THE MEANINGS OF STUDENT ENGAGEMENT: CAN STUDENT ENGAGEMENT PREDICT STUDENT SATISFACTION?

HWANGJI S. LU

Department of Health Care Administration, Ashford University
E-mail: Hwangji.lu@Ashford.edu

Abstract - Advanced communication technology has facilitated exponential growth in online education for decades. High drop-out rates in online learning have also posted a challenge to higher education institutions. Higher education leaders search for ways to improve student retention and graduation rates. Student engagement plays anvital role in student learning and satisfaction in the online learning environment. Student engagement is a critical approach to keep students in the program until graduation. In this paper, a research study investigated student engagement and student satisfaction in an online undergraduate program in health care administration. The results of this research support the findings from a myriad of previous research studies. Recommendations, limitations, and future research are also discussed.

Keywords - Student Engagement, Student Satisfaction, Student Retention, Online Learning .

I. INTRODUCTION

More and more institutions of higher education in the United States are offering online courses. Because of the advance in computer-mediated communication technologies, this modality of learning is becoming increasingly popular. It broadens access to education by transcending the boundaries of time and space [1]. It also provides learners with an avenue to earn a higher education degree while working full-time, caring for family members, and carrying out other social commitments. Given the characteristics of online learners, the drop-out rates have been higher in online modules when compared to those of the traditional education [2]. In recognizing lower retention rates, higher education institutions have taken actions to identify problems and explore strategiesto engage students in their online studies, ensuring that students will successfully complete a college degree [2], [3]. Structurally, this paper begins with an introduction. Section 2 presents a review of literature regardingTinto's Student Integration Model, student engagement, student satisfaction, and student retention in the online learning. Section 3 describes the research methodology along with research questions. Section 4 organizes the findings to answer the research questions. Section 5 discusses the results, research limitation, and future research. This paper ends with a conclusion of the findings and final thoughts.

II. REVIEW OF RELATED LITERATURE

A. Tinto's Student Integration Model

In 1975, Vincent Tinto postulated the Student Integration Model. He proposed that a combination of student's characteristics and the degree of his/her academic, social, and environmental integration into an institution can predict a student's decision on drop-out [4]. Academic integration refers to the situation when a student attaches to the intellectual life of the institution while social integration happens as a student establishes the relationships external to the classrooms [2]. Tinto's Model presented four integration systems: the formal academic system, informal academic system, formal social system, and informal social system [4]. Academic performance is a representative of the formal academic system; faculty and staff interactions are included in the informal academic system; extracurricular activities are examples of the formal social system; and the informal social system comprises peer-group interactions outside of the classrooms [4]. Once a student is integrated into these four systems in the institution, he/she is more likely to persist and commit to the academic goals. Tinto asserted that the institution could enhance these four systems to promote student retention [2], [4].

B. Student Engagement, Student Satisfaction, and Student Retention

Student engagement signifies both the time and effort that students invest in academically purposeful activities and the endeavors that institutions dedicate to utilizing effective educational practices [5]. Student engagement reduces the sense of isolation and improves student's academic performance in online courses [1], [6]. Engaged student are inclined to connect with the course and take responsibility for their own learning [5]. In the online learning environment, student engagement has a crucial role in student learning and satisfaction [6]. As Holmes contended, student engagement is associated with two important indicators in learning: student satisfaction and the quality of a student's experience [7]. Student

