

Adult Learners' Participation In A Blended Learning Environment: A Case Study On Imposed Pace Learning

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ABSTRACT

Distance education provides individuals with extensive learning opportunities. Learners of all ages enjoy the opportunity to become well-equipped individuals as many educational institutions offer flexible and blended programs that can aid in personal and professional development. The current study focuses on adult learners and aims to determine how requirements of the learning environment affects the learning process by collecting their opinions of an imposed pace e-learning environment. This study employed a qualitative research design and interviewed 30 individuals and found that mandatory attendance increased participants' interaction with the content by eliminating other responsibilities and obligations as excuses for non-participation. Additional factors affecting participation included instructors' voices in a narrated online course and integration activities that allowed for self-evaluation during the course. Virtual and face-to-face interactions were also found to be important factors. Session timing, communication abilities, technical issues, and effective communication were the other emergent findings in this study.

Keywords: *Online learning, learner behavior, course completion, learner control, mandatory attendance, imposed pace learning*

INTRODUCTION

Distance education provides individuals with greater freedom of access to education. Thanks to education programs offering degrees and supporting personal development, students of all ages are able to enjoy more accessible opportunities to become well-equipped individuals. Today, several educational institutions offer their programs in both face-to-face and distance education versions. In addition, institutions may require involvement in certain certificate programs for the criterion for employment or to assist employees in specializing in specific fields. Figures provided by statistical studies on distance education funded by private companies indicate a rapid increase in demand in recent years. In 2018, Docebo reported that the global e-learning market is compound annual growth (CAGR) of 10.26% between 2018 and 2023, reaching a total market size of US\$286.62 billion, up from US\$159.52 billion in 2017.

Dropout rates in distance education programs have also risen in parallel with the high growth in their utilization. The predominant causes for students to drop out of distance education are a lack of efficient and continuous support (Nawrot & Doucet, 2014; Poll, Widen, & Weller, 2014), remoteness and social isolation (Cho, Demei, & Laffey, 2010; Schaeffer & Konetes, 2010; Sun & Rueda, 2012), and lack of technical support (Clay, Rowland, & Packard, 2009; Ivankova & Stick, 2007). In a study on dropout causes among adults, Park (2007) analyzed the process in two distinct time periods; before class and during class. According to the author's model, age, gender, level of education, and employment status are individual characteristics influencing dropouts that are rooted in the pre-class period. On the other hand, in the period during which

classes take place, scheduling conflicts, family issues, financial problems, managerial support, and personal issues (e.g., health) were reported as the main factors causing students to drop out. Adult learners are assumed to have steadier persistence than young learners, as they are experienced learners with an increased level of self-control and skills acquired from life experience (Anderson, 2016).

Independent learning or self-paced learning provides the learner with autonomy so that each learner is able to participate on his/her own, at his/her pace, and in his or her own time. In contrast to self-paced learning, imposed pace learning provides participants with specified start and end dates and limited entry points and consist of groups of students who proceed through each course at about the same pace (Anderson, Annand & Wark, 2005). Self-paced and imposed pace learning have both pros and cons in their nature. While self-paced learning offers a more flexible, independent learning opportunity, it can cause planning problems, feeling alienation or in a lack of motivation on the student side. Likewise, imposed pace learning can facilitate group interaction, participation and has higher completion rates but does not always fit the participants' situation or needs (Lim, 2016; Rhode, 2009; Anderson et al. 2005).

Unfortunately, the current literature does not provide evidence on the implementation of time limits in imposed pace based learning methods. While instructors in real life situations are able to set some mandatory activities aimed at increasing participation, no studies have investigated the effects of these actions. Accordingly, the aim of this study is to determine how requirements of the learning environment affect the learning process by collecting participants' opinions of an imposed pace e-learning environment.

