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Research Paper

The Relationship between Students' Self-Regulated Learning and Reading Comprehension in Iranian Online Classes in the COVID Era

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Abstract

In the wake of the COVID 19 pandemic, online instruction has become essential. It requires its teaching and research methods, and many social and psychological factors are at play here. One such factor is self-regulation, which is believed to affect learning. To clarify this issue, the present study used Cho and Cho's (2017) online self-regulation questionnaire with 30 items on a Likert scale and the reading comprehension section of the English Test as a Foreign Language (TOEFL) with 40 items. The instruments were adapted to Google Forms and sent to 297 students via a university LMS in 2021. 184 students returned the questionnaire, of which 12 had to be removed because the responses showed traces of inattention. The remaining 172 responses and their respective reading grades were analyzed via a one-sample t-test. The results confirmed that students' performance on the TOEFL test and self-regulation levels were satisfactory. A bivariate correlation, though, revealed no statistically significant relationship between these variables. There are several explanations for this result (e.g., online instruction was not voluntary for participants). Possibly, students were not motivated to learn. They may not have the necessary skills and tools for this type of instruction.

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However, simultaneous quantile regression showed that the high-achieving students in the present sample could apply their strategies of self-regulation in online English classes.

Keywords: COVID-19, Online Education, Self-Regulated Learning, Reading Comprehension, TOEFL, Reliability, Construct Validity

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1. Introduction

Self-regulated learning seems to be an essential factor in academic achievement (Barta et al., 2021; Cengiz & Sakiz, 2022; Davis & Hadwin, 2021; Li et al., 2020). According to Boekaerts et al. (2000), goal setting, goal control, and outcome evaluation are all indicators of self-regulation involved in learning. Online classes may pose self-regulation challenges for students. The teacher cannot immediately support students and facilitate learning in online education. Online training requires independence in learning (Azevedo, et al. 2007). Therefore, self-regulatory skills in online education are of particular importance.

According to Zohar (1999), teachers may inadvertently or unknowingly minimize the importance of self-regulation in the achievement of young students and not pay attention to it in designing educational materials. Self-regulated learning in various majors of study seems indispensable. Efklides (2012) considers self-regulated learning a dynamic and context-based phenomenon and believes that people judiciously design their goals and try to achieve them by appropriate strategies. Self-regulated learning is associated with academic adjustment, mental and physical health, and is one of the most essential learning skills today (Clark, 2013; Suveg et al., 2015). There are self-regulated learning processes in education because students are constantly

faced with changing challenges and expectations at school. In addition, self-regulated learning processes are flexible and can be modified through educational treatments. According to Cleary (2015) and Zimmerman and Schunk (2011), treatments can improve self-regulated learning.

Muis and Singh (2018) define self-regulated learning as "an event that unfolds during learning that is goal-directed and includes cognitive, metacognitive, motivational, affective, and social components" (p. 349). According to Hofer and Pintrich (1997) and Winne and Hadwin (1998), experts have found that student characteristics influence self-regulated learning.

Schunk (2008) holds that education researchers face various challenges in understanding and researching self-regulated learning and research. For example, researchers want to know how the self-regulated learning process takes shape in mind and why it depends on educational settings (Järvenoja et al., 2015). Another challenge is that self-regulation is the learning of an integrated, multi-component theory (Butler, 2015). Winne (2018) believes self-regulation is an iterative and adaptive learning process. Therefore, researchers need special research methods to be able to study these dynamic processes.

2. Literature Review

According to Zimmerman and Schunk (2011), self-regulation means managing one's own beliefs and behaviors. For example, students may think a lot about how they study and what techniques they use to achieve academic success. The self-regulated learner uses metacognitive, motivational, and behavioral strategies to accomplish his or her learning objectives (Zimmerman, 2008). Goal setting, metacognitive care, seeking help, and self-assessment are examples of these operations. Such students actively participate in these processes and adopt self-regulated learning strategies

(Perry & Rahim, 2011). These strategies include private tutoring, storytelling, and emailing the teacher.

Theories of self-regulated learning were introduced in the 1980s to describe and model successful learning behavior (e.g., Bandura 1986). In the words of Zimmerman (2000), self-regulation describes creating thoughts, feelings, and actions cyclically adapted to achieve goals (p. 14). Many theorists believe that these thoughts, feelings, and behaviors are cognitive, emotional, motivational, and behavioral (Zeidner et al., 2000). Nevertheless, theorists have different views on these factors, and as a result, they recommend specific strategies and techniques for academic success.