engagement is fundamental to student success in online education and the key solution to the issue of drop-out in online learning [6]. Engagement strategies should target at providing positive active learning experience. As Kuh, Cruce, and Kinzie suggested, institutions can strength student engagement and increase student success by helping students participate in high-impact activities for instance counseling, tutoring, writing center, learning communities, and other supporting services [5]. Involvement affects engagement, which in turn influences student learning. Efforts to engage learners have been found to increase student satisfaction and retention within a learning program [5], [7]. Student satisfaction reflects upon the students' attitude toward learning and is a key quality indicator in teaching and learning [8]. Student satisfaction plays a critical role in influencing student retention since satisfied students tend to continue their studies and succeed academically [1], [7]. Furthermore, student learning and satisfaction highly depends on an instructor's presence in the online classroom [1]. In a study focusing on participation and quality of online interaction, Nandi and colleagues found that students highly value their instructor's periodic feedback in the discussion boards because feedback keeps their discussions on track [9]. This study suggested that periodic feedback can promote meaningful dialogue, foster collaboration, and establish a sense of community for a shared learning purpose. The role of instructors and their competencies to use active learning techniques are perceived to be very influential in promoting student engagement [9]. Other studies also showed that students rated high on instructor's timely feedback on academic progress [1],[6], [10].Nash's research also revealed that students drop out of online courses often due to the lack of prompt supports from instructors and tutors [11]. As recommended by Travers, effective online instructors should articulate course expectations, assignments' due dates, guidelines, assessment rubrics, and resources [12]. Students' perceptions about the course are more than likely correlated to student satisfaction and learning [9], [12]. A review of literature uncovers that instructional design at both course and program levels has an impact on student learning and persistence [13]. Effective course designs enable students with various learning styles to make choices of adopting their personal learning strategies [7]. Discussion questions ought to be well-constructed in the way that prompts metacognitive responses of learning, application, and reflection from students [13]. Additionally, to improve student retention, universities should strive to provide quality course-related activities and well-structured supports to help students manage environmental issues and emotional challenges [12].It is believed that a comprehensive and ongoing system with pre-course,in-course, and post-course strategies in instruction and administration can improve student retention in the online programs [1],[12], [13].

III. RESEARCH METHODOLOGIES

A university located in the western region of the United States has offered online associate's, bachelor's, and master's programs to adult learners. The university experienced a high decline in overall student enrollment due to growing competition and new regulation between 2012 and 2015. In response to the disparaging issue, the university has implemented a wide range of interventions to support and foster student success throughout students' academic experiences. Even though the Office of Institutional Effectiveness of the university has conducted research studies at the institutional level, there has no specific research study to examine the impacts on the health care administration program, which is one of the strategic programs with a large student enrollment at the university. Therefore, there is a need to ascertain how the institutional interventions have affected student engagement and student satisfaction in the undergraduate study of health care administration. This research study was an archival quantitative, data mining study using data from the National Survey of Student Engagement (NSSE) that is a system of interrelated surveys administered every year since 1999 [14]. NSSE gathers information from hundreds of four-year colleges and universities about first-year and senior students' participation in programs and activities provided by their institutions for their learning and personal development [14]. NSSE does not assess student learning directly. Rather, NSSE discloses how undergraduates spend their time and what they have learned from attending college or university [14], [15]. The survey items on NSSE are considered as empirically verified sound practices in undergraduate education that institutions can have the impacts by implementing effective teaching practices and creating other conditions to foster student engagement [14],[15].The NSSE results shed lights on the areas where the institutions are performing well and what the learning experience could be improved. In NSSE, engagement Indicators comprise four main themes: Academic Challenge, Learning with Peers, Experiences with Faculty, and Campus Environment [3]. Academic Challenge measures the extent to which colleges emphasize student effort and set high expectations. It has four sub-categories: higher-order learning, reflective and integrative learning, learning strategies, and quantitative reasoning [3]. Learning with Peers measures student engagement with learning both alone and with other students, including two sub-categories: collaborative learning and discussions

with diverse others [15]. Experiences with Faculty measures the extent to which student's interact with faculty in and out of classrooms and contains two sub-categories: student-faculty interaction and effective teaching practices [3], [14]. Campus Environment measures the quality of student's relationships with peers, faculty, and staff, consisting of two sub-categories: quality of interactions and supportive environment [14]. This study identified 64 students enrolling in health care administration in the 2018 NSSE, of whom 22 were first year (FY) students and 42 senior year (SY) students. Specifically, this research study attempted to answer the following questions:

1) Are there any different levels of student engagement between First-Year students and Senior-Year students?
2) Are there any different levels of student satisfaction between First-Year students and Senior-Year students?
3) Are there any correlations between student engagement and student satisfaction inhealth care administration students?