LITERATURE REVIEW

Adult Learning

According to Knowles (1984), adult learners (1) are self-directed, (2) bring their experiences into a learning environment, (3) enter a learning environment ready to learn, (4) are problem-centred learners and, (5) are motivated by internal factors. According to the assumption that adult individuals are self-directed in the learning process, it is considered that they possess the skills to manage their own learning processes as an independent learner (Knowles, 1989). However, examining the literature, it has founded that participants have difficulty in managing this process in online learning environments. Robinson (1992) tested Knowles' assumptions in his study with Open College students and his findings indicate that the assumptions differ in practice. According to the data obtained from this study, participants reported that they did not want to be self-directed but, on the contrary, expected clear instructions from teaching staff. The second assumption is that adult learners transfer their life experience gained during their personal development to a learning environment. Accordingly, by doing so, adult individuals are expected to be more efficient in a learning process. Adults are more experienced than young individuals and such experiences are very effective in helping them establish communication and interaction. Consequently, adults become a source of information for each other and, in particular environments involving heterogeneous groups such as distance education, are better able to participate in group activities and collaborative studying (Knowles, 1984). Certainly, experiences can have negative effects in the learning environment, particularly prejudice, rigidity, and fixed behaviour patterns, and should be taken into account. Supporting interpersonal interaction and collaborative studying would improve such individuals' attendance and motivation (Huang, 2002; Wang, Sierra, & Folger, 2003). The third assumption is that adults enter a learning environment ready to learn. Unlike young individuals and children, adults make choices in line with their goals and needs and involve themselves in the system knowing what they want to learn (Knowles, 1984). In an online learning environment, clear lesson organisation, outputs, goals, and sources are important for adult learners. According to the fourth assumption, adults are problem-centred and therefore want to know how the knowledge and experience acquired in a learning environment will translate to their daily lives (Knowles, 1984). For this reason, it would be more beneficial if real life experiences are involved in content design and a practice-oriented training program rather than a theoretically oriented one is prepared (Robinson, 1992). The fifth and final assumption is that adults participate in a learning environment through internal motivation and seek higher self-esteem, self-actualisation, or recognition. According to Knowles (1984), in-group appreciation and recognition is a very effective source of motivation for adults. In this respect, it is considered that allowing individuals to

express themselves, providing feedback, and reporting their development would help them in an online learning environment (Blondy, 2007). In the context of adult education recent studies show that social inclusion, and participation is highly important especially for blended learning environments. Cocquyt, Zhu, Diep, De Greef and Vanwing (2019) have found that learner-instructor interaction and learner-learner interaction have positive effects on adult's social participation by leading guidance and peer support. Vanslambrouck, et al. (2019) have focused on adult's self-regulation strategies in blended learning environments. They have stated that the learners mostly used organising and rehearsal strategies during learning process, were not very strict about time and also prefer different help seeking strategies. In addition to these they have found that the adult students have not been in an interaction on computer, which can be interpreted that they do not very well qualified or comfortable on asynchronous communication. This can be about ICT self efficacy and confidence as well. Arrosagaray, González-Peiteado, Pino-Juste and Rodríguez-López (2019) have compared the three learning environment, which are face-to-face, blended, and distance language learning for determining the students' self-perceived confidence in digital competence and the effect of ICT. They have found a relationship between age, occupation and technology use; between technology use and increased self-perceived confidence in digital competence in the distance language learning environment.

Online Learning Environments (Self-Paced & Imposed Pace)

In most teaching design models, identification of the target audience is a primary step in the process. Although each individual has idiosyncrasies, group characteristics and needs should be taken into account for education programs intended for the public. For groups consisting of adults, the adult learner theory provides a guideline. The characteristic of the target audience is crucial in the sense that specific environments and processes are designed accordingly.

In instructor-led environments, the teacher controls the entire process and determines when learners participate. In a self-paced learning environment on the other hand a learner is responsible for their own learning and plans their own process. The self-paced learner participates in activities in their own time in line with their own needs and preferences (Rhode, 2009; Artino & Jones, 2012). While self-paced learning provides learners with a large degree of freedom, the guidance they receive is equally important. Unlike in the self-paced learning model, learners' activities during the imposed pace process are pre-planned and presented to them. Learners follow a certain sequence in order to accomplish activities; they should access the system at certain times and perform prescribed activities in order to complete the program. According to Anderson et. al. (2005), although it is considered more rigid and limiting compared to self-paced learning, the imposed pace learning model achieves higher completion rates.

Completion rates, learner persistence, and engagement are always given special attention and considered an indicator of achievement in the online learning process. The more a learner interacts with content or other elements the more they are perceived to benefit from the system (Islam, 2013; Joksimović, Gašević, Loughin, Kovanović & Hatala, 2015; Zimmerman, 2012). Numerous research findings (Henrie, Halverson, & Graham, 2015; Zheng & Warschauer, 2015) have indicated that it affects engagement persistence (Croxtton, 2014; Evans, Baker & Dee, 2016), achievement (Jerry Chih-Yuan & Yu-Ting, 2016; Jo, Yu, Lee & Kim, 2015; Wei, Peng & Chou, 2015), and satisfaction (Horzum, 2015; Kranzow, 2013; Moon-Heum & Scott, 2016).

