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INVESTIGATION OF STUDENTS' SELF-REGULATION SKILLS, MOTIVATION AND DISORIENTATION IN SMART MOOC

Ramazan YILMAZ¹, Fatma Gizem KARAOGLAN YILMAZ^{2*}

¹ Faculty of Science, Department of Computer Technology & Information Systems, Bartın University, Bartın, Turkey

ORCID Code: 0000-0002-2041-1750

^{*2} Faculty of Science, Department of Computer Technology & Information Systems, Bartın University, Bartın, Turkey

ORCID Code: 0000-0003-4963-8083

Abstract

Students who have not developed self-directed skills in online learning environments may face problems such as not knowing what to do. Students in this situation need the advice and guidance of external support, such as the teacher. In MOOC environments, students are expected to make their own decisions, orient themselves, develop their own study strategy and make their own self-assessments. For this reason, students with low motivation who have not developed self-directed skills may fail to take courses at MOOCs. From this point of view, it is understood that there is a need for smart MOOC environments that determine the current situation and needs of the student with learning analytics, advise and guide the student through the recommendation system in line with these needs. According to this, students' self-regulation skills, motivations and disorientation in hypermedia were examined within the scope of the research. The research was conducted on 116 university students who took the statistical methods in education course in the smart MOOC environment. Research data were obtained through the Online Self-Regulation Questionnaire, MSLQ and Disorientation Scale. Research findings revealed that students using the smart MOOC environment had high self-regulation skills, MSLQ scores were moderate, and they were less likely to disorientation in hypermedia environments. When the relations between the scales are examined, it is revealed that there is a small negative correlation between disorientation scale – online self-regulation questionnaire, a moderate negative correlation between disorientation scale – MSLQ, and a strong positive correlation between online self-regulation questionnaire- MSLQ. Various suggestions were made in line with the research findings.

Keywords: Smart MOOCs; learning dashboard; learning analytics; recommendation system; self-regulation skill; disorientation in hypermedia; motivation

1. Introduction

Massive Open Online Courses (MOOCs) continue to become widespread in higher education processes. MOOCs are used not only in online programs but also for hybrid education purposes (de Moura et al., 2021; Zhang et al., 2021). On the other hand, research shows that the completion rate of MOOCs (about 5-15%) is relatively lower compared to traditional online learning (about 60-75%) (Kuo et al., 2021). Therefore, it is stated that the factors affecting the dropout rates of students in MOOCs

should be investigated (de Moura et al., 2021; Kuo et al., 2021). When the studies are examined, it has been revealed that various factors can be effective in the failure of students in MOOCs. MOOCs are environments that require students to have self-regulated learning skills (Tang, 2021). Students set goals in MOOCs environments, develop strategies to achieve these goals, and control and evaluate their own learning processes. If a student's self-regulation skills are low, the probability of failing in the MOOCs environment may increase (Karaoglan Yilmaz, 2022a, 2022b). For this reason, it may be appropriate to take precautions in MOOCs environments for students with low self-regulation skills.

On the other hand, studies suggest that one of the factors that can be effective in failing MOOCs is lack of motivation. Students mostly learn individually in MOOCs environments. In these environments, teacher support and peer interaction are low. If the student has problems in motivating herself/himself, her/his lack of motivation may increase as the lessons progress and she/he may need external support and guidance (Karaoglan Yilmaz & Yilmaz, 2022). Therefore, measures to eliminate students' motivational deficiencies will increase student motivation.

Another problem experienced by students in MOOCs is that they do not know what to do in the learning environment, cannot decide where to study, and need external support and guidance. These problems can lead to disorientation problems in students.

It is thought that personalized smart MOOCs environments, which know the student, know her/his learning needs and deficiencies, and offer advice and guidance to the student in line with these needs and deficiencies, can be effective in solving the problems that the students mentioned above experience in MOOCs. Smart MOOCs designs for this need are carried out, and their effectiveness is evaluated (Karaoglan-Yilmaz et al., 2021; Tepgec et al., 2021a, 2021b). Within the scope of this research, a Smart MOOC (Yilmaz et al., 2022; Sahin et al., 2021), which is supported by learning analytics, provides advice and guidance to the student based on learning analytics data, and has adaptive learning, dynamic assessment, adaptive mastery testing features. It was aimed to examine self-regulation skills, motivation, and disorientation states, and to discover the relationships between the variables in question.

