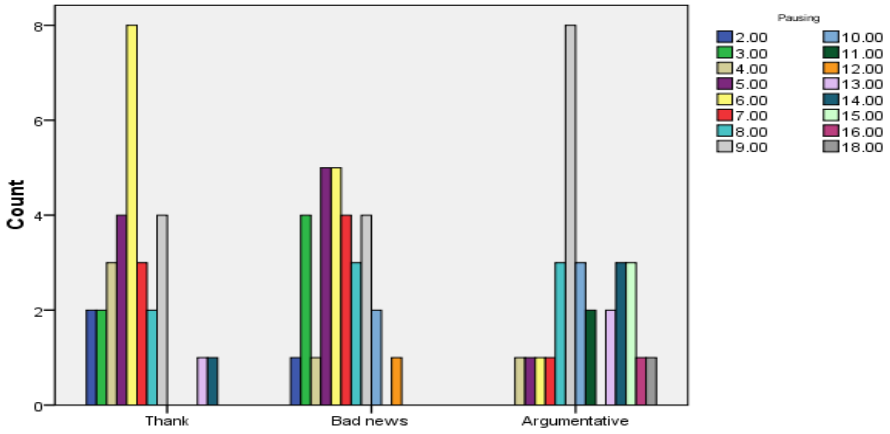

Figure 2: The pausing behavior across the study genres

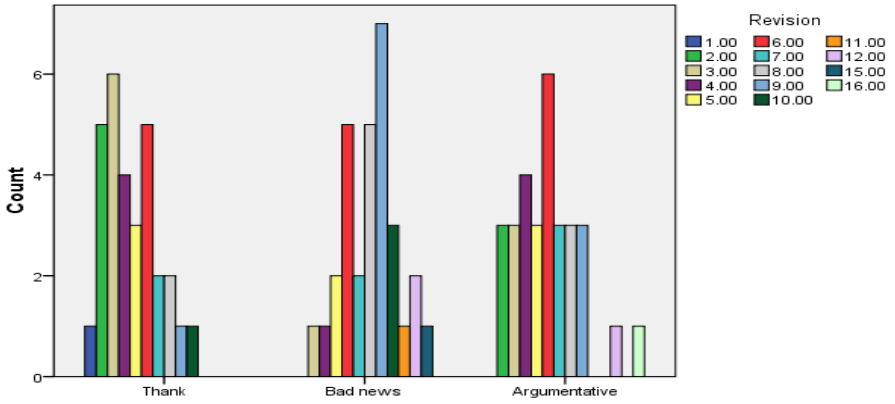

Figure 3: The revision behavior across the study genres

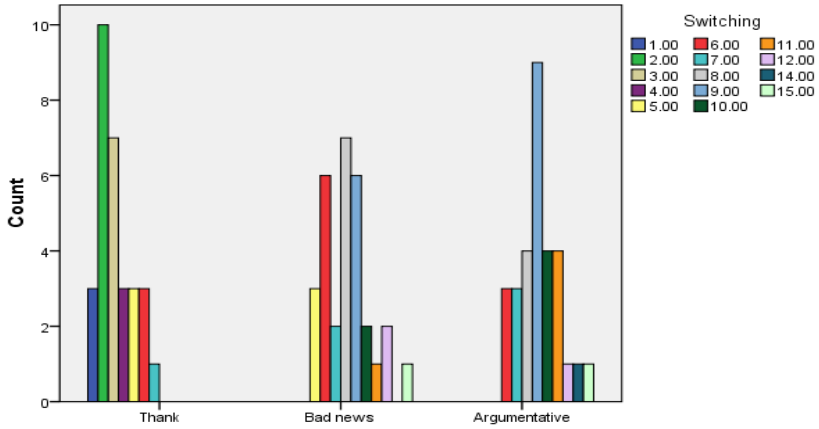

Figure 4: Frequencies of the switching behavior across the study genres

To find the difference across the writing genres regarding pausing, revision, and switching behaviors multiple comparison using the Shceffe test was employed. Levene's test of homogeneity showed that the frequencies in pausing, revision and switching were homogeneous. Table 7 shows the statistics related to Levene's test and Tables 8 and 9 depict the statistics related to descriptive statistics and multiple comparisons, respectively.

