INDIVIDUAL AND CONTEXTUAL PREDICTORS OF ENGAGEMENT IN ONLINE LEARNING ENVIRONMENTS

Yasemin KURTOGLU

ORCID:0000-0002-7124-4083
Department of Computer Education and Instructional Technology
Anadolu University
Eskisehir, TURKIYE

Dr. Ozcan Ozgur DURSUN

ORCID: 0000-0002-5866-5748
Department of Computer Education and Instructional Technology
Anadolu University
Eskisehir, TURKIYE

Received: 13/01/2025 **Accepted:** 25/03/2025

ABSTRACT

This mixed-methods study examined factors that influence student engagement in online learning environments at public universities in Turkiye setting. Quantitative data were collected from 429 undergraduate students enrolled in distance learning programs and MOOCs at these universities, while 385 of the participants also provided qualitative data. The Instructional Motivation Survey and Volitional Competence Scales were used to collect the quantitative data. There were no significant gender differences in course completion or dropout rates, although educational level was positively associated with course completion. Qualitative findings supported this, identifying personal motivation for success and development as key drivers of engagement. In addition, students who were more motivated by the course had better completion rates. Environmental factors, including external support and reliable access to technology, were also significant, demonstrating the complex interaction between personal and contextual factors in shaping online learning outcomes.

Keywords: Motivation, online learning, engagement, MOOCs, distance education.

INTRODUCTION

Rapid advancements in technology have fundamentally changed the nature of information, making it increasingly dynamic and subject to continuous updates. This shift has led to a growing demand for immediate and reliable access to information, positioning online learning as a critical component of lifelong learning. In response, universities have significantly expanded their online learning initiatives, a trend accelerated by the COVID-19 pandemic, which disrupted traditional modes of education. As a result, many institutions have established dedicated distance learning departments and begun offering programs at various academic levels, including associate, undergraduate, and graduate degrees. Distance education facilitates interactive learning experiences through information and communication technologies, allowing students and instructors to engage without the need for physical co-presence. In contrast, open education systems offer low-cost, non-formal learning opportunities to a wide audience through the internet (Can, 2019).

Despite the growing demand and numerous benefits of online learning, these environments continue to face challenges related to student dropout (Muljana & Luo, 2019). A recurring theme in the literature defines dropout as a sequential process that begins when students fail to meet the academic expectations set by the institution, which leads to a gradual disengagement from institutional values and ultimately results in their withdrawal from the learning environment (Okur et al., 2019). This issue has emerged as a major concern, not only for students but also for various educational stakeholders. As a result, both researchers and practitioners are increasingly focused on addressing this challenge (Muljana & Luo, 2019). For example, learners enroll in massive open online courses (MOOCs) to meet their personal needs and expectations, as these courses generally lack entry barriers. However, research consistently shows that MOOC completion rates remain low (Maya-Jariego et al., 2020).

While online learning environments are widely recognized for their potential in both formal and informal educational contexts, high dropout rates and low course completion rates remain critical concerns. The reasons behind non-completion in MOOCs are generally categorized into two main groups: personal factors and program-related factors (Aydin & Yazici, 2020). One study found that men tend to have higher MOOC completion rates than women, and that undergraduate and graduate students outperform those in lower academic levels (Goktas et al., 2020). However, contrasting evidence suggests that women may actually outperform men in certain online learning contexts (Moore & Wang, 2021). The decision to continue or withdraw from open and distance education is shaped by four main factors: internal factors (e.g., academic and social integration, resource availability), external factors (e.g., financial status, family and social life), personal characteristics (e.g., personality traits, goal commitment), and learner skills (e.g., self-regulation, metacognitive skills) (Yilmaz, 2020). In addition, students with higher incomes, those living farther from educational institutions, and male students have been found to be more likely to dropout (Vieira et al., 2023).

The inability to actively engage in courses, along with a lack of motivation due to both environmental and individual factors, has been identified as a major challenge in online education (Ilgaz, 2014; Sumer, 2016). Three prominent themes that contribute to dropout rates in online learning environments are insufficient motivation to persist, unfavorable perceptions of course content, and poor time management skills (Azhar et al., 2024). Learners who demonstrate intrinsic motivation -characterized by a desire for lifelong learning, curiosity about online learning, access to respected educators and institutions, and engagement with relevant course material- tend to experience higher levels of success than those driven by extrinsic motivation, such as career advancement, advancement in formal education, societal contributions, obtaining certificates, or becoming part of online communities (Moore & Wang, 2021). In addition, action efficacy, a key component of learning motivation, is widely acknowledged as an essential factor for academic achievement (Ucar et al., 2020), as it is closely related to the learner's commitment to their goals.

Because learners are critical stakeholders in the educational process, their level of motivation directly impacts the overall effectiveness of the system. Enrolling in an online course and then dropping out without completing the learning objectives leads to unmet academic goals, wasted educational resources, and loss of valuable time. In light of these implications, this study seeks to explore the factors that influence learner participation in online learning environments, with particular attention to course completion, dropout, or persistence, and how motivation plays a pivotal role in shaping these outcomes.