Course length, start date, and assessment type can also affect completion rates in online learning environments (Jordan, 2015). Similarly, interaction types serve as another variable affecting completion rates (Hawkins, Graham, Sudweeks & Barbour, 2013). In terms of interaction, researchers have mostly focused on learner-learner interaction (Kurucay & Inan, 2017; Grandzol & Grandzol, 2010) and teacher-learner interaction (Croxtton, 2014). On the other hand, learner-content interaction has received far less attention in comparison to other interaction types (Zawacki-Richter & Naidu, 2016).

When looking at research and trends on online learning and lifelong learning concepts, self-paced learning appears to be a frequently employed recommended model. However, at the same time, participation remains a significant issue for self-paced learning environments. Henrie, Bodily, Larsen and

Graham (2018) reported on learner engagement by analysing LMS log data, focusing on learners' activities in the system such as page views and time spent on learning, procedural, and social pages. Active participation in the system is important (Henrie, et al, 2015) and can be promoted by mandatory activities. While a few studies have focused on participation and the mandatory activities (Vonderwell & Zachariah, 2005) and assignment deadlines (Hartnett, St. George, & Dron, 2011), there are not other studies in the literature regarding the imposed pace learning approach in adult education. In this respect this study addressed the following research questions:

Research question - 1: What are the opinions of adult learners on this imposed pace blended learning program?

Research question - 2: How does the minimum completion time affect adult learners' participation in an online course?

RESEARCH METHOD

Study Context

This study was conducted in conjunction with an Occupational Safety Specialist Training certificate program offered by a public university in Turkey for corporate, public, and university students compatible with the blended learning model. The researcher did not design this learning environment and was only involved in the on-going project for the purpose of analysing the environment. Within the program, learning activities were performed in two stages: online and face-to-face. Participants first completed the online courses and then moved on to face-to-face training and internship. Students who were unable to complete the online courses could not participate in the face-to-face training section. According to the designers of this learning environment, the method kept the learners in the system and facilitated greater learner-content interaction. The course was comprised of 47 modules, each of which was first offered online and then in face-to-face classes. Total training time was 220 hours with 90 hours of online courses (81 hours online content (narrated SCORM content) + 9 hours live virtual class sessions that are not mandatory), 90 hours of face-to-face classes, and 40 hours of internship. Adobe Connect was used for virtual class sessions. Each module consisted of a five-question pre-test, a narrated online lecture, a 10-question post-test, and lecture notes. At the beginning of the program, participants were informed of the minimum amount of time required for each module. Participants were able to access a reporting system to monitor their progress and observe the modules for which they completed the minimum time required. Participants failing to meet the required online time for each module were not permitted to attend face-to-face training sessions. Moreover, they were also blocked from accessing other content materials without completing a pre-test included in each module and were thus obliged to complete online training for each module. The progress of the learning module is presented in Figure 1.

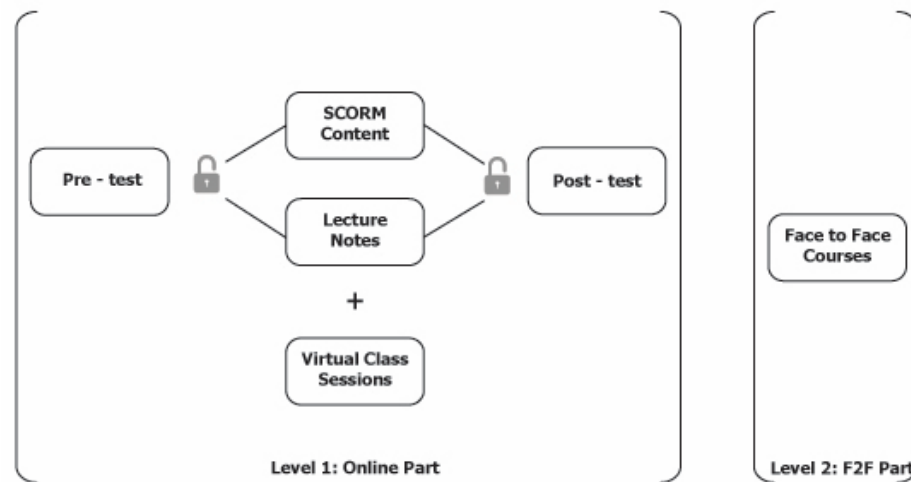


Figure: 1 The progress of learning program module

Following the face-to-face training, participants proceed to the applied training (internship) module and took an exam in order to qualify for a certificate.