ANOVA was used to compare means between and among groups. An alpha level of $p< 0.05$ was employed as the criterion of statistical significance for comparative tests. Spearman Correlation was used to determine the strength of correlation between student engagement and student satisfaction.

IV. RESULTS

The first research question sought to determine if there were any differences in student engagement between First-Year (FY) and Senior-Year (SY) students. Table 1displays the comparisons between FY and SY students for the theme, Academic Challenge. There was a significant difference between FY and SY students in the sub-category of learning strategies. FY students had a significantly higher mean score than SY students. But there was no substantive difference between FY and SY students when three variables of learning strategies were investigated.

	FY Mean (Standard Deviation)	SY Mean (Standard Deviation)	p-value
Higher-Order Learning	3.21 (0.51)	3.01 (0.64)	0.05
Reflective and Integrative Learning	2.86 (0.76)	2.99 (0.71)	0.16
Learning Strategies	3.39 (0.70)	3.03 (0.77)	0.01*
Quantitative Reasoning	2.91 (0.92)	2.55 (0.86)	0.16

Table I Academic Challenge

Table 2 reveals that there was no statistically significant difference between FY and SY students in Learning with Peers.

	FY Mean (Standard Deviation)	SY Mean (Standard Deviation)	p-value
Collaborative Learning	1.64 (0.74)	1.45 (0.61)	0.08
Discussions with Diverse Others	2.74 (1.17)	2.87 (0.92)	0.37

Table II Learning with Peers

Compared to SY students, FY students perceived statistically significant higher effective teaching practices under Experiences with Faculty, as shown in Table 3.

	FY Mean	SY Mean	p-value

	(Standard Deviation)	(Standard Deviation)	
Student-Faculty Interaction	1.72 (0.78)	1.54 (0.69)	0.14
Effective Teaching Practices	3.46 (0.63)	3.05 (0.77)	0.00*

Table III Experiences with Faculty

The data were further analyzed to ascertain which specific variables in effective teaching practices exhibited significant differences between FY and SY students. Table4 presents that FY students rated significantly higher on provided feedback on student's work in progress as well as prompt and detailed feedback on tests or completed assignments.

	FY Mean (Standard Deviation)	SY Mean (Standard Deviation)	p-value
Provided Feedback on a draft or work in progress	3.55 (0.60)	3.00 (1.01)	0.02*
Provided prompt and detailed feedback on tests or completed assignments	3.55 (0.67)	3.05 (0.94)	0.03*

Table IV Noted Differences in Effective Teaching Practices

Table 5 illustrates differences between FY and SY students under the theme, Campus Environment. Supportive environment showed a statistically higher mean in FY students when compared to that of SY students.

	FY Mean (Standard Deviation)	SY Mean (Standard Deviation)	p-value
Quality of Interactions	6.14 (1.56)	6.27 (1.49)	0.58
Supportive Environment	2.73 (1.24)	2.37 (1.22)	0.00*

Table V Campus Environment

When the data were further examined, as exhibited in Table 6,FY students rated high on two specific variables in supportive environment, using learning support services and providing opportunities to be involved socially.

	FY Mean (Standard Deviation)	SY Mean (Standard Deviation)	p-value
Using learning support services (tutoring, writing center, etc.)	3.50 (0.74)	3.02 (0.98)	0.049*
Providing opportunities to be involved socially	3.00 (1.20)	2.31 (1.24)	0.04*

Table VI Noted Differences in Supportive Environment

The second research question attempted to determine if there were any differences in student satisfaction between FY and SY students. As demonstrated in Table 7, FY students had a mean of 3.41 while SY students had a slightly higher mean of 3.5.