LITERATURE REVIEW

ARCS-V Motivation Model

Motivation is widely recognized as one of the most important factors influencing student engagement in online learning environments. It plays a pivotal role in the development of effective instructional materials and content (Khan et al., 2018). To address the motivational challenges and enhance students' intrinsic and extrinsic motivation, various strategies have been implemented. One such approach is the ARCS motivational design model, which was specifically developed to guide the integration of motivational strategies in distance education and training contexts. The model is based on four core principles: Attention, Relevance, Confidence, and Satisfaction (ARCS), which collectively aim to foster learner engagement. While this four-dimensional model has been widely applied in motivation research, it has been found to be inadequate in fully explaining the complexities of learner persistence (Keller, 2016).

Recent studies indicate that some learners persist and complete their educational programs despite declining motivation, while others abandon their studies even when the outcomes are perceived as valuable. To address these discrepancies in learner persistence, the model was revised to include a fifth principle—*Volitional Competence*—which emphasizes the importance of learner agency and sustained effort. This revision led to the creation of the ARCS-V model (Keller, 2016), which better accounts for the dynamic interplay between motivation and persistence in different learning environments.

Theoretical Approaches to Participation in Education

A variety of theories and models has been developed to explain the underlying reasons for dropout in higher education. Among the earliest contributions, Spady (1970) proposed the *Explanatory Sociological Model*, which emphasizes individual factors and highlights the role of social integration in the dropout process. According to this model, students who fail to integrate into the social fabric of the university are more likely to discontinue or interrupt their education, with academic success being a critical determinant in the dropout process (Avci, 2019).

To foster student retention, researchers have approached the issue through both descriptive and prescriptive lenses. Early models, such as Tinto's *Student Integration Model* (SIM), primarily examined the causal relationships among various factors that affect student persistence. First introduced in 1975 and later revised in 1993, Tinto's model remains one of the most widely referenced frameworks in the study of university dropout (Braxton, 2000). It posits that an individual's decision to either persist or withdraw from university is influenced by a combination of pre-entry qualifications, student goals and commitments, as well as academic, social, and institutional experiences (Tinto, 1975).

While Tinto's model focuses primarily on traditional students living on or near campus, Bean and Metzner (1985) expanded the discourse by shifting the focus toward non-traditional students, such as older, part-time, and suburban students. Unlike younger students, who typically form social circles around campus life, non-traditional students are more embedded in external social networks, including family, friends, and employers. Therefore, they are less influenced by the social environment of the institution and more driven by academic opportunities, such as earning certificates or degrees (Bean & Metzner, 1985).

Building on Tinto's framework, Kember (1989) developed the *Model of Drop-Out from Distance Education*, which is specifically designed to understand the persistence decisions of part-time, off-campus, and mature students. These learners often engage in the learning process individually, apart from social or educational gatherings. According to Kember, the decision to persist or drop out is largely influenced by the impact of academic responsibilities on the student's family, work, and social life. When these pressures become overwhelming, the risk of dropping out increases. Kember (1989) argues that students weigh the time, effort, and costs associated with education against the perceived benefits of completing their studies to make persistence decisions.

Clearly, a variety of factors influence both online and face-to-face learners' decisions to persist or withdraw. While dropout models for distance learning offer insights into the persistence decisions of distance or open learners, traditional student models remain more appropriate for face-to-face learners. The increasing demand for online learning environments further highlights the need to investigate the various factors that shape learner engagement and participation.

Purpose

The primary objective of this research is to identify and analyze the factors that influence learner engagement in online learning environments. In order to fully explore these dynamics, the study will address the following research questions:

1. What are the key factors that influence learner participation in online courses?
2. How does participation in online courses vary by gender?
3. What is the relationship between learner motivation and participation in online courses?
4. How does volitional competence relate to participation in online courses?
5. What is the relationship between volitional competence and learner motivation?

METHOD

This study utilizes a transformative mixed-methods design, which incorporates both quantitative and qualitative approaches. According to Creswell (2018), a transformative mixed-methods design involves the simultaneous collection and analysis of quantitative and qualitative data. Analysis of each type of data is conducted separately, and integration typically occurs either during data interpretation or, if applicable, when one type of data is transformed for further analysis.

For the quantitative component, the study follows a relational survey model. According to Creswell (2012), in this method, quantitative and qualitative data are collected and analyzed simultaneously and combined in the interpretation phase. It is typically used to explore the relationships between two or more variables. In this context, the correlational model was used to examine the factors influencing students' completion of online courses. Data collection for the quantitative analysis included a questionnaire designed to measure students' motivation through the course materials, as well as a scale to assess their learning level.

The qualitative component of this study uses a phenomenological approach. As Cropley (2002) explains, phenomenological research explores phenomena that individuals may recognize but have not fully understood in depth. In such research, data are collected from individuals or groups who have directly experienced the phenomenon and can articulate their perspectives (Creswell, 2018). In this study, qualitative data were obtained through semi-structured interviews with learners enrolled in online courses, focusing on factors that influence course participation and sustained motivation. Quantitative and qualitative data, along with demographic information, were collected simultaneously for a comprehensive analysis.

Participants

The study involved 429 learners with prior experience in online courses at various public universities in Turkiye. Participants for the quantitative phase were selected using a purposive sampling method to ensure the inclusion of individuals with relevant online learning experiences. The demographics of these participants are shown in Table 1.