Table 7: Test of homogeneity of variances

	Levene Statistic	Significance
Pausing	2.186	.119
Revision	.270	.764
Switching	.702	.498

All Levene's statistics have significant levels of P≥ 0.05 verifying the homogeneity of variances across the pausing, revision and switching behaviors.

Table 8: Descriptive statistics for pausing, revision and switching behaviors

		N	Mean	Std. Deviation	Minimum	Maximum
Pausing	Thank	30	6.3333	2.77095	2.00	14.00
	Bad news	30	6.4333	2.45909	2.00	12.00
	Argumentative	30	10.5667	3.42086	4.00	18.00
	Total	90	7.7778	3.49567	2.00	18.00
Revision	Thank	30	4.6333	2.32651	1.00	10.00
	Bad news	30	8.1333	2.55604	3.00	15.00
	Argumentative	30	6.0667	3.06182	2.00	16.00
	Total	90	6.2778	3.00572	1.00	16.00
Switching	Thank	30	3.2000	1.64841	1.00	7.00
	Bad news	30	8.1667	2.32057	5.00	15.00
	Argumentative	30	9.2333	2.12835	6.00	15.00
	Total	90	6.8667	3.33251	1.00	15.00

Table 9: Multiple comparisons across the study genres

	Genre	Genre	Standard Error	Significance
Pausing	Thank you	Bad news	0.75	0.99
	Bad news	argumentative	0.75	0.00
	argumentative	Thank you	0.75	0.00
Revision	Thank you	Bad news	0.68	0.00
	Bad news	argumentative	0.68	0.01
	argumentative	Thank you	0.68	0.12
Switching	Thank you	Bad news	0.52	0.00
	Bad news	argumentative	0.52	0.13
	argumentative	Thank you	0.52	0.00

As Table 9 shows, the pausing behaviors between the bad news letter and the argumentative essay were significantly different. Similarly, the difference between the thank you letter and the argumentative essays was significant in terms of pausing behaviors. Regarding revision behaviors, a significant difference was found between the thank you and bad news letters. Bad news letter and argumentative essay were also significantly different in terms of revision behaviors. The differences between the thank you letter and the bad news letter and between the argumentative essay and the thank you letter were also significant in terms of switching behaviors.

Investigating the Third Question

To address the third question about the learning style types predicting the pausing, revision and switching behavior of the participants, as indicated in Table 5, only the accommodator and converger learning styles demonstrate positive correlations with switching, pausing and revision behaviors. Thus, it can be easily inferred that the best predictor for switching behavior is the accommodator learning style($r = 0.289$, $p = 0.032 < 0.05$) since it is the only learning style which has a positive correlation with this behavior. Likewise, the only learning style which best predicts the revision ($r = 0.343$, $p = 0.021 < 0.05$) and pausing behaviors ($r = 0.389$, $p = 0.002 < 0.01$) of the participants is the converger learning style.

Investigating the Fourth Question

To address the fourth question the Spearman Correlation Coefficient was administered (see Table 10). As displayed in Table 10, the time spent on theory is the only time amount which positively correlated with the participants' writing scores ($r = 0.466$ $p = 0.009 < 0.01$), indicating that the amount of time spent on the theory section of the module is the best predictor of the participants' writing scores.

Table 10: Spearman correlation coefficient between the time on the module and the writing scores

			Writing Scores
Spearman's rho	Time Spent on Case Section	Correlation Coefficient	-.239*

	Sig. (2-tailed)	.043
	N	30
Time Spent on Practice section	Correlation Coefficient	-.189
	Sig. (2-tailed)	.437
	N	30
Time Spent on Theory Section	Correlation Coefficient	.466**
	Sig. (2-tailed)	.009
	N	30

As demonstrated in Table 10, the time spent on the case section has a significantly negative correlation with the participants writing scores ($r = -0.239$ $p= 0.043< 0.05$). On the other hand, the time spent on the theory section is positively correlated with the participants' writing scores ($r = 0.466$ $p= 0.009< 0.01$). Additionally, no significant relationship was observed between the amounts of time spent on practice and the participants' scores.