	FY Mean (Standard Deviation)	SY Mean (Standard Deviation)	p-value

Your entire experience with the institution	3.41 (0.50)	3.50 (0.74)	0.61

Table VII Student Satisfaction Scores Between FY Students and SY Students

The third research question sought to discover if there were any correlations between student engagement and student satisfaction. This analysis was done by combining FY and FY students together to study the correlations among students in the department of health care administration. Table 8shows that except the variable, reviewed your notes after class, all other engagement variables under Academic Challenge had either strong or very strong correlation with student satisfaction.

Higher-Order Learning	Correlation
Applying facts, theories, or methods to practical problems or new situations	0.456**
Analyzing an idea, experience, or line of reasoning in depth by examining its parts	0.481**
Evaluating a point of view, decision, or information source	0.437**
Forming a new idea or understanding from various pieces of information	0.389**
Reflective and Integrative Learning	Correlation
Combined ideas from different courses when completing assignments	0.366**
Connected your learning to societal problems or issues	0.439**
Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments	0.355**
Examined the strengths and weaknesses of your own views on a topic or issue	0.313*
Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	0.353**
Learned something that changed the way you understand an issue or concept	0.442**
Connected ideas from your courses to your prior experiences and knowledge	0.485**
Learning Strategies	Correlation
Identified key information from reading assignments	0.314*
Reviewed your notes after class	0.236
Summarized what you learned in class or from course materials	0.334**
Quantitative Reasoning	Correlation
Reached conclusions based on your own analysis of numerical information (numbers, graphs, statistics, etc.)	0.275*
Used numerical information to examine a real-world problem or issue (unemployment, climate change, public health, etc.)	0.445**
Evaluated what others have concluded from numerical information	0.253*

Table VIII The Correlations between Academic Challenge and Student Satisfaction

There are only two engagement variables under Learning with Peers, people with religious beliefs other than your own and people with political views other than your own showed either strong or very strong correlation with

student satisfaction as presented in Table 9.

Collaborative Learning	Correlation
Asked another student to help you understand course material	0.148
Explained course material to one or more students	0.106
Prepared for exams by discussing or working through course material with other students	0.047
Worked with other students on course projects or assignments	0.160
Discussions with Diverse Others	Correlation
People from a race or ethnicity other than your own	0.164
People from an economic background other than your own	0.173
People with religious beliefs other than your own	0.344**
People with political views other than your own	0.296*

Table IX The Correlations between Learning With Peer and Student Satisfaction

In Table 10, two engagement variables of Experience With Faculty, discussed with a faculty member outside of class and discussed your academic performance with a faculty member, were not correlated with student satisfaction. The rest exhibited significant correlations with student satisfaction.

Student-Faculty Interaction	Correlation
Talked about career plans with a faculty member	0.414*
Worked w/faculty on activities other than coursework (committees, student groups, etc.)	0.272*
Discussed course topics, ideas, or concepts with a faculty member outside of class	0.165
Discussed your academic performance with a faculty member	0.119
Effective Teaching Practices	Correlation
Clearly explained course goals and requirements	0.320**
Taught course sessions in an organized way	0.404**
Used examples or illustrations to explain difficult points	0.331**
Provided feedback on a draft or work in progress	0.318*
Provided prompt and detailed feedback on tests or completed assignments	0.293*

Table X The Correlations between Experience With Faculty and Student Satisfaction.

As demonstrated in Table 11,two engagement variables from Campus Environment, interaction with student services staff and attending campus activities/events had a weak correlation with student satisfaction while attending events addressing social, economic, or political issues showed a negative correlation with student satisfaction.

Quality of Interactions	Correlation
Students	0.484**
Academic advisors	0.433**
Faculty	0.474**
Student services staff (career services, student activities, housing, etc.)	0.207

Other administrative staff and offices (registrar, financial aid, etc.)	0.451**
Supportive Environment	Correlation
Providing support to help students succeed academically	0.408**
Using learning support services (tutoring services, writing center, etc.)	0.392**
Encouraging contact among students from diff. backgrounds (soc., racial/eth., relig., etc.)	0.437**
Providing opportunities to be involved socially	0.314*
Providing support for your overall well-being (recreation, health care, counseling, etc.)	0.302*
Helping you manage your non-academic responsibilities (work, family, etc.)	0.366**
Attending campus activities and events (performing arts, athletic events, etc.)	0.019
Attending events that address important social, economic, or political issues	-0.005