2. Method

This research was carried out according to the correlational survey model. It aimed to determine the self-regulation skills, motivation and disorientation status of the students taking lessons in the smart MOOC system and to examine the relationships between these variables. The participants of the research are 116 university students who take the statistical methods in education course in the smart MOOC system. 61% of the students are male and 39% are female. Students took the course in the smart MOOC system during an academic term.

Three self-reported instruments were used as data collection tools in the study. Online self-regulation questionnaire, Disorientation scale, and Motivated Strategies for Learning Questionnaire (MSLQ). Kilis and Yildirim (2018) adapted the online self-regulation questionnaire into Turkish. The scale consists of 24 items and three sub-factors. The scale has a five-point Likert type scoring structure. Karadeniz and Kilic (2004) adapted the disorientation scale into Turkish. The scale consists of 7 items and one dimension. The scale has a five-point Likert type scoring structure. The lowest score obtained from the scale is 7 and the highest score is 35. The scale consists of 4 negative and 3 positive items. MSLQ was adapted into Turkish by Büyüköztürk et al. (2004). The scale consists of two subscales: motivation and learning strategies. The motivation subscale was used within the scope of the research. The motivation subscale has a seven-point Likert-type scoring structure.

Descriptive statistics and correlation analysis results were used to analyze the data obtained from the scales used in the research.

3. Findings, Discussion, and Conclusion

In order to the first purpose of the study, descriptive statistics related to the scores obtained by the students from the online self-regulation questionnaire, disorientation scale, and MSLQ were examined. Descriptive statistics are given in Table 1.

Table 1. Descriptive statistics

Scales	Number of items	The lowest score	The highest score	\bar{X}	sd	\bar{x}/k
<i>Online self-regulation questionnaire</i>	24	24.00	120.00	89.72	20.01	3.74
<i>Disorientation scale</i>	7	7.00	26.00	17.86	4.47	2.55
<i>MSLQ</i>	31	61.00	217.00	153.07	30.61	4.94

As shown in Table 1, the mean score of students on online self-regulation questionnaire is 89.72 (3.74 out of 5), and the mean score on disorientation scale is 17.86 (2.55 out of 5), and MSLQ is 153.07 (4.94 out of 7). According to these results, it can be said that students' online self-regulation scores were high and MSLQ scores were moderate. As for Karadeniz and Kılıç (2004), the high score obtain from scale means students' disorientation level is high. The student with a score lower than 21 points, which is the scale's midpoint, does not disorientate. In this study students' disorientation scale scores were low. Consequently, students do not disorientate in this Smart MOOC system.

In order to the second purpose of the study, the relationships between the scores obtained by the students from the online self-regulation questionnaire, disorientation scale, and MSLQ were examined. The Pearson correlation has investigated relationships between scales.

Table 2. Correlations between variables

		<i>Online self-regulation questionnaire</i>	<i>Disorientation scale</i>	<i>MSLQ</i>
<i>Online self-regulation questionnaire</i>	r	-		
<i>Disorientation scale</i>	r	-.230*	-	
<i>MSLQ</i>	r	.643**	-.421**	-

As given in Table 2, there is a small-negative correlation between disorientation scale – online self-regulation questionnaire ($r=-.230$, $p<.05$) and moderate-negative correlation between disorientation scale – MSLQ ($r=-.421$, $p<.01$) (Pallant, 2001). Also, there is a strong-positive correlation between online self-regulation questionnaire- MSLQ ($r=.643$, $p<.01$) (Pallant, 2001).

It can be said that the Smart MOOC system (Yilmaz et al., 2022) developed based on the research findings is effective in improving students' self-regulation skills, increasing their motivation, and reducing their disorientation. From this point of view, it is thought that smart MOOCs systems can give useful results in solving the problems experienced by students in MOOCs and online learning environments. Experimental studies to evaluate the effectiveness of the Smart MOOC system can be planned in future studies.

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