DISCUSSION

The current experiment aimed at examining the relationship between learning styles and writing behaviors of EFL learners in a blended environment. The study also intended to inspect the learning style types which would best predict the participants' writing behaviors.

Concerning the results found in this study related to the relationship between the learning styles and the time spent on the theory, practice and case section of the module, the findings of the present study are inconsistent with the results of a study conducted by Gunawardena and Boverie in 1993. In their study, they concluded that learning styles do not affect how students interact with media and methods of instruction. However, in the present study significantly positive relationships were found in this respect. Significant and positive correlations between the accommodator learning style and the time spent on theory could be explained on the basis that according to Kolb Accommodator's dominant learning abilities are Concrete Experience (CE) and Active Experimentation (AE). Based on Kolb (1984), such an individual tends to solve problems in an intuitive trial and error manner, relying often on other people's information rather than on her/his own analytic ability. These learners are good with complexity and are able to see relationships among aspects of a system. Given the fact that the theory section

contained information on writing related to style, structure, and strategy as well as wording and intended to increase students' awareness about discoursal and sentential features of the target genres, it could be argued that this section may have drawn the attention of the accommodators as a source of information from other people. Moreover, since the theory section intended to highlight the relationship between different features of the target genre, this section may have attracted the accommodators' attention more because it seems to have been in line with the learning characteristics of these individuals.

The significant and positive correlation found between converger learning style and time spent on theory section can be explained on the ground that Convergers are motivated to discover the detailed information about the environment in which they are functioning. Based on the characteristics of the converger learning style, which includes two dominant learning abilities of Abstract Conceptualization (AC) and Active Experimentation (AE), it is obvious that these types of learners prefer to focus on theory section of writing module. McLoughlin (1999) has found that individuals learn best when information is presented in ways that are harmonious with their preferred styles. These results partially corroborate the findings of a study carried out by Van Waes et al. (2009) in which they found out that those writers who are Assimilators devoted a longer time to the case compared to the writers with the other three learning styles. That is, they generally saw the largest number of pages in Calliope, and shifted mostly between Calliope and Word. The findings of their study also showed that, initially, Assimilators (69.67%) and Divergers (59.35%) seem to devote most of their time to the Theory section, while Convergers divide their time between the Theory section (41.21%) and the Case (43.58%). As they observe, it seems that writers preferring different learning styles proceed with interaction with Calliope differently to a certain extent during the writing process. Put it other way, the users of Module seem to use its potential flexibility instead of only interacting with the module in a more traditional way.

In the present study, the results of data analysis revealed a negative and significant correlation between accommodator learning style and revision behavior. As Kolb (1984) justly puts it, accommodators are good with complexity and able to see relationships among aspects of a system. Given these characteristics, it can be inferred that this negative

correlation could be due to the fact that the better you are with noticing complexity and the relationships in system, the fewer revisions might be needed on your part. Such kind of individuals can be more of a risk-taker and tends to adapt well in specific circumstances. They tend to solve problems in an intuitive trial and error manner, and are less analytic. Put it other way, the characteristics of the accommodators have equipped them with working more effectively during working with the module and as a result, fewer revisions were observed.

In the current experiment, a statistically significant relationship was also found between converger learning style and pausing behavior. As Kolb (1984) states, Convergers are motivated to discover the relevancy or "how" of a situation, and are usually interested in detailed information about the system's operation. Therefore, the pausing behavior on the part of participants with this learning style could be explained by the fact that these Convergers of the current study have had a pausing behavior since they might have been inclined to discover about the details of the task at hand. The same characteristics of Convergers seem to justify the positive relationship found between revision behavior and this learning style type in the current study. Lu, Jia, Gong, and Clark (2007) analyzed the relationship between Kolb learning styles and learning outcomes of online learners. The data from the experiment showed that learning outcomes of Convergers and Assimilators were higher than those of Divergers and Accommodators (Lu et al., 2007). Students who had the learning style of Divergers and Accommodators spent more time online discussing instead of online reading than students who were Convergers and Assimilators. Divergers and Accommodators do better in an affective learning environment wherein information is peer-oriented and delivered informally (Kolb, 1984; Richmond & Cummings, 2005). According to the Kolb learning style theory, Divergers and Accommodators learn better when allowed to observe and collect information. By focusing on the outcome of the study, one can conclude that converger prefer to stay on task in an online learning environment and prefer to work on their own to solve the problems. This can be a justification that in current study writing learners committed more pause and revision.