Table 1. Demographics of Quantitative Research Participants

	Category	f	%
Gender	M	168	39,2
	F	261	60,8
Age	<= 21	150	35,0
	22 - 28	136	31,7
	29 +	143	33,3
	Total	**429**	**100,0**

In the qualitative phase, data were gathered from 385 participants who responded to open-ended questions via an online survey. The demographic information for these participants is shown in Table 2.

Table 2. Demographics of Qualitative Research Participants

	Category	f	%
Gender	M	151	39,2
	F	234	60,8
	Total	**385**	**100,0**

This structure allows for a robust analysis, that draws on diverse participant backgrounds in both the quantitative and qualitative phases, ensuring a comprehensive understanding of the factors that influence learner engagement in online learning environments.

Data Collection and Analysis

Data for this study were collected simultaneously from the same participants using Google Forms. For the quantitative part, the Turkish adaptation of the Instructional Materials Motivation Survey (IMMS), originally developed by Keller and translated into Turkish by Kutu and Sozbilir (2011), was used. This survey aims to assess the motivational impact of instructional materials on university students. The questionnaire is based on the ARCS design model and includes two dimensions: attention-relevance and confidence-satisfaction, with a total of 24 items. The overall Cronbach's alpha reliability coefficient for the IMMS was reported to be 0.83. For the individual factors, the attention-relevance dimension had a Cronbach's alpha of 0.79, while the confidence-satisfaction dimension had a value of 0.69.

The Volitional Competence Scale (VCS), developed by Keller, Ucar, and Kumtepe (2020), served as the second quantitative tool. This scale assesses learners' volitional control and consists of two factors: action planning and action control, with a total of 13 items. The internal consistency (Cronbach's alpha) for the total scale was 0.825, with subfactor values of 0.732 for action planning and 0.809 for action control.

For the qualitative portion, data were gathered through eight open-ended questions designed to explore learners' perspectives on factors that influence their participation in online courses. The combination of quantitative and qualitative data collection provided a comprehensive understanding of the variables under study.

The data collection tools, and corresponding analysis methods used to address the research questions are presented in Table 3. These methods are consistent with the mixed-methods approach to ensure a comprehensive analysis of both quantitative and qualitative data.

Table 3. Data collecting tools and analysis methods

Research question	Data collecting tools	Analysis methods
1. What are the factors that influence participation in online courses?	Open-ended question	Content analysis
2. Does participation in online courses differ according to demographic characteristics?	Demographic Data Form	Chi-square test
3. What is the relationship between motivation and participation in online courses?	Demographic Data Form IMMS	Independent samples t-test
4. What is the relationship between volitional competence and participation in online courses?	Demographic Data Form VCS	Independent samples t-test
5. What is the relationship between volitional competence and motivation?	IMMS VCS	Pearson's product-moment correlation

Validity and Reliability

The reliability of the Instructional Materials Motivation Survey (IMMS) was verified by calculating Cronbach's alpha coefficient, which showed a high overall reliability score of 0.96. Specifically, the attention-relevance factor had an alpha value of 0.948, and the confidence-satisfaction factor had a value of 0.917, indicating strong internal consistency. Similarly, for the Volitional Competence Scale (VCS), the overall Cronbach's alpha coefficient was 0.949. For the two sub-factors, the action planning dimension had a coefficient of 0.899, and the action control dimension had a coefficient of 0.935. These values indicate the reliability of both scales in measuring the intended constructs.

Content analysis was used for the qualitative data. This approach involves identifying recurring themes and patterns from participants' responses to the open-ended questions. To protect the confidentiality of participants, their names were replaced with codes in direct quotes.

Ethical Issues

The research was conducted according to the ethical guidelines set by the Ethics Committee of the university. Approval was obtained on 03/03/2021 under the protocol number 24544. Participation in the study was voluntary, and informed consent was obtained from all participants. In addition, permission to use the IMMS and VCS scales was obtained from the respective authors. ChatGPT version 4o was used to assist in the formal editing of the study according to APA7.

FINDINGS

Findings Related to Gender and Online Course Participation

The relationship between gender and course completion was examined using the chi-squared test of independence. The analysis revealed that the course completion rate was 54.8% for males and 56.3% for females, with an overall completion rate of 55.7% for all participants. The results of the chi-square test of independence (with Yates' correction for continuity) indicated that there was no significant relationship between gender and course completion. Specifically, the chi-square value was (1, n = 429) = .05, p = .83, with a phi coefficient of .02, indicating a very weak association between gender and course completion.

Findings Related to Online Course Participation and Motivation

The independent samples t-test was conducted to examine the relationship between the IMMS total score and the course completion status of the participants. As shown in Table 4, the analysis provided insight into whether motivation, as measured by the Instructional Materials Motivation Survey (IMMS), differed between those who completed the course and those who did not.

Table 4. IMMS total score and course completion

	N	$\bar{X}$	SS	SD	t	p
No Completed	190	79,44	20,763	427	-2,124	,722
Completed	239	83,79	21,349			

According to the results in Table 4, the significance value from Levene's test is p > .05 (.722), indicating that the variance between the two groups is equal, and the assumption of homogeneity of variance is met. The t-test results show a statistically significant difference between the two groups (p = .034). This confirms that the difference in mean IMMS scores between participants who completed the course and those who did not is significant.

