

# Students' Academic Self-Efficacy, Engagement, Satisfaction, and Perceived Academic Performance in Online Learning

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## Abstract

The COVID pandemic has compelled schools all over the world to go into online learning. The abrupt shift to online learning has affected students in a lot of ways, psychologically and academically, and differently based on demographic backgrounds. This study aimed to determine gender and year level differences in students' academic self-efficacy, engagement, satisfaction, and perceived academic performance in online learning as well as the relationships among these variables. It included 292 college students enrolled in full online classes for at least two terms who responded to standardized scales through an online platform. Data were analyzed using descriptive statistics, t-test, ANOVA, Pearson correlation, and regression analysis. Results indicated gender differences, with male students reporting greater academic self-efficacy, engagement, and course satisfaction while female students posting higher level of perceived academic performance in online learning. No significant differences were observed based on year level. Significant relationships were found between students' academic self-efficacy, engagement and satisfaction, and their perceived academic performance. However, only student engagement and course satisfaction significantly predicted perceived academic performance, explaining 42.36% of the variance in the dependent variable. It is recommended to implement various kinds of tasks to help students improve their confidence in their capabilities, encourage them to be more engaged and participative, develop in them positive attitudes, and improve their learning outcomes in online classes.

**Key Words:** online learning; academic self-efficacy; student engagement; course satisfaction; perceived academic performance

## 1. INTRODUCTION

The COVID pandemic has compelled schools all over the world to go into online learning. The abrupt shift to online learning has affected students in a lot of ways, psychologically and academically. This has affected students' well-being and learning processes and outcomes, particularly their mental and physical health (Barrot, et al., 2021; Cao, et al., 2020; Selvaraj, et al., 2021), self-confidence (Talsma, et al., 2021), motivation (Tan, 2020; Zaccoletti, et al., 2020), engagement (Wu & Teets, 2021), and academic performance (Tan, 2020).

The effects of online learning on students also differed based on their demographic backgrounds. However, research results are inconsistent and mostly based on foreign studies. There is dearth of studies on college students in the Philippine setting.

There are four variables that are worth exploring with regards to online learning: academic

self-efficacy, engagement, satisfaction, and learning outcomes. Students' academic self-efficacy (ASE) has been found to be greatly affected by the change in the learning set-up. Self-efficacy is an individual's belief in his capacity to execute behaviors necessary to produce specific outcomes (Bandura, 1997). Academic self-efficacy is defined as one's belief to achieve the desired level of performance in academic tasks (Sharma & Nasa, 2014). It is one of the most important predictors of academic achievement (Alqurashi, 2018; Alyami et al., 2017; Dogan, 2017; Hayat, et al., 2020; Honicke & Broadbent, 2016; Nasir & Iqbal, 2019; Talsma, et al., 2018). Students who believe that they are capable of adequately completing a task and have more confidence in their ability to do so usually display high level of academic achievement. The same results were also observed in an online learning set-up (Joo, et al., 2013), indicating that academic self-efficacy is an important psychological factor in online learning environment.

However, ASE may not be enough for students to perform well in their online courses. There are other factors that affect students' academic achievement (Doménech-Betoret, et al., 2017), such as student engagement (Delfino, 2019; Dogan, 2017; Estevez, et al., 2021; Lee, 2014; Lei, et al., 2018; Rajabalee, et al., 2019) and course satisfaction (Alqurashi, 2018; Dhaqane & Afrah, 2016; Ridzuan, et al., 2018). Student engagement (SE) refers to the effort students make to stay engaged in the process of learning to gain knowledge and build their critical thinking (Dixon, 2015). Student satisfaction (SOL), on the other hand, is the short-term attitude resulting from an evaluation of students' educational experience, service, and facilities (Weerasinghe, et al., 2017). It has been reported that the more students are engaged in and satisfied with online learning, the better is their learning outcomes.

Research on group differences in academic self-efficacy, student engagement, satisfaction, and academic performance in online learning are relatively scarce and reported inconsistent results. For example, there were studies showing female students having higher levels of engagement (Bru, et al., 2021; Morante, et al., 2017), studies demonstrating males being more engaged (Harvey et al., 2017; Idriji, et al., 2020), and studies reporting no significant differences (e.g., Harper, et al., 2004). Similarly, there were studies showing female students being more satisfied than males in online set-up (e.g., Gonzales-Gomez, et al., 2017) and studies that found no significant differences (e.g., Harvey, et al., 2017; Mohamad, et al., 2020).

While studies abound regarding online learning, not many studies were done involving Filipino college students. There is also a need to explore gender and year level differences in students' academic self-efficacy, engagement, and satisfaction in online learning as well as the relationships of these variables with academic performance in the Philippine setting. This study is significant as this will provide bases for the design and implementation of instructional programs to help improve academic performance in online learning.