Research Design

This qualitative study employed a case study approach aiming to understand the learners’ perceptions of the imposed pace learning model and what they found difficult and easier with the system. Case studies are used to describe an intervention or phenomenon and the real-life context in which it occurred while “how” or “why” questions are being posed (Yin 2003).

Participants

The participants were enrolled in a blended learning program. Demographics for the participants are presented in Table 1.

Table 1. Participant demographics

Demographics		Frequency (f)	Percentage (%)
Gender	Female	12	40
	Male	18	60
Age	25-35	15	50
	36-46	11	36,6
	47-57	4	13,3
Job	Medical Doctor	6	20
	Engineer	15	50
	Biologist	5	16,6
	Do not have a job	2	6,6
	Student	2	6,6

Data Collection Tool and Analysis

After candidate participants were contacted and informed of the study, 30 individuals who accepted

were interviewed for a total of 12 hours and 34 minutes and each interview took approximately 20-25 minutes. Interviews were conducted online (via Skype & Google Hangouts) and face-to-face. Before the interviews, each participant was read the interview protocol and provided their consent for voice recording of the interview. Goldwave voice editing software was used to record online interviews, while a voice-recording device was utilised in face-to-face interviews. Interviews held with the three individuals who did not consent to voice recording were written down.

A semi-constructed interview form was employed in the interviews. The learning environment and the related literature were examined in the preparation of the interview questions and questions were prepared paying care to not lead the participants. Probe questions were also directed according to the line of interview. All recorded data were transcribed verbatim. Coding was separated into the three groups of open coding, axial coding, and selective coding in line with Strauss and Corbin (1990). After collecting data, the researcher conducted the open coding process and the coded data were compared and emerged themes determined.

Inter-coder agreement strategy was used for reliability. Reliability was taken to refer to the coherence of responses to multiple coders of data sets (Creswell, 2007). Coder agreement levels can be calculated using the percent agreement, Cohen's kappa (for two raters), the Fleiss kappa (adaptation of Cohen's kappa for 3 or more raters), the contingency coefficient, the Pearson r and the Spearman Rho, the intra-class correlation coefficient, the concordance correlation coefficient, and Krippendorff's alpha techniques (McHugh, 2012). Two different coders analysed the codes and themes. For this data, the Cohen's Kappa coefficient was calculated as 0.79, which is an acceptable range (Krippendorff, 2004; Landis & Koch, 1977). After determining disagreements, the researcher checked all over the transcribed data and made changes on the codes.

Triangulation was employed for validity purposes and log data from the learning management system through which participants access virtual class sessions was examined. Time spent in virtual class session and log data were examined and their interaction with both the system and the content were determined. The system interaction data gathered from Moodle log files, which consists system login-out timings, page views and the other actions. Content interaction data gathered from SCORM packages through a Moodle script, which gives the duration of SCORM packages views. In addition to triangulation, the member-checking strategy was utilized for validity purposes. In this respect, 50% (n=15) of the participants were re-contacted and author's interpretations were communicated to them in order to determine whether or not there were missing or misunderstood points. As a result of member checking, no differences were identified between the author's interpretations and the participants' views.

RESULTS AND DISCUSSION

To determine the adult learners' opinions and experiences of an imposed pace course, interviews conducted with 30 participants. After the coding process, seven themes emerged under the three main headings, which form the basis of the online program: online courses, virtual class sessions, and face-to-face (F2F) classes. These main headings consisted of 7 themes, which are presented, in Table 2. Also the general outline of interview results is presented in Figure 2.