The mean IMMS score for participants who completed the course was 83.79, compared to a mean score of 79.44 for those who did not complete the course. Despite the significant difference in scores, the eta-squared value was calculated to be .03, indicating that the effect size is very small. This suggests that while motivation (as measured by the IMMS) plays a role in course completion, the overall impact of motivation on course completion might be limited when other factors are taken into account.

Findings Related to Online Course Participation and Volitional Competence

The independent samples t-test was used to assess the relationship between the total score on the Volitional Competence Scale (VCS) and students' course completion status. The results, as shown in Table 5, provide an understanding of how volitional competence, or students' ability to plan and control their actions, relates to their ability to complete online courses.

Table 5. CVS total score and volitional competence

	N	X̄	SS	SD	t	p
No Completed	190	46,46	11,076	427	-,942	,197
Completed	239	47,53	12,034			

According to Table 5, the significance value from Levene's test is p > .05 (.197), indicating that the assumption of homogeneity of variance holds. The t-test results show no significant difference in the mean VCS scores between those who completed the course and those who did not (Sig. (2-tailed) = .347, p > .05).

The mean VCS score for participants who completed the course was 47.53, compared to a mean score of 46.46 for those who did not complete the course. This small difference in scores was not statistically significant, and it was calculated that only 0.2% of the variance in volitional competence was explained by course completion. This suggests that volitional competence, while important, does not appear to be a strong differentiator of whether students complete or drop out of their courses in this context.

Findings Related to Motivation and Volitional Competence

In the analysis, a scatterplot was used to show the relationship between the IMMS total score and the VCS total score. The results showed that there was a linear, moderate, and positive relationship between these two variables, making it appropriate to use correlation analysis. In order to quantify this relationship, the Pearson correlation coefficient was calculated, resulting in a strong positive correlation of r = .739.

According to Cohen's (1988) classification of effect sizes, a correlation between .10 and .29 indicates a small effect, .30 and .49 indicates a moderate effect, and .50 to 1.0 indicates a strong effect. Therefore, the r value of .739 in this study falls within the strong correlation range, indicating that higher levels of motivation (IMMS scores) are strongly associated with higher levels of volitional competence (VCS scores).

Additionally, the coefficient of determination (r^2) was calculated to determine how much variance is shared between the two variables. With r = .739, the shared variance is approximately 55%, meaning that motivation explains 55% of the variance in volitional competence scores in this sample. This strong relationship suggests that as motivation increases, volitional competence tends to increase proportionally.

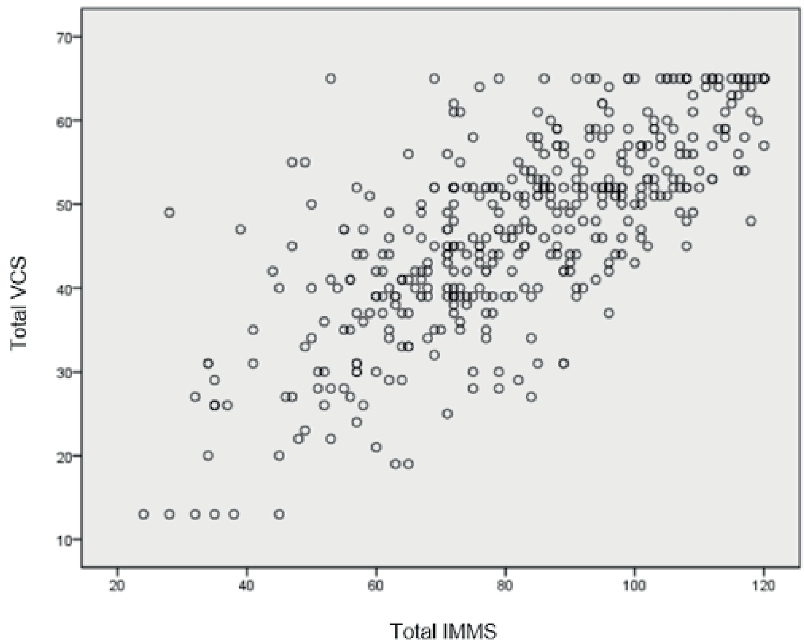

Figure 1. Scatter plot for IMMS with VCS

Findings on the Factors that Ensure Participation in Online Courses

Participants' views on factors influencing their participation in online courses were analyzed using content analysis and categorized into five main themes:

1. *Environmental factors*: These include external circumstances, such as family support or pressure, and more general conditions, such as the pandemic, that encourage participation in online courses.
2. *Personal factors*: Individual motivations such as personal growth, academic success, career advancement, motivation, sociability, time, and cost benefits of online education influence participation.
3. *Instructor-Oriented factors*: The instructor's teaching style, communication, approach, and expertise have a significant impact on learner engagement. Effective instructor-student interaction can increase participation rates.
4. *Instructional factors*: The design and delivery of the course content, the teaching method, the attendance requirements, the course structure, and even the length of the course are critical. Clear, engaging, and interactive course content encourages higher participation rates.
5. *Technological factors*: Technological infrastructure, such as Internet access, audio-visual quality, and flexibility in accessing course materials, is essential to enabling student participation in online courses.

These themes summarize the key influences on student engagement in online courses and draw attention to the various factors that can affect learning success in virtual environments.

