

45th Biennial Convention (16-20 November 2019)

Course Engagement in an Accelerated On-Line RN-to-BSN Program

Daisha J. Cipher, PhD

Regina Wilder Urban, PhD, RN-BC, CCRN

Mary B. Mancini, PhD, RN, NE-BC, FAHA, ANEF, FAAN, CNA

College of Nursing and Health Innovation, University of Texas at Arlington, Arlington, TX, USA

Background: Since 2003, enrollment in RN-to-BSN programs across the US has increased annually (AACN, 2017). In 2017, 747 RN-to-BSN programs were available nationwide. These programs are offered in a variety of formats, with more than 600 delivered partially or completely online. Given the growing number of online RN-to-BSN programs, it is imperative for nurse educators to better understand the online course behaviors of nursing student enrollees. Online behaviors may include early participation in each online course, timely assignment submissions, and time spent in the online learning environment. Understanding online course usage and its association with retention and persistence in this population may result in the identification of “at-risk” students and timely interventions to promote persistence and success (Cipher, Urban, Boyd, & Mancini, 2018). Little is known about the behavior of nursing students within learning management systems or how these data could be used to predict academic retention, progression, or success with RN-to-BSN students (Cipher, Mancini, & Shrestha, 2017). There is a need to better understand the online behaviors of students within their programs’ learning management systems.

Method: To better understand the online course engagement behaviors of students who select an online RN-to-BSN program and the factors that predict their success, we undertook a retrospective associational analysis of 307 students enrolled in the [University withheld] accelerated online (AO) RN-to-BSN program.

Student demographic characteristics (gender, race, age, prior degree status, financial aid), learning management system (LMS) variables (time to first login, number of missing assignments, and total hours spent in online learning for the entire program) and progression to graduation were collected for AO RN-to-BSN student cohorts who enrolled during the Spring of 2014. For each course, time to first login was defined as the time elapsed between the official start date of the course and the time that the student logged into the course for the first time. Because the courses were available to students prior to the official start date, students could have logged in prior to the start date, on the day of the start date, or after the start date. The LMS also captured and reported the total hours spent engaged with the LMS for each student’s entire set of online courses.

These students were followed to completion that resulted in either graduation, discontinuation, or failure. Discontinuation was defined as the failure to enroll in courses for an entire calendar year (365 days). No currently enrolled or progressing students were included.

Generalized linear mixed models (GLMM) were computed to examine the predictive associations between engagement in online courses and outcomes. The GLMM models accounted for multiple occurrences of students within courses. Significance was

evaluated at a .10 alpha level, per the recommendations of Hosmer and Lemeshow (2000) regarding exploratory logistic regression models.

Results: The multilevel data consisted of 307 students who took eight courses. Of the 307 students, most were female (86.6%), and the mean age was 36.5 ± 8.8 years. The ethnic breakdown of the sample was primarily white (59.2%), followed by Black/African-American (15.7%), Hispanic/Latino (12.6%), and Asian (5.9%). Most of the students enrolled in the program with an associate's degree as their highest level of education (67.4%), and 20.5% had a previous bachelor's degree in another field. Over half of the sample (51.2%) received financial aid for all or part of the program.

Most of the students (91.2%) graduated from the program, and of those, 100% graduated on time (6 semesters or less). The remaining students either discontinued (8.5%) or failed out of the program (.3%). Descriptive statistics for each course indicate that many students (more than 50%) logged into the LMS prior to the official start date (the median time to login for all classes was 1 day prior to start date). Missing assignments were rare (the median for all classes was 0 missing assignments). The number of total program hours spent in the LMS was 671.6 ± 384.1 for all students, and 685.7 ± 398.8 for only those students who graduated.