Bandura (1986) maintains that self-regulatory actions result from self-esteem, self-assessment, and self-response processes. Self-awareness provides the information needed to change direction. When they want to do something new, students have to pay attention to their behavior and thoughts. A person's self-awareness is affected by factors such as their emotional state, their memory recall, and their opinions. Previous coursework and knowledge are also partly related to personal development.

Zimmerman (1989) suggests that a person's ability to regulate themselves is dependent on their self-esteem, self-assessment, and their reaction to their accomplishments. Among these, self-esteem is the most critical factor. From Zimmermann's theory, it is inferred that learning is not a static feature but is influenced by successful academic outcomes. Puzziferro (2008) believes that cognitive strategies such as curriculum review help learners increase their knowledge and awareness. The learning process is regulated by metacognitive strategies (planning, monitoring and regulation). Zimmerman (1989) states that learning strategies are part of the self-regulated learning process. Self-regulated learning strategies predict academic performance in face-to-face learning (Wang, et. al., 2013 and Zimmerman, 1989).

In their study, Wang et al. (2013) found that success in online courses relies heavily on students' ability to actively participate and learn independently. Students in online courses are expected to be more independent than in regular classrooms because online education requires responsibility for student learning. To put it another way, online students should try harder to manage their educational affairs compared to fellows in face-to-face education (Ally, 2004; Serdyukov & Hill, 2013). Zimmerman (2008) calls this ability self-regulated learning.

The self-regulatory process of learning involves the control and accuracy of understanding, behavior, and motivation (Azevedo et al., 2012). This theory is based on four principles. First, learning is the result of active participation in learning and is influenced by individual goals and strategies. Second, it requires students' self-regulation of learning to change their behavior to achieve the goal. Third, as Duffy and Azevedo (2015) point out behavior change results from self-regulated learning processes related to cognition and motivation. Fourth, self-regulatory behavior enhances the relationship between personal characteristics, performance, and environmental factors.

According to Greene and Azevedo (2009), online learning needs self-regulation skills in order to be successful, since searching for information and learning in an environment where content is presented differently requires control over browsing content. Students who do not adjust their learning get lost in such an educational environment and the variety of presentation methods does not play a constructive role for them. Other researchers, such as Cho et al. (2010) and Sun and Rueda (2011), have found that it is difficult for students to adjust their learning to online education because, in this learning environment, individual students are deprived of support.

Several theories justify and explain the self-regulation of learning in online education. Information processing theory (Winne, 2018) and social cognition theory (Schunk & Usher, 2012; Usher & Schunk, 2018) are used more than other theories. Information processing theory considers the regulation of learning in four stages: Understanding the task at hand, setting the goal, planning to reach it, applying strategies, and adjusting your metacognition. Self-regulation is also considered an interactive process in social cognitive theory. In the first stage, task learning (forethought), the task is analyzed and the learning goal is determined. This theory emphasizes the role of motivation in setting educational goals. Motivation influences cognitive and metacognitive processes. These processes take place in the second stage of learning self-regulation (performance).

According to Azevedo et al. (2010), technological changes have led to the development of tools that make learning adaptive and self-regulatory. There is a claim that background learning can be regulated (Azevedo & Alevan, 2013; Hadwin et al., 2018; Winne, 2018). It has its roots in educational psychology and has recently been included as a teaching guide in educational research technology.

The nuances of self-regulated learning vary from culture to culture, but the basic elements of global self-regulated learning are the same. Accordingly, self-regulation is a key component of active participation in school and academic success across cultures (Tang & Neber, 2008). Zhou et al. (2008) believe that specific self-regulatory strategies are associated with deep learning. The use of self-regulatory strategies is related to academic self-efficacy and self-concept (Ommundsen et al., 2005). Huang and Prochner (2003) believe that intimacy between family members and teaching styles, such as comparative, authoritarian, and Western teaching influences the use of self-regulated learning among Asians. In some cultures,

the influence of family is associated with "fear of failure" or "credibility" and is a positive factor for active participation in learning (King & Ganotice, 2015).