Table XI The Correlations between Campus Environment and Student Satisfaction

V. DISCUSSIONS

A. Discussions

In order to reduce high attrition rates, the university has implemented various interventions for more than three years. The primary goal of this study was to explore the levels of student engagement and student satisfaction in students who enrolled in health care administration. The first research question mainly as certained any differences in student engagement between First-Year (FY) and Senior-Year (SY) students. Theoretically, SY students might have been benefited more from the university-wide interventions than FY students did. The findings from this study indicate that FY students, indeed, rated higher than SY students in the majority of engagement variables. Especially, FY students had significantly higher mean scores in four engagement variables: provided feedback, prompt and detailed feedback, using learning support services—such as tutoring services, writing center, and others—and providing opportunities to be involved socially. Unlike traditional college students, our students are adult learners who graduated from high school 10 to 20 years ago. When they returned to school, they might heavily rely on the university's resources to become accustomed to online education. Once they gain the confidence to succeed in the online environment, they appreciate prompt and timely feedback from their instructor to make further improvements subsequently. In contrast, SY students have acquired needed skills, knowledge, and strategies to do well in online classrooms. They might no longer pay much attention to the learning support services and opportunities to be involved socially offered by the University. Since they are confident, mature adult learners, their instructor may not provide detailed comments on their work as FY students do. The second research question particularly examined the overall student satisfaction between FY and SY students. It is not surprising to see that SY students had a slightly higher satisfaction score (3.5 versus 3.41) even though it is not statistically significant. This finding, indeed, espouses the effectiveness of university-wide strategies [16] because SY students appreciate the overall academic and social experiences at the institution. The third research question investigated the correlation between student engagement and student satisfaction. Only one out of 17 engagement variables under the theme of Academic Challenge does not correlate with student satisfaction. It is well-established that successful online learning is based on the premise that learners take charge of their own learning adaptively regulate their cognitive and metacognitive behaviors during learning [12]. The finding from this study also supports that effective course designin fluences student satisfaction and improves student retention [7], [12]. Numerous research studies [1], [6], [8], [9], [13] have demonstrated that instructor's presence and interaction with students play a critical role in student engagement and student satisfaction. The results generated from the theme of Experience With Faculty are consistent with those of previous empirical studies. On the other hand, six out of eight engagement variables under Learning with Peers do not correlate with student satisfaction. This might be due to the limited interaction among students in the online classrooms. Research has showed that student-to-student interaction has an impact on student satisfaction [1], [6], [13]. Thus, the result suggests that

the university could improve the course design by increasing the learning opportunities such as peer-review or group project for student-to-student interactions. When the engagement variables under Campus Environment were examined, this study demonstrates that quality interactions with academic advisors, faculty, other administrative staff and students are correlated with student satisfaction, which is supported by Radovan's [2] and Travers's[12] recommendations. In this study, university's efforts to provide various support services and help students manage their non-academic responsibilities influence student satisfaction, which is also consistent with the finding in Page and Kulick's study [8].It is also of interest to know that attending events that address important social, economic, or political issues exhibited a negative effect on student satisfaction. This might be due to the busy schedule that adult learners have. Struggling with the balance among job, family, and schoolwork, our students might not have extra time to care for social, economic, or political issues.

B. Limitations and Future Research

There are three main limitations in the study. First, similar toother social science research, this study is not generaliz able to different online programs at the same university or other universities. Second, the survey was not managed by the researcher, and the response rate was low. Low response rate could generate non response bias. Third, this study only presents a snapshot of the information. As such, future research could use longitudinal data to explore whether there are any long-term benefits of student engagement on student satisfaction. Future research might investigate students' perceptions about engagement strategies and identify key strategies that have impacts on student satisfaction and retention.