Generalized linear mixed models (GLMM) were computed to examine the association between time to first login, number of missing assignments, total hours spent in online learning for the entire program and progression to graduation. Covariates were age at enrollment, gender, and ethnicity. Analyses indicated that the total hours spent in online learning significantly predicted the likelihood of graduation, after controlling for age, gender, and ethnicity ($p = .07$). Students who graduated spent significantly more time within the LMS system than those who did not graduate ($M = 686$ versus 272 hours, respectively). Time to first login ($p = .68$) and number of missing assignments ($p = .99$) did not significantly predict graduation after controlling for age, gender, and ethnicity.

Conclusion: These results indicate that the time that students spend in their online courses can predict program success. With the recent rapid increase in online nursing programs, it is important that we more fully understand the online educational experiences of students in online campus RN-to-BSN programs. This case study found that on average, students demonstrated punctual behaviors in their online courses. Results revealed that time spent engaging in online courses is a predictor of success, even when adjusting for demographics. The creation of an early-identification process for at-risk students who exhibit low levels of online engagement would have the potential to enhance educational outcomes even further.

Title:

Course Engagement in an Accelerated On-Line RN-to-BSN Program

Keywords:

RN to BSN, nursing education and online learning

References:

- Abele, C., Penprase, B., & Ternes, R. (2013). A closer look at academic probation and attrition: What courses are predictive of nursing student success? *Nurse Education Today*, 33, 258-261. doi:[10.1016/j.nedt.2011.11.017](https://doi.org/10.1016/j.nedt.2011.11.017)
- American Association of Colleges of Nursing (AACN) (2017). *Degree completion programs for Registered Nurses: RN to Master's Degree and RN to Baccalaureate Programs*. Retrieved from: <http://www.aacnursing.org/News-Information/Fact-Sheets/Degree-Completion-Programs>
- Baldacchino, D.R., & Galea, P. (2012). Student nurses' personality traits and the nursing profession: Part 2. *British Journal of Nursing*, 21, 530-535. doi:[10.12968/bjon.2012.21.9.530](https://doi.org/10.12968/bjon.2012.21.9.530)
- Boylston, M. T. & Jackson, C. (2008). Adult student satisfaction in an accelerated RN-to-BSN program: A follow-up study. *Journal of Professional Nursing*, 24(5), 285-295. doi:10.1016/j.profnurs.2007.10.006
- Cipher, D. J., Mancini, M. E. & Shrestha, S. (2017). Predictors of persistence and success in an accelerated online RN-to-BSN Program. *Journal of Nursing Education*, 56(9), 522-526. doi: 10.3928/01484834-20170817-02
- Cipher, D.J., Urban, R.W., Boyd, J. & Mancini, M.E. (2018). Online Course Engagement Among Undergraduate Nursing Student Veterans. *Journal of Veterans Studies*, 4(1), 1–14.
- Davidson, S.C., Metzger, R.L., & Findley, S. (2014). Comparison of hybrid and completely online RN-to-BSN curricula: Aspects of program structure that lead to success. *The Journal of Continuing Education*, 45(5), 219-224. doi:10.3928/00220124-20140417-05
- DellAntonio, J (2017). Retaining the online RN-to-BSN nursing student: Does instructor immediacy matter? *Teaching and Learning in Nursing*, 12, 122-127. doi:10.1016/j.teln.2017.01.003
- Girard, S. A., Hoeksel, R., Vandermause, R., & Eddy, L. (2017). Experiences of RNs who voluntarily withdraw from their RN-to-BSN program. *Journal of Nursing Education*, 56(5), 260-265. doi:10.3928/01484834-20170421-02
- Hampton, D. & Pearce, P. F. (2016). Student engagement in online nursing courses. *Nurse Educator*, 41(6), 294-298. doi: 10.1097/NNE.0000000000000275
- Hosmer, D.W., & Lemeshow, S. (2000). *Applied Logistic Regression*. New York: Wiley.
- Institute of Medicine (2011). *The Future of Nursing: Leading Change, Advancing Health*. Washington, DC: The National Academies Press.
- Kenny, A., Kidd, T., Nankervis, K., & Connell, S. (2011). Mature age students access, entry, and success in nurse education: An action research study. *Contemporary Nursing*, 38, 106-118. doi:[10.5172/conu.2011.38.1-2.106](https://doi.org/10.5172/conu.2011.38.1-2.106)
- Kovner, C., Brewer, C., Katigbak, C., Djukic, M., & Fatehi, F., (2012). Charting the course for nurses' achievement of higher education levels. *Journal of Professional Nursing*, 28(6), 333-343. doi:10.1016/j.profnurs.2012.04.021
- Levy, Y. & Ramim, M. M. (2012). A study of online exams procrastination using data analytics techniques. *IJell-O special series of CHAIS conference 2012 best papers*. Volume 8, 1 – 17.