Table 2. Themes and sample codes

Themes and Sample Codes	Frequency (f)	Percentage (%)
Time constraints (try to complete, too long modules, planning issues...)	30	20.55
Mandatory attendance (have to listen the well known subjects, restrictions, hierarchic structure...)	28	19.18
Technical issues (connection issues, low sound, player problems...)	23	15.75
Session timing (evening sessions, work hour sessions...)	21	14.38
Instructional design (voice tone, tests, content flow...)	17	11.64

Effective communication (comfortable, habits, eye contact...)	17	11.64
Communication skill (energetic speaking, webcam view question-answer chances...)	10	6.85

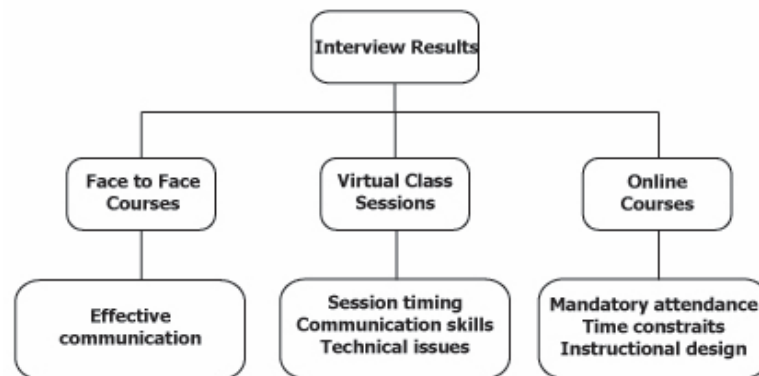


Figure 2. The outline of interview results

Research Question - 1: What are the opinions of adult learners on this imposed pace blended learning program?

Participants emphasized certain elements of the virtual class sessions: virtual class schedules, instructor’s communication skills, factors in participants’ private lives, and technical matters. Some of the participants’ views on the virtual class sessions are as follows:

“Virtual class sessions were too long. It was not productive for me since I did not choose the time. It took a certain amount of time to see what we wrote in the comments. She saw them with a few minutes delay, which therefore reduced the impact. But it was great that the virtual class sessions were recorded. I once attended a session just for the sake of it, could not concentrate. So, I watched it later at a more convenient time.” [P-2]

“It would be more beneficial if we could ask questions and talk as well as write. Because, when 23 people ask questions simultaneously by writing, your question may pass unnoticed. The camera was always on, we saw the instructor all the time. The instructor directed questions, asked us to provide examples. He was able to maintain everyone’s attention even though the class took three hours. Virtual class sessions were very productive for me.” [P-5]

“Virtual class sessions were not very effective for me since I had to take care of my child at home, face-to-face classes were more efficient. Besides, it is very important for me to make eye contact.” [P-13]

“We could ask the instructor anything to clarify; that was good. It was also very good to download presentations in virtual class sessions this provided me with extra resources. I think that such an interactive environment is more efficient for me.” [P-7]

Several studies have established that the appropriate use of virtual classes, one of the most efficient tools of synchronous interaction, has a positive effect on student satisfaction (Ke & Kwak, 2013; Yu-Chun, Andrew, Brian, Kerstin, & Yu-Tung, 2014), interpersonal interaction (Chou, 2002; Florence, Michele &

Deborah, 2012; York & Richardson, 2012), and engagement (Cho & Cho, 2014; Francescucci, & Foster, 2013). Receiving prompt answers to questions and being able to see the instructor reflected positively on the process. Similar to Martin, Parker, and Deale's (2012) study, the interviews showed the effects of recording sessions, visual presence, and the text chat feature. Analysis of the virtual class log data found that the mean duration of participation was 8 hours and 50 minutes (both watching live session & the record). In addition, the minimum watching duration was 3:54:25 and the maximum watching duration was 19:20:56. Data from the virtual class session logs is presented in Tables 3 and 4.

Table 3. Virtual class watching session logs

Duration (hour:min:sec)	Frequency (f)	Percentage (%)
6:00:00 - 8:59:00	21	70
9:00:00 - 11:59:00	7	23.33
12:00:00 and more	2	6.67

Table 4. Virtual class login counts

Min	Max	Mean
3	27	8

This is interesting result as while virtual class sessions were not mandatory, unlike the online course, participants attended the sessions either live or recorded as mentioned during interviews. In the next stage of the program, participants who completed the online courses became entitled to attend the face-to-face courses. The opinions of some of the F2F course participants following their online learning experience are as follows:

"We had to leave in the middle of class since it was during work hours. I could not benefit much from online courses because of such distraction. I would not be able to attend even if they were at night; in this sense, day classes were acceptable anyway. The fact that F2F were mandatory was great for us. At least we were not called out of class by our superiors." [P-12]

"I would like to have eye contact. It is important to ask questions immediately, or at least I would like to direct my questions during breaks. Face-to-face courses were more effective for me since I could receive instant feedback." [P-30]