Environmental Factors

Participants acknowledged that online courses play a critical role in mitigating the risks associated with epidemics, with the COVID-19 pandemic being a particularly important driver of course participation. One participant, coded P283, shared this observation about the environmental context: "*The classroom environment is crowded. In online education, you can understand the teacher better because you are watching the videos alone. Of course, the biggest factor is the virus.*" This reflects how external health concerns, such as the pandemic, have become a significant factor in shaping learners' decisions to participate in online courses. The shift to online learning provided an alternative to traditional classroom settings, reducing physical contact while maintaining access to education.

Personal Factors

Success in the course emerged as an important factor in participants' continued engagement. As one participant put it: "*To be successful in the course, to pass the course, to gain knowledge*" (P96). This suggests that academic achievement and the desire to succeed are significant motivators for learners to remain engaged.

The cost advantage associated with online courses was another influential factor in encouraging participation, as one participant noted: "*Saving time and money, being able to listen again, etc.*" (P397).

The motivational aspects are consistent with the quantitative findings, where the mean IMMS and VCS scores were higher among participants who persisted in the course. One participant elaborated: "*Why does the person want to participate in these programs? If the goal is self-improvement, the effectiveness and satisfaction gained from the program are even greater*" *(K504).*

Socialization was another benefit of online courses, that provided opportunities for participants to interact, as one learner noted: "*My conversation with friends…" (P119).*

Finally, the time flexibility of online courses was cited as an advantage: "*Online courses help save time and make better use of it" (P397).* These comments suggest that personal factors such as achievement, personal development, cost benefits, motivation and time management are critical in encouraging continued participation in online learning environments.

Instructor-Oriented Factors

Participants' comments about communication with the instructor and the interactive aspects of the courses were categorized under the sub-theme of the communication within the broader theme of instructor-related factors. The quality of communication between instructors and students was often cited as critical to ensuring participation. One participant noted: "*If the communication between students and teachers is good, the attendance rate in courses will increase" (P278)*. This emphasizes the importance of clear, timely, and supportive learner-teacher interactions that increase engagement.

Instructor presentation style was another influential factor, consistent with the IMMS results. The attention-relevance factor, which includes engaging students and stimulating their curiosity, showed higher mean scores among those who did not drop out. One participant noted: "*The fact that a lecturer tries to convey the same spirit in online lessons as in face-to-face lessons, and the materials that reflect the spirit of the lesson, are factors that ensure my attendance" (P254).* This suggests that instructors who adapt their presentation style to online platforms, and make it as engaging as face-to-face lessons, play a key role in keeping students motivated.

Participants also emphasized the instructor's expertise, knowledge, and experience as factors that increased course participation. One learner shared: "*The fact that the instructor has a proven track record in education, is skilled at what he does, and can use technology correctly and efficiently increases the effectiveness of the course" (P69).* This highlights that, in addition to communication and presentation, the instructor's technical competence and mastery of the subject are essential to maintaining student engagement in online learning environments.

Finally, the instructor's demeanor and approachability were frequently mentioned. A friendly, respectful, and supportive attitude was seen as crucial, as one participant expressed: "*The teacher's smiling face, his respect for the student, placing the student in their rightful position, and valuing them" (P421)*. This suggests that an instructor's personal qualities and attitude toward students are just as important as their academic and technical skills in fostering learner engagement.

Instructional Factors

Participants identified several instructional factors, such as the comprehensibility of content, quality of instructional materials, instructional style, subject matter, and attendance requirements, as key influences on their course participation. These factors were categorized into several sub-themes: attendance requirement, content, teaching method, subject, and time.

Some participants indicated that the attendance requirement improved their participation, while others felt more inclined to participate without the requirement. As one participant noted: "*First of all, being able to participate from home, where you feel comfortable in every way. You can share what you have learned with your relatives at home, reflect on it, discuss it, and it becomes enjoyable. The absence of any obligation to attend, combined with easy accessibility..." (P305)*.

The clarity and simplicity of the material were key for many learners. One participant explained: "*Simple explanations, clear language, and the simplification of topics" (P75).*

Engaging and interactive lessons that were visually appealing and entertaining also played a significant role. This observation is consistent with the higher attention-relevance scores for those who did not drop out, as found in the IMMS subfactor analysis. As one participant noted: "*It should be fun, efficient, and fluent" (P388).*

Relevance and interest in the subject matter of the course emerged as another critical factor in engagement. One participant commented: "*If it is an interesting course and I want to learn, I will continue" (P32)*. This is consistent with the relevance dimension of the ARCS model, which emphasizes that learners are more likely to stay engaged when the course is perceived as valuable and connected to real-world applications.

Participants also stressed the importance of the length and timing of the course. A short and concise course was more likely to keep them engaged. As one participant noted: "*The duration of the course is short, the lessons are late, and the necessary course information is provided without overloading" (P187).*

These findings reflect the importance of well-structured content, engaging delivery, and learner-centered scheduling in maintaining learner participation in online environments.

Technological Factors

The technology theme was broken down into sub-themes based on participants' feedback, including infrastructure, location independence, audio-visual quality, and time independence.

Access to the Internet, reliable connection speed, and the availability of appropriate devices to access course materials were key issues in this sub-theme. For example, participant P431 stated: "*Having enough equipment and internet*". This reflects the importance of a reliable technology infrastructure to support online learning. Without such resources, learners are at risk of falling behind due to technical barriers.