## Objectives of the Study

The study aimed to answer the following questions:

1. Do students' academic self-efficacy, engagement, course satisfaction, and academic performance in online learning differ by gender and year level?

2. Are there significant relationships between students' academic efficacy, engagement, and satisfaction in online learning and their perceived academic performance?

## 2. METHODOLOGY

The study involved 292 college students enrolled in full online classes for at least two terms who responded to the online survey. Sixty percent of the participants were female and more than half were sophomores, 20% were freshmen, and around 27% were graduating students. The study made use of the following instruments: Online Learning Self-Efficacy Scale (OLSES: Zimmerman & Kulikowich, 2016), Online Student Engagement Scale (OSE: Dixon, 2015), Students' Satisfaction Questionnaire (SSQ: Elshami, et al., 2021), and Perceived Academic Performance Scale (PAP: Verner-Filion & Vallerand, 2016). The OLSES measures students' confidence in their ability to perform online tasks across three areas: learning in online environment, time management, and technology. The OSE Scale has 19 items distributed in four factors: skills, emotion, participation, and performance in online learning. The SSQ measures satisfaction with instructor, technology, course setup, interaction, and outcomes. The PAP Scale measures students' perceptions of their performance in online class in terms of meeting official requirements, assigned duties and expected tasks, and performing beyond demand. All scales have acceptable validity and reliability. They were administered to students through Google form. Informed consent was taken, emphasizing strict confidentiality and anonymity. Data were analyzed using descriptive statistics (mean, SD), t-test, ANOVA, Pearson correlation, and regression analysis.

## 3. RESULTS AND DISCUSSION

### Significant Differences in Students' ASE, SE, SOL, and APA by Gender & Year Level

To determine gender differences in the different variables, a series of t-test was performed. Male and female students were found to significantly differ in all variables, with males posting higher levels of ASE, SE, and SOL. Female students, on the other hand, have better perception of their academic performance in online learning.

The result that male students having higher level of academic self-efficacy is consistent with past research (Burger, et al., 2010; Fallan & Opstad, 2016; Liu, et al., 2020), indicating that male students tend to show more confidence in online

tasks. This is maybe because male students have higher perceived ability and confidence in their abilities, comfort, and engagement with computers (Ashong & Commander, 2012). This is, however, a big contrast to metaanalysis reviews which reported higher competence beliefs in learning in digital setting among female students (Perkowski, 2013) and to other studies that showed no significant differences (Korlat, et al.,2021; Ozkara & Ibili, 2021; Yavuzalp & Bahcivan, 2020).

This study also reported higher level of engagement among male students than the female students, indicating that male students spend more time studying and staying up on reading and assignments, put more effort to make lessons more relevant and interesting, participate more in online forum, and do well in tests and get good grades. This is consistent with the study involving 39 countries which showed gender inequality of usage access to ICT in favor of male students as they reported using computers and internet for educational purposes more often than girls (Drabowickz, 2014). There were other research that showed males being more engaged in online learning than female students (e.g., Harvey et al., 2017; Idrizi, et al., 2020).

This study also reported significant gender differences in level of satisfaction with online learning, with male students being more satisfied with their online instructors, technology, set-up, interactions, and outcomes. This finding supported the metaanalysis by Cai, et al. (2017) that indicated that males hold more favorable attitudes toward technology use than females and studies by Lu and Chiou (2010) and Nistor (2013) that showed males having more positive perception of e-learning than female students. One studying involving Filipino college students, however, found no statistically significant difference in the level of course satisfaction based gender, age, year level, and course (Baloran, et al., 2021).

Lastly, female students perceived better academic performance in online learning. This finding is consistent with those found by Selwyn (2007) who reported that female students have higher level of perceived academic performance in online learning set-up classes.

Table 1: Significant Differences by Gender

Var	Male		Female		t
	M	SD	M	SD	
ASE	80.09	17.12	78.16	14.94	6.49***
SE	71.16	14.22	67.87	14.70	1.79*
SOL	82.45	19.69	77.60	16.49	2.28**
PAP	19.80	4.12	20.00	4.06	-0.17*

\*p<.01; \*\*p<.01; \*\*\* p<.001

Test of significant differences was also conducted based on year level, that is, among freshmen, sophomores, and graduating students. ANOVA results in Table 2 indicate that there are no significant year level differences in all variables. This indicates that despite differences in the length of exposure to online learning, the levels of ASE, SE and SOL among these groups were comparable. This is also true for their perceived academic performance. This maybe because these students, despite differences in year levels have the same amount of exposure to and experience with full online learning set-up. These students have been on online learning since the start of pandemic - the younger students during their high school and the sophomore and graduating students during their first two years in college.