Wanderer and Imbraile (2017) argue that given the positive association between self-regulatory learning and student performance, and the fact that learners do not learn self-regulation tactics in online classes, teachers are expected to use tools to help students sustain self-regulatory learning strategies. Based on empirical research, Wendler and Imbraile say that implementing various strategies in online classes can enhance students' self-regulatory learning strategies. Organizing online education to strengthen self-regulated learning is also vital in motivating successful students.

There have been some studies on self-regulated learning in online education (e.g., Chen and Huang, 2013; Chiu et al., 2013 and Dunn, et al., 2014). The studies found that self-regulation is important for both face-to-face and online learning.

Azevedo, et. al (2018) assert several methods for accurately estimating self-regulation learning, for example, observing students' conduct in the classroom, recording their performance while doing the tasks, and teacher or parent reports. Biswas, et al. (2018) and Cleary and Callan (2018) recommend that you extract data from data collection databases. Cleary and Callan cite other techniques, like interviews, personal memoirs, and the think-aloud procedure. Although these methods are effective, the questionnaire remains the most common method for measuring self-regulation.

One of the most widely used research tools for self-regulated learning is the Motivated Learning Strategy questionnaire developed by Pintrich et al. (1993). Among others, Hodges and Kim (2010), Klingsieck et al. (2012) and Cho and Shen (2013) used this questionnaire in their research. Cho and Cho

(2017) argued that questionnaires designed for face-to-face classes might not be appropriate for online classes because they may not be able to assess specific learning in the first place. Secondly, previous questionnaires developed for face-to-face classes have not been validated for online students. They designed and standardized a new online self-regulation questionnaire tool by studying the relevant literature. We employed this questionnaire, and relevant information can be found in the study instruments section.

Following the argument that online education differs from face-to-face education, examining the association between self-regulation and reading comprehension in online classes is legitimate. In order to accomplish this goal, the following questions are addressed.

1. Are the students' reading comprehension skills in the English language course satisfactory?
2. What are students' perceptions of self-regulated learning?
3. Do self-regulation and reading comprehension in English online classes show a statistically significant relationship?

3. Methodology

The participants, instruments, and procedure of the study are described in this section of the research report.

3.1 Participants

The participants were 297 students between the ages of 19 and 23 taking a general language course at a university in Tehran. The questionnaires and the reading section of TOEFL were sent to their virtual education page. One hundred eighty-six students answered the questionnaire. Twelve distorted questionnaires were discarded and the remaining 174 were analyzed.

3.2 Instruments

In order to address the research questions, two instruments were used: the online self-regulation questionnaire containing 30 items and the reading section of TOEFL comprising 40 items. The instruments are detailed here.

3.2.1 The questionnaire

The questionnaire was prepared by Cho and Cho (2017). This questionnaire has three constructs and 30 items. Among the constructs are self-regulation of interactions between the student and the content of the course (items 1 to 11), self-regulation of interactions between the student and the teacher (items 12 to 20) and self-regulation of interactions between students (items 21 to 30). A Likert scale of 7 points is used for this questionnaire. The scales are:

- * Never true of me=1
- * Mostly not true of me= 2
- * Tend not to be true of me =3
- * Neutral= 4
- * Tend to be true of me= 5
- * Mostly true of me=6
- * Always true of me= 7

The questionnaire was validated by the authors using 799 undergraduates from two Midwestern universities taking online courses in physics, politics, psychology, history, economics and mathematics. The reliability (Cronbach's alpha) of all three constructs of this questionnaire was above 0.9. This questionnaire was not published in Iranian scientific research journals in either its original form or in a translation. Therefore, it had to be translated by the researcher. One of the distinguished professors back-translated the questionnaire.

The reliability of the self-regulated learning questionnaire was 0.93 (Table 1). This reliability level is very high and shows the stability of the results of the questionnaire.

Table 1

Reliability Statistics for Online Self-Regulation Questionnaire

Cronbach's Alpha Standardized Items	Cronbach's Alpha Based on	N of items
.93	.93	30

A Bayesian confirmatory factor analysis was performed on the ordinal data in AMOS. The convergence statistic (CS) turned out to be 1.001, which was below the cut-point of 1.002, indicating the construct validity of the instrument.

3.2.2 Reading Comprehension test

Students' reading comprehension was measured using the TOEFL's reading section. This test comprises the following micro-skills.