Many participants valued the flexibility offered by online learning environments, particularly the ability to choose a quiet and comfortable location. Participant P364 said: "*I can be in a quiet environment as I like and be a participant at the same time. It is comfortable. I can concentrate well*". This illustrates how location flexibility reduces distractions and improves focus, making online courses more adaptable to individual preferences and needs.

High-quality audio and visuals were critical to engagement. Participant P399 emphasized the importance of these factors by saying: "*Listening to the lecturer, who is engaging, clear, and has strong communication skills, with smooth microphone and image quality*". Poor audio-visual quality can disrupt the learning experience and reduce the effectiveness of instruction, making it essential to maintain student engagement in online environments.

One of the major benefits of online learning is the ability to access materials and lectures at any time. As participant P143 noted: "*The concept of time and the fact that the student can join in at any time*". This feature of online courses allows students to learn at their own pace, accommodating different schedules and time zones, which is especially beneficial for those with other commitments. These technological factors underscore the need for robust infrastructure, high-quality media, and flexible learning environments to support student success in online education.

CONCLUSION

The study used a convergent mixed-methods approach, integrating both quantitative and qualitative research methods to examine the factors that influence learner engagement in online learning environments. This method allowed for a comprehensive exploration of the research topic from multiple perspectives.

Quantitative Analysis:

- The quantitative data was gathered from 429 participants and analyzed using statistical methods. This data helped to identify the relationship between key variables such as demographic characteristics, motivation, and volitional competence, providing measurable insights into the factors that influence course participation and engagement.

Qualitative Analysis:

- The qualitative section involved 385 participants and focused on in-depth insights through content analysis. This approach allowed the researchers to explore personal experiences and reasons for staying or dropping out from the learners' perspectives. By examining narratives and detailed responses, the study uncovered subjective factors that contribute to engagement in online courses.

Key Findings:

1. Demographic characteristics: The study examined the role of gender, education level, and other demographic variables in predicting course participation and completion rates.
2. Motivation and volitional competence: The research identified significant relationships between learners' levels of motivation and their commitment to achieving their goals (volitional competence). Higher levels of motivation were associated with greater persistence in course completion.
3. Reasons for dropping out or continuing: Qualitative insights from participants revealed various factors such as personal development, instructor communication, technological issues, and course structure that influence whether students continue or drop out of online courses.

In summary, the study provides a comprehensive understanding of the factors that shape learner engagement in online environments, highlighting the importance of both internal motivation and external support structures.

Discussion

This study examined the relationship between demographic characteristics and participation in online courses. The results showed no significant difference in course completion and dropout rates between men and women, which is consistent with some previous studies. However, the literature presents mixed results regarding gender differences. For example, Goktas et al. (2020) found that men completed MOOCs at higher rates, while Moore and Wang (2021) highlighted better performance among women in these environments. Similarly, Vieira et al. (2023) reported a higher dropout rate among male students compared to their female counterparts, highlighting the need to consider contextual factors in gender-based engagement in online learning.

The relationship between online course participation and motivation levels further supports the role of motivation in successful course completion. A significant difference in IMMS scores was observed between those who completed their courses and those who did not, favoring the former. This is consistent with Yilmaz (2020), who found that insufficient motivation is a critical barrier to course completion. The results also echo the findings of Moore and Wang (2021), who demonstrated that student motivation plays a central role in academic success in online environments.

Finally, the analysis of the relationship between motivation and volitional competence revealed a strong positive correlation between IMMS and VCS scores. This suggests that learners with high levels of motivation are more likely to make sustained efforts to achieve their academic goals. Conversely, those with lower levels of motivation may abandon their goals when faced with obstacles. This is consistent with Keller's (2016) ARCS-V model, which emphasizes that volitional competence—the ability to persist in the face of challenges—is a critical determinant of successful course completion. According to Keller, action efficacy, a key aspect of volitional competence, allows learners to assess whether motivational strategies need to be adjusted, thus allowing them to maintain or increase their engagement. On the other hand, Chen et al. (2020) argue that while intrinsic motivation and satisfaction can drive course completion a certain point, student motivation may be limited to certain stages. The authors further suggest that a highly motivated student may drop out of the course after achieving their initial personal goals.

This study categorized the factors influencing learner participation in online courses into five main themes: environmental, personal, instructor-related, instructional, and technological. Within the environmental theme, both parental pressure and the COVID-19 pandemic emerged as primary factors. These findings are consistent with Yilmaz (2020), who identified family support as a critical factor in students' decisions to either continue or drop out of open and distance education programs. Vieira et al. (2023) also highlighted the impact of family and social circles, noting that family challenges can lead to higher dropout rates. Consistent with Kember's (1989) Model of Drop-Out from Distance Education, family influences were once again confirmed as critical determinants of whether students persist in or leave their studies. The pandemic was also cited as a significant contributor to course continuity, paralleling the findings of Vieira et al. (2023), who reported the pandemic as a prominent factor leading to course dropout.

Under the personal theme, success, personal development, professional development, and cost-effectiveness were highlighted as motivations for continuing with online courses. These findings support Yilmaz (2020), who emphasized job utility, career advancement, and development opportunities as key reasons for persistence in online education.