Table 2. Significant Differences by Year Level

<i>Academic Self-Efficacy (ASE):</i>				
<i>Source of Var.</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>
Between Groups	429.49	2	214.75	0.91
Within Groups	68493.04	289	237.00	
Total	68922.53	291		
<i>Student Engagement (SE):</i>				
<i>Source of Var.</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>
Between Groups	472.71	2	236.36	1.17
Within Groups	58499.73	289	202.42	
Total	58972.44	291		
<i>Satisfaction with Online Learning (SOL):</i>				
<i>Source of Var.</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>
Between Groups	953.37	2	476.68	1.43
Within Groups	96081.22	289	332.46	
Total	97034.59	291		
<i>Perceived Academic Performance (PAP):</i>				
<i>Source of Var.</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>
Between Groups	54.50	2	27.25	1.67
Within Groups	4782.16	289	16.55	
Total	4836.67	291		

## Relationships of ASE, SE, and SOL with Perceived Academic Performance

Results in Table 3 show significant and positive relationships among the different variables. In particular, academic self-efficacy is positively and significantly correlated with perceived academic performance in online learning,  $r(290)=.534$ ,  $p<.001$ , which indicates that students with a high level of academic self-efficacy have better academic performance. Student engagement and course satisfaction also showed significant and positive relationships with perceived academic performance:  $r(290)=.619$ ,  $p<.001$ ; and  $r(290)=.603$ ,  $p<.001$ , respectively. This indicates that the more a student is engaged in and satisfied with the online learning, the better is his/her academic performance.

These findings supported the numerous studies which showed that students who have high confidence in their learning in online environment, in managing their time, and in using technology perform academically well in the online set-up. These results are consistent with past studies showing students with a high level of academic self-efficacy are more likely to be successful in online courses (e.g., Zimmerman & Kulikowich, 2016). This is also true for the relationship between student engagement and academic performance, confirming previous studies that showed greater student engagement in academic tasks in online learning results to a better performance (e.g., Morante, et al., 2017), as well as for satisfaction with online learning versus academic performance, supporting previous research that showed students' satisfaction is a critical indicator in positive learning outcomes (Ke & Kwak, 2013).

Table 3. Correlations Among Variables

Variables	ASE	SE	SOL
ASE			
SE	0.714***		
SOL	0.739***	0.778***	
PAP	0.534***	0.619***	0.603***

\*\*\* p<.001

However, regression analysis results show that only student engagement and course satisfaction significantly predicted perceived academic performance, explaining 42.36% of the variance ( $R^2=.42$ ,  $F(3, 257) = 62.95$ ,  $p<.001$ ). Student engagement predicted perceived academic performance ( $\beta=0.10$ ,  $p<.001$ ) as did course satisfaction ( $\beta=0.06$ ,  $p<.01$ ).

#### 4. CONCLUSION

The adoption of online learning modality among HEIs has affected tremendously students' learning processes and outcomes. Results of the study indicate gender differences in the students' academic self-efficacy, student engagement, and course satisfaction, with male students reporting higher level of self-confidence and engagement in, and satisfaction with the online learning modality. However, female students significantly performed better in online learning. However, no significant differences were observed based on year level. Furthermore, significant relationships were found between students' academic self-efficacy, engagement, and satisfaction in online learning with their perceived academic performance.

As gender differences were found in students' academic self-efficacy, engagement, and satisfaction, teachers should strike a balance by providing various kinds of tasks that will provide

students, especially female students, the confidence in their capabilities, encourage them to be more engaged and participative, attract their attention, develop more positive attitudes, and improve their learning outcomes in online classes.

Just like previous research, this study has shown direct linkage between students' academic self-efficacy, engagement and satisfaction, and academic achievement. As such, it is important for schools to ensure the relevance of their curriculum/course contents, the quality of their teachers' instruction, digital skills, and course organization, as well as their equipment and facilities. UNESCO has stressed the importance of teachers having competencies in using technology in instruction. It has come up with an ICT Competency Framework which spells out what teachers need to possess to ensure quality education and facilitate students' achievement.

Since there is a dearth of research on online learning in Philippine context and because of conflicting results regarding group differences in many studies, more in-depth research is needed to have better understanding of the Filipino students' attitude, performance, and outcomes in online learning. It is also worth to consider the dynamics between the different motivational factors (e.g., motivation, causal attributions, expectations, goals, or self-regulation) and academic performance in online learning. Other student outcomes of online courses may also be explored other than the perceived academic achievement. It is also worth studying the effects of online learning on students' actual academic achievement (e.g., GPA) and psychological and emotional well-being (e.g., life satisfaction, overall well-being, social interaction, productivity, course attendance and completion).

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