"In the beginning, I attended the virtual class sessions without studying online courses. But I understood that we were supposed to study the topics beforehand. So I studied the topic before attending to virtual class sessions, but since it was too close to the end there was not much question and answer activity. For this reason, I rather asked my questions in the face-to-face environment." [P-1]

"During virtual class sessions, we could not generate many questions since we did not know much about the subject. Then, when the pieces fall into place, we could comprehend more. After learning about the subjects, we started asking more questions which happen to be during face-to-face courses. I wish online learning process and virtual class sessions were not simultaneous, but after the online content was completed so we could ask the instructor after we fully understood the topics. On the other hand, we also asked questions in the virtual class. Yet they were not like the ones we asked at the end of the training. We then asked about current topics that came to mind." [P-5]

Participants reported that they were only able to identify shortcomings in their learning at the end of

the process and that they were relaxed by being involved in a more familiar face-to-face environment. They shared the common view that listening to content from field experts and receiving answers to their questions contributed to their learning, away from the negative aspects of an online environment and without being exposed to distracting stimuli.

Research Question - 2: How does minimum completion time affect adult learners' participation to an online course?

Participant interviews highlighted mandatory attendance, minimum time limits, and instructional design as prominent. Examples of participants' experiences in these topics are as follows:

"I guess I would not follow if it did not have to, but I completed the courses because it was mandatory. Maybe I would follow the courses even though I had not stayed online as much as required to achieve an understanding." [P-23]

"Learning by reading is more efficient for me. For this reason, I followed the courses. But we had time-related problems. It was really hard to fulfil the minimum time specified for the modules. Some subjects are allocated too much time. Three hours were allocated to a subject, which required 20-25 minutes according to me. So we had to fill in the extra time, which led to a waste of time." [P-19]

"It should be flexible enough to accommodate each individual's knowledge level and reading pace. But I cannot say that mandate is totally wrong. If it had not been mandatory, we would not attend the courses. Work life as well as family responsibilities at nights would have prevented us from attending the classes. Now we at least mandatorily attended the courses." [P-13]

"The time minimum set for each course did not work for me. Because, in some topics I could not grasp the topic even though I completed the required time, while in some I understood the topic without fulfilling the minimum time limit but had to spend unnecessary time in the system to do so." [P-8]

It can be seen that the existence of mandatory attendance and time minimums were inconvenient for some participants. However, it was also founded that the mandatory attendance provided external motivation for individuals who might not otherwise attend the courses due to responsibilities in their private life such as housework and childcare. Persistence emerged as a significant problem particularly in distance learning environments (Hart, 2012; Tan, Sun, & Khoo, 2014). According to the literature and adult learning theory, higher completion rates are expected for self-paced content compared to sequential or limited content (Cercone, 2008; Lim, 2016; Rhode, 2009). However, some participants claimed otherwise and the interviews indicated that the mandatory attendance approach increased the participants' interaction with the content in the face of factors influencing attendance emerging as a result of social circumstances. Although mandatory participation can provide learner-content interaction, it has also been reported to have some unintended side effects. Similar with Bullen (2008)'s research, for some students, this participation aimed only at obtaining a grade so this mandatory participation did not necessarily result in more participation (Bullen, 2008).

The findings on content interaction during online courses indicate the necessity of making arrangements with regard to design process. Interviews indicated that some elements positively influenced the participants while others had a negative effect. Some of the participants' views on these are as follows:

"Some instructors had very boring tone of voice and spoke as if they were sleepy (narrated SCORM content). So, such content was not good in audio terms. Some instructors had a pleasant speaking voice and we enjoyed listening to their courses. The version where they gave a lecture rather than monotonous reading was much better." [P-6]

"I followed the courses on a mobile device. This was very convenient. While I followed the

courses on my computer at work, I was much more comfortable with using a tablet at home. It was great being able to listen while relaxing on the sofa.” [P-15]

“In the courses, I paid attention to my test results the most. If I got a low grade on the post-test, I studied the same content again and reread the lecture notes.” [P-2]

“The increase in the number of my correct answers in the post-test made me happy and motivated me. The fact that my correct answers increased after doing the pre-test without having any knowledge in the first topic and then studying the content was a serious source of motivation for me.” [P-1]