- Remember word meanings
- Understand the meaning of words from the text
- Understand textual and external sources
- Inference from text
- Locate synonyms
- Search and retrieve specific information
- Understand references and grammatical relationships
- Skimming and scanning
- Recognize the author's style and tone

The reliability of this test is reported in this section. Table 2 shows that the reliability of the test was 0.86, indicating that it is consistent and trustworthy.

Table 2

Reliability Statistics for TOEFL

Cronbach's Alpha Standardized Items	Cronbach's Alpha Based on	N of items
.86	.87	40

The data were analyzed through structural equation modelling to evaluate the construct validity of TOEFL in the present sample. The summary of the results is displayed in Table 3.

Table 3
Model fit Statistics for TOEFL

Model	RMSEA	L 90	H 90	PCLOSE
Default model	.04	.03	.05	.80
Independence model	.07	.07	.06	.00

As shown in Table 3, the RMSEA is .04 and pclose is .8. Statistically speaking, an RMSEA below .05 is a good sign of model fit. Also, along the same lines, a pclose higher than .05 help the researcher to hold that an RMSEA has not been reached by chance. All this said the construct validity of the test is satisfactory.

3.3 Procedure

The reading section of the TOEFL was administered in the university's virtual education system as the final exam for 297 students enrolled in the general English course. The research questionnaire was designed using the Google form and was sent through the university's virtual education system to the afore-mentioned students in the first semester of the academic year of 2021. Students were asked to agree or disagree with options (1-7). One hundred and eighty-six students completed the questionnaire. There were twelve distorted responses. For instance, they answered every question with the middle (neutral) option, or they had chosen one option in every situation. Their responses were therefore excluded from the analysis. The remaining 174 responses and the reading comprehension scores of the same individuals were put into analysis.

4. Results and Discussion

At this point, the research questions are discussed. This is the first research question.

Are students' reading comprehension skills satisfactory?

As was already stated, there were 40 items on the reading comprehension test in this study, and each item received a score of 1. Table 4 shows that the lowest score was 15, the highest score was 40 and the group average was 32.2 indicating almost 80 percent of the total score. This seems to be a reasonable average given that engineering students in Iranian universities find English to be a simple subject.

Table 4

Descriptive Statistics for TOEFL

N	Min	Max	Mean	Std. Deviation
174	15	40	32.2	5.24

The results help the researcher claim that the learners' reading comprehension skills in this course are satisfactory. This claim can be substantiated through a one-sample t-test. In this statistical test, the cut point is 28, or 70% of the overall test score. The t value, as displayed in Table 5, turns out to be statistically significant ($t(173) = 10.56, P = .00$). Consequently, the null hypothesis was abandoned in favor of alternative hypotheses, and the statement that students' reading ability is satisfactory could be valid.

Table 5

One-Sample Test for TOEFL

T	df	Sig.	Test value= 28		95% Confidence interval of the Difference	
			mean difference		Lower	Upper
10.56	173	.00	4.2		3.41	4.98

The second research question is the following.

What are students' perceptions of self-regulated learning?

As stated earlier, this questionnaire had 30 items and its scale was 7 points. As can be understood from Table 6, the minimum score is 100, the maximum is 205, and the average for the group is 157.45. The average score

represented 75% of the total score. Therefore, students in this sample evaluated their self-regulation ability as acceptable.

Table 6

Descriptive Statistics for Online Self-regulation Learning Questionnaire

N	Min	Max	Mean	Std. Deviation
174	100	205	157.45	22.64

Based on the one-sample t-test results provided in Table 7, it can be determined whether students are demonstrating adequate self-regulation. This one-sample t-test has a cutoff value of 147, approximately 75% of the total score of the questionnaire. According to this table, the t-value was statistically significant: ($t(173) = 10.45, P = 0.00$). Consequently, it is safe to dismiss the null hypothesis and welcome the alternative hypothesis and assume that the students' self-regulation meets expectations.

Table 7

One-Sample Test for Online Self-Regulation Learning Questionnaire

Test value= 147					
T	df	Sig. (2-tailed)	mean difference	95% Confidence interval of the Difference	
				Lower	Upper
6.09	173	.00	10.45	7.06	13.84

This is the third research question:

Do self-regulation and reading comprehension in English online classes show a statistically significant relationship?

The goal of this study was to investigate the relationship between self-regulated learning and reading comprehension of online English students. It was a descriptive study and the results were analyzed using the correlation coefficient technique.