VI. CONCLUSION

This research is the first study to examine student engagement and student satisfaction in the bachelor's program of health care administration. The findings derived from this research support results reported among other empirical research studies and the framework of Tinto's Student Integration Model. This research study also confirms the usefulness of the university's efforts to improving students' overall learning experiences. Moreover, this study highlights the possible areas to further strengthen student engagement and student satisfaction at the program level. Increasing student retention is feasible; however, it is up to the management's decisions on calibrating the program to help students succeed in online learning.

REFERENCES

[1] M. C. Bickle, R. D. Rucker, and K. A. Burnsed, "Online learning: Examination of attributes that promote student satisfaction," Online Journal of Distance Learning Administration, vol. XXII, no. 1, Spring 2019.

[2] M. Radovan, "Should I stay, or should I go? Revisiting student retention models in distance education," Turkish Online Journal of Distance Education, vol. 20, no. 3, pp. 29-40, July 2019.

[3] K. A. Meyer, "Student engagement in online learning: What works and why," ASHE Higher Education Report, vol. 40, no. 6, pp. 1-14. November 2014. doi: 10.1002/aehe.20018

[4] V. Tinto, "Dropouts from higher education: A theoretical synthesis of recent literature," A Review of Educational Research, vol. 45, no. 1, pp. 89-125. doi: 10.2307/1170024

[5] G. D. Kuh, T. M. Cruce, R. Shoup, and J. Kinzie, "Unmasking the effects of student engagement on first-year college grades and persistence," The Journal of Higher Education, vol. 79, no. 5, pp. 540-563, September/October 2008. Doi: 10.1353/jhe.0.0019

[6] F. Martin, and D. U. Bolliger, "Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment," Online Learning, vol. 22, no. 1, pp. 205-222, 2018, doi:10.24059/olj.v22i1.1092

[7] N. Holmes, "engaging with assessment: Increasing student engagement through continuous assessment," Active Learning in Higher Education, vol. 19, no. 1, pp. 23-34, 2018.

[8] E. Page, and M. Kulick, "Student satisfaction as a predictor of retention in a professional online for-profit higher education institution," Online Journal of Distance Learning Administration, vol. XIX, no. 4, winter 2016.

[9] D. Nandi, M. Hamilton, J. Harland, and S. Mahmood, "Investigation of participation and quality of online interaction, I. J. Modern Education and Computer Science, vol. 8, pp. 25-37, 2015. doi: 10.5815/ijmecs.2015.08.04

[10] H. He, Q. Zheng, D. Di, and B. Dong, "How learner support services affect student engagement in online learning environments," IEEE ACCESS, vol. 7, pp. 49961-49973, 2019. 10.1109/ACCESS.2019.2910589

[11] J. A. Nash,"Future of online education in crisis: A call to action," The Turkish Online Journal of Educational Technology, vol.14, no. 2, pp. 80-88, 2015.

[12] S. Travers, "Supporting online student retention in community colleges. What data is most relevant?," The Quarterly Review of Distance Education, vol. 17, no. 4, pp. 49-61, 2016.

[13] S. S. Christensen, and J. S. Spackman,"Dropout rates, student momentum, and course walls: A new tool for distance education designers". The Journal of Educators Online, vol.14, no. 2. July 2017. Retrieved from https://files.eric.ed.gov/fulltext/EJ1150708.pdf

[14] National Survey of Student Engagement, "Engagement insights: Survey findings on the quality of undergraduate education- Annual results 2018," Bloomington, IN: Indiana University Center for Postsecondary Research, 2018.

[15] G. D. Kuh, T. M. Cruce, R.Shoup, and J. Kinzie, "Unmasking the effects of student engagement on first-year college grades and persistence," The Journal of Higher Education, vol. 79, no. 5, pp. 540-563, September/October2008. doi: 10.1353/jhe.0.0019

[16] H. Lu, "Implementing comprehensive interventions to support student success in online learning," International Journal of Teaching and Education, vol. 6, no. 2, 2019. doi: 10.20472/TE.2018.6.2.006

★★★