In the current study, a positive and significant relationship between accommodator learning style and the switching behavior was also found out. As Kolb puts it accommodators tend to solve problems in an

intuitive trial and error manner, relying often on other people's information rather than on their own analytic ability. This being said, the accommodators in the current study might have switched from one section of the module to another in an effort to find information relevant to the task in an intuitive manner. In other words, instead of pausing and relying on their own analytic ability they have decided to draw on the information available to them to address the tasks. In contrast with this findings, Van Waes et, al, (2009) found that on average writers with a Reflective style consulted more pages of the writing module, switched more between the different modules, devoted more time on the learning module, and spent more time to complete the task than writers having Active style. However, the only significant difference between the two learning styles was the proportion of time writers spent in the learning module examining the *theory* section. As indicated by Kolb accommodators mainly have active and concrete styles.

The results of the current study also demonstrated that the case section of the module had a significantly negative correlation with the participants' writing scores. On the other hand, time spent on theory section was positively correlated with the participants' writing performance. Conversely, no significant relationship was found between time spent on practice section and the participants' scores. These findings can be explained on the grounds that awareness of the genre features can contribute to a better performance in writing (Badger & White, 2000). Therefore, the fact that the theory section of the module had as its main aim an increase in the participants' awareness level regarding the features of the three genres under instruction can be interpreted as a justification for the obtained results.

CONCLUSION AND IMPLICATIONS

The process of learning, including second language learning, is believed to be deeply influenced by learners' internal factors (Lightbown & Spada, 2013; Nosratinia & Zaker, 2014; O' Donnell, Reeve, & Smith, 2012). Based on the multifaceted nature of human behaviors and capacities, these internal factors are comprised of a myriad of factors, each dealing with one specific feature (O' Donnell, Reeve, & Smith, 2012). According to Larsen-Freeman (1991), learning styles have a facilitative role in promoting second language learning. It is now believed that each learner has a unique way of learning, reflected in

learning style, that can have a fundamental role in success or failure in learning (Fewell, 2010; Too, 2007; and Zare & Noordin, 2011). Moreover, it has been stated that learning outcome is higher for learners who are able to use multiple learning styles (Mulalic, Mohdshad & Ahmad, 2009; and Reid, 1987).

The findings indicate that educators need to gain awareness of different factors significant in learning in order to address individual educational needs of learners. Thus, second language teacher educators, teachers and leaners need to be provided with awareness in terms of different learning styles and how they can contribute to the learning process, Moreover, the orchestration of the learning style types deserve attention as well so as to help learners use a combination of styles which can be more conducive to the learning outcomes.

The findings of the present experiment promise a number of implications for teacher educators, researchers and syllabus designers as well as teachers in relation to writing and learning styles. Drawing on the findings, teacher educators can help teachers gain awareness regarding the fact that individuals approach learning different language skills in general and writing in particular in ways compatible to their learning styles. Given that technology-blended learning and teaching is rapidly growing in the field of language learning, researchers may decide to explore the issue of learning styles and writing behaviors of language learners further to discover any other elements, which are of significance to the wring process in the light of learning styles. Along the same lines, syllabus designers can incorporate writing tasks, which accommodate the learning styles of the learners more effectively. In the same vein, teachers can also make efforts to acknowledge the fact that different learners approach different writing tasks in a variety of ways and thus attempt to assist learners in doing the writing tasks in a way, which suits their learning styles best. If the educational settings become compatible with the learners' personal orientations, learners may be able to engage in educational activities more and will thus gain an advantage in learning. On the other hand, if this compatibility goes unobserved, learners may not get fully involved in the learning process, which can consequently decrease their chances of educational success.

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