Achievement and motivation emerged as important determinants of course participation, consistent with previous literature (Bean & Metzner, 1985; Kember, 1989; Tinto, 1975). Factors such as the desire to learn, interest in the course, goal setting, and effort to achieve these goals, along with the pursuit of a diploma or certificate, were all recognized as driving forces behind course participation. These findings are consistent with Aydin and Yazici (2020), who found that certification was a strong motivator for continued course enrollment. In addition, Moore and Wang (2021) identified intrinsic motivation as a strong predictor of success, while Azhar et al. (2024) confirmed that students who lacked sufficient personal and academic motivation were more likely to drop out. Goal clarity, as highlighted by Bean and Metzner (1985), plays a central role in students' decisions to persist, further supporting the notion that commitment to one's academic goals is a powerful motivator for continued engagement.

Another critical factor, highlighted by participants, was the opportunity to socialize, which is consistent with Yilmaz (2020), who reported that interaction among students contributes to motivation. In addition, the interactivity of the class was frequently mentioned as a key influence on participation. Aydin and Yazici (2020) similarly suggested that timely feedback and increased interaction between learners and instructors would promote engagement. Correspondingly, Azhar et al. (2024) observed that students' willingness to attend classes decreased in the absence of interaction with teachers and peers, while Vieira et al. (2023) noted that dissatisfaction with lecturers often led to dropout. Similarly, it is emphasized that teacher influence also supports student interaction (Wang, 2024).

In terms of instructional factors, the comprehensibility of the content, the quality of materials, the fluidity and enjoyment of instruction, and the relevance of the subject matter were highlighted as important factors for attendance. These findings are in line with Aydin and Yazici (2020), who recommended that instruction should be more engaging and detailed. Azhar et al. (2024) also identified uninteresting or non-interactive course materials as a major contributor to dropout rates. Course duration was another important factor: shorter courses tended to promote attendance, whereas longer ones led to higher dropout rates, as confirmed by Azhar et al. (2024). In addition, Vieira et al. (2023) also cited dissatisfaction with the course content and structure as major reasons for student withdrawal.

Within the technology theme, factors such as infrastructure, location independence, audio-visual quality, and time independence were identified as key enablers of participation. Consistent with Azhar et al. (2024), issues related to access to technology and the usability of interfaces were found to impact participation. In addition, the importance of audiovisual quality in supporting participation mirrors the content design suggestions of Aydin and Yazici (2020).

Recommendations for Practitioners

Increase student motivation: Instructors should increase student motivation by providing timely feedback and making courses interactive. Presenting content in an engaging, clear, and entertaining way helps maintain interest and increase completion rates.

Provide technology support: Institutions need to ensure that online learning environments are robust and accessible. Providing technical support to students who face challenges can help prevent disengagement.

Encourage family and community support: Family support is critical to student engagement. Practitioners should encourage family and community support to increase retention and success in online learning.

Recommendations for Future Research

The role of motivation: Future research should examine how intrinsic and extrinsic motivation impacts student engagement and identify ways to enhance these motivators.

Addressing technological barriers: Future studies should explore solutions to improve access and usability in online learning environments.

Instructor engagement: Research could explore how personalized feedback and interactive instruction from instructors affect motivation and course completion.

Authors' Note: This study is derived from a master's thesis conducted by the second author under the supervision of the first author.

BIODATA and CONTACT ADDRESSES of AUTHORS

Yasemin KURTOGLU is currently enrolled in the Ph.D. program in the Department of Computer Education and Instructional Technology (CEIT) at Anadolu University. She completed her undergraduate studies in Computer Engineering at Hacettepe University. She earned her master's degree in CEIT from Anadolu University. She also worked in the corporate sector as a systems analyst and programmer. Her academic interests include online learning, artificial intelligence in education, and learning analytics.

Yasemin KURTOGLU
Department of Computer Education and Instructional Technology
Address: Anadolu University, 26470, Eskisehir, Turkiye.
Phone: +90 5324023269
E-mail: yasemin_kurtoglu@anadolu.edu.tr

Dr. Ozcan Ozgur DURSUN earned his Ph.D. in Communication Design in 2011. Since 2020, he has served as an associate professor at the Faculty of Education at Anadolu University. His academic interests include multimedia design, learning communities, social network usage, e-learning, artificial intelligence, and cyber behavior. Dr. Dursun has published 26 articles and 20 book chapters in national and international indexes. He has also served as a project leader and researcher in ten scientific research projects. Additionally, he has presented over 50 papers at international conferences.

Ozcan Ozgur DURSUN
Department of Computer Education and Instructional Technology
Address: Anadolu University, 26470, Eskisehir, Turkiye.
Phone: +90 5327980144
E-mail: oodursun@anadolu.edu.tr

REFERENCES

Avci, D. (2019). Effectiveness of the college adjustment program developed for college freshmen [Doctoral dissertation, Hacettepe University]. National Thesis Center.

Aydin, I. E., & Yazici, M. (2020). Drop-out in MOOCs. *Turkish Online Journal of Educational Technology-TOJET, 19*(3), 9–17. https://files.eric.ed.gov/fulltext/EJ1261605.pdf

Azhar, K. A., Iqbal, N., Shah, Z., & Ahmed, H. (2024). Understanding high dropout rates in MOOCs: A qualitative case study from Pakistan. *Innovations in Education and Teaching International, 61*(4), 764–78. https://doi.org/10.1080/14703297.2023.1234567

Bean, J. P., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research*, 55(4), 485–540. https://doi.org/10.3102/00346543055004485

Braxton, J. (2000). Reworking the student departure puzzle. Vanderbilt University Press.