Mancini, M. E., Ashwill, J. & Ciper, D. J. (2015). A comparative analysis of demographic and academic success characteristics of online and on-campus RN-to-BSN students. *Journal of Professional Nursing*, 31(1),71-76. doi: 10.1016/j.profnurs.2014.05.008

McElroy, B. W., & Lubich, B. H. (2013). Predictors of course outcomes: Early indicators of delay in online classrooms. *Distance Education*, 30(1), 84-96. doi:10.1080/01587919.2013.770433

National League for Nursing. (2016). *Retention rates in RN programs*. Retrieved from: <http://www.nln.org/newsroom/nursing-education-statistics/retention-rates-in-rn-programs>

National Council of State Boards of Nursing (2014). *2012 and 2013 Nurse Licensee Volume and NCLEX Examination Statistics*. NCSBN Research Brief, vol 61. Retrieved from: https://www.ncsbn.org/14_2012_2013_NCLEXExamStats_vol61_updated.pdf

National Council of State Boards of Nursing (2015). *2014 Nurse Licensee Volume and NCLEX Examination Statistics*. NCSBN Research Brief, vol 64. Retrieved from: https://www.ncsbn.org/15_2014_NCLEXExamStats_vol64.pdf

National Council of State Boards of Nursing (2016). *2015 Nurse Licensee Volume and NCLEX Examination Statistics*. NCSBN Research Brief, vol 68. Retrieved from: https://www.ncsbn.org/16_2015_NCLEXExamStats_vol68.pdf

National Council of State Boards of Nursing (2017). *2016 NCLEX Examination Statistics*. NCSBN Research Brief, vol 70. Retrieved from: https://www.ncsbn.org/17_NCLEXExamStats_vol70.final.pdf

Perfetto, L. M. (2015). Facilitating educational advancement of RNs to the Baccalaureate: What are they telling us? *Nursing Education Perspectives*, 36(1), 34-41. doi:10.5480/13-1161.1

Robertson, S., Canary, C., Orr, M., Herberg, P., & Rutledge, D. (2010). Factors related to progression and graduation rates for RN-to-bachelor of science in nursing programs: Searching for realistic benchmarks. *Journal of Professional Nursing*, 26(2), 99-107, doi:[10.1016/j.profnurs.2009.09.003](https://doi.org/10.1016/j.profnurs.2009.09.003)

Sarver, W., Cichra, N. & Kline, M (2015). Perceived benefits, motivators, and barriers to advancing nurse education: Removing barriers to improve success. *Journal of Nursing Education*, 36(3), 153-156. doi: 10.5480/14-1407

Shelton, E.N. (2012). A model of nursing student retention. *International Journal of Nursing Education Scholarship*, 9(1), Article 6. doi:10.1515/1548-923X.2334

Sportsman, S. & Allen, P. (2011). Transitioning Associate Degree in nursing students to the Bachelor of Science in Nursing and beyond: A mandate for academic partnerships. *Journal of Professional Nursing*, 27(6), e20-e27. doi:10.1016/j.profnurs.2011.08

Winokur, E. J., Rutledge, D. N., Hayes, A. (2016). Magnet facility nurses: Pursuing a Baccalaureate degree in nursing. *Journal of Professional Nursing*, 32(4), 283-291. doi:10.1016/j.profnurs.2015.11.003