Course design has an important influence on attendance in both online and traditional learning environments (DeBoer, Ho, Stump & Breslow, 2014; Sakar, 2009). During the design process experts generally focus more on screen or visual design than interaction or audio content design. In the current study, audio design was identified as an emergent finding. The instructors’ ability to keep their tone of voice as natural as possible in video or audio recordings and maintain the participants’ attention was among some of the most notable points of the interviews. Furthermore, it is also crucial that designs promote attendance and a high level of satisfaction with the online learning environment (Costley, Hughes & Lange, 2017; Czerkawski & Lyman, 2016; Yilmaz, 2017). All participants completed the learning modules and pre and post-tests too. Completion of pre and post-tests can be seen as a motivating for participants and allow for the monitoring and evaluating of their progress. Moreover, the integration of activities, which allow participants to evaluate themselves to the process, also increases attendance (Förster, Weiser & Maur, 2018; Kinlaw, Dunlap & D’Angelo, 2012).

CONCLUSION

From the advent of distance education to the present day the primary focus of researchers has been on the best way to design the relation between individuals and technology to provide learners with efficient and meaningful learning experiences. Today, special care is given to designing systems and teaching processes that hand the control back to the learners. Adult learning theory in particular envisages that having control promotes conscious cognitive participation in learners and that progressing through one’s own choices is more appropriate. However, this may not hold true for each adult. Kirschner and van Merriënboer (2013) stated that learners are not always the best managers of their own learning process.

Participants taking part in an adult distance education environment were asked for their opinions regarding the instructor-led system with the aim of developing recommendations for designing environments for adults. Interviews emphasised that ‘one size does not fit all’. Although mandatory attendance and minimum time limits imposed repressed participation in some learners, the majority considered this to be an advantage that increased system log-on rates. The literature indicates that while adult learners prefer distance education due to circumstances in their social and private lives, these responsibilities may hinder the process. Utmost care should be given while designing learning environments for adults to create solutions for more flexibility that also promotes attendance. In learning environments with high attendance rates, satisfaction, and motivation, lower dropout and higher achievement levels are expected.

Positive learning experiences can be helpful in improving students’ self-control and self-efficacy (Wineman, 2013). To provide positive learning environments, different pedagogical techniques, delivery approaches, and media should be taken in consideration during the instructional design process. During this blended learning program none of the participants dropped out and all of them completed the activities in the required time limits. However, it is interesting that only 17 of 30 participants were able to pass the qualifying exam, which could be considered an argument that the imposed pace learning approach does not solve learning problems. This result also indicates that an attempt to maintain high learner-content interaction does not automatically translate to academic achievement. Xiao (2017) explained this situation using the proverb that “you can lead a horse to water, but you cannot make him drink”. Unless the design and production of learning resources is informed by empirical evidence from studies of learner–content

interaction, the course materials/content may not appeal to the target learners, engage them in effective and efficient learning, or sustain their motivation as intended by the course developers and is thus not as 'thirst-quenching'.

IMPLICATIONS AND LIMITATIONS

Institutions are trying different methods for keeping learners active in the system. Especially adult learners who have lots of responsibilities and also lack of familiarity with technological tools are more tend to be isolated. Even if the mandatory activities can keep these learners in the system, additional activities can apply. Integration notification and tracking systems to the design of the program and sending both regular and user behavior based notifications via e-mails, short message services or mobile apps can increase the motivation and participation as well. Besides these technologies learning analytics and data mining techniques can be used for tracking learners activities and increase the engagement as well. Even if adult learning theory is one of the old theories, it is still valid for explaining adult's behaviours. So for the future studies testing and analysing the approaches on which adult learning theory is based may be useful. The assumptions set forth by Knowles in 1984 have not been fully embraced by adult learners. Although revolutionary changes in information and communication technologies promote more independent, self-directed individuals, the failure to reach the expected level may be associated with the fact that adults are digital immigrants. How young individuals and children, today's digital natives, turn out as adult learners constitutes a question for future studies. Perhaps, Knowles' 1984 assumptions will be applicable to individuals learning in digital environments in 10 years.

There are also two limitations for this study. The most important one is this study has been conducted as a single case study at a single institution. And the learning environment in this study had idiosyncratic specifications such as minimum time limitations and mandatory attendance. Due to these limitations, the conclusions may not be generalized to other contexts or instructional settings. Additionally, this study contains many variables to present a holistic point of view such a designed environment. Future studies can elect the variables and focus on just few of them for a deeper analysis.

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