Chen, C., Sonnert, G., Sadler, P. M., Sasselov, D. D., Fredericks, C., & Malan, D. J. (2020). Going over the cliff: MOOC dropout behavior at chapter transition. *Distance Education, 41*(1), 6-25. https://doi.org/10.1080/01587919.2020.1724772

Cohen, J. W. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Lawrence Erlbaum Associates.

Creswell, J. W. (2012). Educational research: Planning, conducting, and evaluating quantitative and qualitative research (4th ed.). Merrill.

Creswell, J. W. (2018). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). Sage.

Cropley, A. (2002). Qualitative research methods: An introduction for students of psychology and education. Zinatne, University of Latvia.

Goktas, M., Aslan, A., & Atici, B. (2020). An analysis on the course completion rate of the participants in massive open online courses. *Educational Technology Theory and Practice, 10*(2), 386–401.

https://dergipark.org.tr/tr/download/article-file/856546

Heckhausen, J. (2007). The motivation-volition divide and its resolution in action-phase models of developmental regulation. *Research in Human Development, 4*(3–4), 163–180.

https://doi.org/10.1080/15427600701662983

Ilgaz, H. (2014). The problems of distance education students on synchronized learning applications and suggestions for solutions. *Journal of Educational Sciences & Practices, 13*(26), 187–201.

https://www.idealonline.com.tr/IdealOnline/pdfViewer/index.xhtml?uId=9952&ioM=Paper&preview=true&isViewer=true#pagemode=bookmarks

Khan, I. U., Hameed, Z., Yu, Y., Islam, T., Sheikh, Z., & Khan, S. U. (2018). Predicting the acceptance of MOOCs in a developing country: Application of task-technology fit model, social motivation, and self-determination theory. *Telematics and Informatics, 35*(4), 964–978. https://doi.org/10.1016/j.tele.2017.09.009

Keller, J. M. (2016). Motivation, learning, and technology: Applying the ARCS-V motivation model. *Participatory Educational Research, 3*(2), 1-15. https://doi.org/10.17275/per.16.06.3.2

Keller, J. M., Ucar, H., & Kumtepe, A. T. (2020). Development and validation of a scale to measure volition for learning. *Open Praxis, 12*(2), 161–173. https://doi.org/10.5944/openpraxis.12.2.1020

Kember, D. (1989). A longitudinal-process model of dropout from distance education. *Journal of Higher Education, 60*(3), 278–301. https://doi.org/10.2307/1982251

Kutu, H., & Sozbilir, M. (2011). Adaptation of instructional materials motivation survey to Turkish: A validity and reliability study. *Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education, 5*(1), 292–312. http://www.ajindex.com/dosyalar/makale/acarindex-1423909573.pdf

Maya-Jariego, I., Holgado, D., Gonzalez-Tinoco, E., Castano-Munoz, J., & Punie, Y. (2020). Typology of motivation and learning intentions of users in MOOCs: The MOOCKNOWLEDGE study. *Educational Technology Research and Development, 68*(1), 203–224. https://doi.org/10.1007/s11423-019-09682-3

Moore, R. L., & Wang, C. (2021). Influence of learner motivational dispositions on MOOC completion. *Journal of Computing in Higher Education, 33*(1), 121–134. https://doi.org/10.1007/s12528-020-09258-8

Muljana, P. S., & Luo, T. (2019). Factors contributing to student retention in online learning and recommended strategies for improvement: A systematic literature review. *Journal of Information Technology Education: Research, 18*(1), 19–57. https://doi.org/10.28945/4182

Okur, M. R., Pasaoglu Bas, D., & Uca Gunes, E. P. (2019). Examination of dropout causes in open and distance learning. *Journal of Higher Education & Science, 9*(2), 225–235. https://dergipark.org.tr/en/download/article-file/1712181

Spady, W. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange, 1*(1), 64–85. https://link.springer.com/content/pdf/10.1007/BF02214313.pdf

Sumer, M. (2016). Investigation of learners' opinions registering virtual classes. *Usak University Journal of Social Sciences, 9*(3), 181–200. https://dergipark.org.tr/tr/pub/usaksosbil/issue/24734/261547#article_cite

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*(1), 89–125. https://doi.org/10.3102/00346543045001089

Ucar, H., Bozkurt, A., Ozturk, A., & Kumtepe, A. T. (2020). Investigation of distance learners' volitional competence. *Anadolu Journal of Educational Sciences International, 10*(1), 303–323. https://doi.org/10.18039/ajesi.682037

Vieira, K. M., Filho, R. B., Junior, E. D. S. C., & Santos, G. M. (2023). Determinants of distance education dropout: Evidence for Open University of Brazil/Federal University of Santa Maria courses. *Turkish Online Journal of Distance Education, 24*(1), 162–184. https://doi.org/10.17718/tojde.954673

Wang, Y. (2024). The role of teaching presence in students' behavioral engagement. *Distance Education, 1*-20 https://doi.org/10.1080/01587919.2024.2400256

Yilmaz, A. (2020). Why do open and distance education student's dropout or persist [Doctoral dissertation, Gazi University]. National Thesis Center.