Readers can find evidence of the reliability and construct validity of the instruments in Tables 1 and 2. After establishing the reliability and construct validity of the instruments, the author needs to report their relationship. Table

The Relationship between ...

8 demonstrates that the correlation was .06 ($R = 0.06$, $P = 0.36$). Statistically, the variables of the study had no significant correlation.

Table 8

Correlation between TOEFL and self-regulated learning in online classes

		Self-regulation	TOEFL
Self-regulation	Pearson Correlation	1	.06
	Sig. (2-tailed)		.36
N		174	174

Although educators claim academic achievement is associated with a higher possibility of employing strategies of self-regulation, the relationship appears to be uncertain (Elfakki et al., 2021; Kaplan et al., 2019). In contrast to findings from foreign studies, no substantial relationship was observed between self-regulated learning and English achievement in online classes. To the best knowledge of the writer, there are no research reports on this topic in online classes in Iran. This piece of finding contradicts the educational theories presented in the literature section. To further explore the findings, correlations were made between the questionnaire components and reading comprehension skills. The results are presented in Table 9.

Table 9

Correlations among Components of Self-Regulation and TOEFL in Online Classes

		TOEFL	content	student	teacher
TOEFL	Pearson Correlation	1	-.01	.03	.15
	Sig. (2-tailed)		.89	.66	.04
N		174	174	174	174

Looking at Table 9, one finds no significant relationship between regulation in the interaction between the content of the course and comprehension skills ($R = -0.01$, $P = 0.89$). In light of this finding, it is evident that the students did not succeed in learning the textbook and course materials, probably because the lessons were not presented in a manner that

was compatible with online learning. There was no statistically substantial association between the interaction of students with each other and reading comprehension ($R = 0.03$, $P = 0.66$). In the online education system, there is a possibility of interaction between students. It is possible to communicate orally and in writing throughout the class. Of course, because this interaction is in the presence of the professor and other students, it may not be welcomed by students or, perhaps because of the weakness of the Internet coverage, students have abandoned this type of interaction.

Table 9 provides convincing evidence about the statistically significant relationship between student-teacher interaction and comprehension skills ($R = 0.15$, $P = 0.04$). If we convert this index into a correlation coefficient, that is, if we square 0.15, we get a value of 0.02. This finding means that interaction between students and the teacher can increase reading comprehension skills by 2%. Apart from its statistical significance, this value of the correlation coefficient does not seem encouraging to educational professionals. Therefore, the distribution of reading comprehension scores should be carefully taken into consideration.

Due to strong competition in the national entrance examination in recent decades, most students take language courses, develop good English skills, and get good grades before entering university. Therefore, the group average of 75 per cent of the overall test appears to be normal. In addition, since the correlation coefficient analysis is based on the group's mean score, in cases where the mean score of the students is high, the correlation analysis does not provide legitimately valid results. In order to test the hypothesis of how self-regulated learning relates to students with different reading performance, the researcher used quantile regression. In this statistical method, self-regulated learning was the predictor variable and reading comprehension was the

The Relationship between ...

dependent variable. Depending on their reading test scores, students were divided into deciles. Table 10 provides the quantile regression results.

Table 10

Simultaneous Quantile Regression on TOEFL and Self-Regulation

TOEFL	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
q10: self	.0192308	.0383443	0.50	0.617	-.0564552 .0949168
q20: self	-6.47e-17	.0272406	-0.00	1.000	-.0537689 .0537689
q30: self	0	.020748	0.00	1.000	-.0409536 .0409536
q40: self	0	.0342385	0.00	1.000	-.0675818 .0675818
q50: self	-1.99e-16	.0285297	-0.00	1.000	-.0563134 .0563134
q60: self	.0163934	.0139088	1.18	0.240	-.0110605 .0438474
q70: self	.0153846	.0111802	1.38	0.171	-.0066834 .0374526
q80: self	.0222222	.0118211	1.88	0.062	-.0011108 .0455553
q90: self	.0350877	.009757	3.60	0.000	.0158289 .0543466

As displayed in Table 10, the t- value is statistically significant only in the ninth (highest) decile. As demonstrated by this finding ($t = 3.6$, $P = 0.00$), the researcher assumes that self-regulation of learning and reading comprehension of high-achieving students are significantly correlated.