You, J. W. (2016). Identifying significant indicators using LMS data to predict course achievement in online learning. *Internet and Higher Education*, 29, 23–30. doi:10.1016/j.iheduc.2015.11.003

U.S. Department of Labor, Bureau of Labor Statistics. (2015). *Registered Nurses Work Environment*. Retrieved from <https://www.bls.gov/ooh/healthcare/registered-nurses.htm#tab-3>

Abstract Summary:

There is a need to better understand the online behaviors of students within their programs' learning management systems. An associational analysis was conducted with data collected from 307 RN-to-BSN students. The results of the multilevel analyses indicate that the time that students spend in their online courses can predict program success.

Content Outline:

I. Introduction

- A. Given the growing number of online RN-to-BSN programs, it is imperative for nurse educators to better understand the online course behaviors of the nurse enrollees.
- B. Little is known about the behavior of nursing students within learning management systems or how these data could be used to predict academic retention, progression, or success with RN-to-BSN students.
- C. There is a need to better understand the online behaviors of students within their programs' learning management systems.

II. Methods

- A. This study was a retrospective associational analysis of 307 students enrolled in the [University withheld] accelerated online RN-to-BSN program.
- B. Student demographic characteristics, learning management system variables, total hours spent in online learning, and progression to graduation were collected for accelerated online RN-to-BSN student cohorts who enrolled during the Spring of 2014.
- C. Generalized linear mixed models (GLMM) were computed to examine the predictive associations between engagement in online courses and outcomes.

III. Results

- A. The multilevel data consisted of 307 students who took eight courses.
- B. Most of the students (91.2%) graduated from the program, and of those, 100% graduated on time (6 semesters or less).
- C. Analyses indicated that the total hours spent in online learning significantly predicted the likelihood of graduation, after controlling for age, gender, and ethnicity.
- D. Students who graduated spent significantly more time within the LMS system than those who did not graduate.
- E. Time to first login and number of missing assignments did not significantly predict graduation after controlling for age, gender, and ethnicity.

IV. Conclusions

- A. These results indicate that the time that students spend in their online courses can predict program success.
- B. This case study found that on average, students demonstrated punctual behaviors in their online courses.

C. The creation of an early-identification process for at-risk students who exhibit low levels of online engagement would have the potential to enhance educational outcomes even further.

First Author

Daisha J. Cipher, PhD
University of Texas at Arlington
College of Nursing and Health Innovation
Associate Professor
Arlington TX
USA

Author Summary: Daisha J. Cipher, Ph.D. is an applied biostatistician who specializes in risk modeling, program evaluation, and outcomes research. Dr. Cipher has served as the primary biostatistician and/or PI or co-PI for over 24 funded grant projects totaling over \$20 million, has published over 75 databased publications, and has taught over 80 biostatistics, epidemiology, and research design courses.

Second Primary Presenting Author

Primary Presenting Author

Regina Wilder Urban, PhD, RN-BC, CCRN
University of Texas at Arlington
College of Nursing and Health Innovation
Clinical Assistant Professor
Arlington TX
USA

Author Summary: Dr. Urban has been a nurse for 20 years working in the areas of critical care and nursing education. She is certified in critical care nursing, nursing staff development, and nursing education. Currently Dr. Urban is a clinical assistant professor in the College of Nursing and Health Innovation at the University of Texas. In 2018, she received the University of Texas Regents' Outstanding Teaching Award. Her research interests include transition to practice and nursing education.

Third Secondary Presenting Author

Corresponding Secondary Presenting Author

Mary B. Mancini, PhD, RN, NE-BC, FAHA, ANEF, FAAN, CNA
University of Texas at Arlington
College of Nursing and Health Innovation
Associate Dean of Undergraduate Program
Arlington TX
USA

Author Summary: Dr. Mancini is a professor and Senior Associate Dean for Education Innovation in the College of Nursing and Health Innovation at the University of Texas. Dr. Mancini's research interests include resuscitation, patient safety and innovations in health professions education.