From Table 10, it is also apparent that for every increase in self-regulated learning score in the ninth decile, reading comprehension scores increase by three percent. These results suggest that self-regulation in online classes applies, at least, to high-achieving students. These students were more adaptable to online instruction than other students.

Conversely, if the researcher focuses on class norms and limits themselves to the mean scores, the answer to question III of the study is negative. Essentially, this means that self-regulation of learning is not a significant predictor of reading comprehension.

The nonsignificant relationship between self-regulated learning and English reading comprehension in the online class can be attributed to several factors. Online education in this study was not voluntary. It was mandatory, and students probably did not have the motivation and skills for online classes. Maybe these are the reasons for students' worries and anxieties. This

fear and anxiety may cause dissatisfaction with their education or even underestimation of their own abilities. In addition, the professors and instructors were unprepared for online teaching and did not know how to plan for the new teaching method. Due to their unfamiliarity with online educational media, most of them used their previous educational methods without considering the theoretical and practical requirements of online education. Unfortunately, the country's education system, due to the burden imposed by the sudden onset and spread of the coronavirus, was unable to provide the necessary support and facilities for professors, teachers, students and pupils. For example, the education system should have provided a few examples of appropriate online education curricula for each lesson. In this case, teachers and professors could provide better instruction by emulating these examples. This failure has caused much dissatisfaction for students. Inadequate infrastructure (Internet glitches, expensive Internet services, insufficient equipment such as computers, laptops, tablets, lack of facilities at home) may sometimes create challenges for professors, students and their families, etc. In addition, education design flaws can also cause students and professors frustration. These factors can seriously damage the educational process and lead to dissatisfaction of students within the educational system. Song, et al. (2004) argued that the design of online courses plays a critical role in student success. Efforts should be made to design online learning to consider interactions between students and curriculum, interactions between instructors and students, and student-student interactions (opportunities for students to discuss and exchange learning experiences). Kreijns et al. (2013) emphasize the social aspect of learning and say that online learning is effective only when student groups lead to an atmosphere of mutual trust, a sense of social belonging and interpersonal relationships. Unfortunately, this issue has been ignored in online education in Iran. The designers of online education must consider the advice of education experts in planning to

102 Teaching English Language

The Relationship between ...

deliver instruction in online classes. According to Poll and Weller (2014), six techniques can be used to deliver this type of instruction:

1. Create a student group
2. Ask the instructor or institution to explain the purpose of the class.
3. Make use of interactive tools in the education system.
4. Encourage students and teachers to exchange ideas.
5. Ensure that students receive appropriate and timely feedback.
6. Establish a student-centered environment.

Arabzadeh, et. al (2012) demonstrated that teaching self-regulated learning strategies improves learning. Virtual learning platforms have audio and video communication tools and community. The use of these tools can enhance students' education and interaction, thereby increasing their ability to self-regulate. There is a fundamental question to ask: what level of familiarity do instructors and students have with these tools? Is the class size adequate? For example, Iranian Ministry of Higher Education (2011) suggests that managers should admit 15, or maximum 20, students in online courses. As stated in the introductory part of this paper, after the outbreak of Covid 19 e-learning is mandatory. Thus, it is not surprising that students and teachers lack motivation to adapt to these methods. Additionally, planners, instructors, and students have to undergo extensive planning and training to shift from face-to-face to online learning. The country's education system must provide programs where students, teachers and professors can learn self-regulation.

5. Conclusion

In this study, the authors assessed students' reading skills in an online general English course, their level of self-regulation, and the association between these two variables. The study revealed satisfactory levels of academic accomplishment and self-regulation. For high-achieving students, language learning and self-regulation were statistically significant, but for ordinary and

weak students, there was no such correlation. This result can be attributed to students' dissatisfaction with the quality of instruction. Therefore, a study of educational satisfaction in online courses is warranted.

A questionnaire was used to gauge self-regulation. Readers readily agree that questionnaires are based on self-report, which is prone to measurement error. It is possible for students to overestimate or underestimate their self-regulation skills, for example. Readers may agree that student self-regulation and academic performance can suffer as a result of the demands and the size of an online course. Since the study was descriptive, it could not justify the poor relationship between self-regulation and academic success. It is suggested that some causal-comparative study be done to see why, in this specific context, the relationship between the two variables was not significant.

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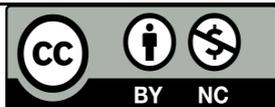
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