Writing Across the Curriculum (WAC) Educational Strategies to Enhance Graduate/Undergraduate Nursing Comprehension of Pathophysiology

Millie A. Hepburn, PhD, RN
Karen A. Myrick, DNP
Christopher M. Hakala, PhD
Paul P. Pasquaretta, PhD
Jeffrey E. Foy, PhD
Rhea M. Sanford, PhD, RN

(1) School of Nursing, Quinnipiac University, North Haven, CT, USA
(2) Psychology, Quinnipiac University, Hamden, CT, USA
(3) Academic Innovation and Effect, Quinnipiac University, Hamden, CT, USA

Background. Although much has been written about the value of the ‘flipped classroom’ and ‘blended learning’ as they pertain to active participation in learning activities, much of today’s didactic classroom learning in nursing education is deeply rooted in traditional passive techniques (Owsten, York & Murtha, 2013; Thai, De Wever & Valcke, 2017; Zacharis, 2015). The use of consistent writing prompts in the discussion of varied problems and topics can serve to expand the breadth and depth of learning, and are used in many university settings and schools (Baepler, Walker & Driessen, 2014). The concept of ‘writing to learn’ has been shown to improve understanding and performance in a variety of settings, such as engineering (Goldberg, Rich & Masnick, 2014) and human physiology (Bunker & Schnieder, 2015) to expand content knowledge. Given the time constraints involved in the delivery of complex, content rich education in nursing, passive didactic learning represents a missed opportunity for undergraduate nursing students or graduate doctoral students to engage in scholarly writing as a mechanism to enhance learning.

Method. In a university setting, when writing prompts are used in concert with culturally sensitive patient oriented problem scenarios related to complex pathophysiology, nursing students have been shown to more able to integrate application knowledge related to the discipline of nursing. Despite classrooms ranging in size from 28-141 students, randomly assigned student groups of 4-5 were assigned to address four general writing prompts that were further articulated so as to be related to pathophysiology concepts. These prompts are as follows: 1. Identify the relevant information and uncertainties, 2. Explore the interpretations and connections, 3. Prioritize alternatives and implement conclusions, and 4. Integrate, monitor and refine strategies to re-address the problem. Students are assigned to a patient oriented scenario that represents application of classroom related pathophysiology content. These case scenarios also include human factors related to diseases and conditions, such as health care access, concerns about loss of employment, or other social or economic challenges. In the context of small group dynamics and delegation, students self assign to various sections of the assignment for completion, and then review their own writing, as well as their peers in the group in advance of submission of their written work and in-class oral group presentation. Although students are not allowed to present using powerpoint, they will often use other strategies to improve education to the class.

Although the WAC strategy was initiated in graduate pathophysiology, the opportunity for further development was realized at the senior, then junior level undergraduate medical surgical nursing classes. The writing prompts facilitate student writing that engages the human effect of pathophysiology, and necessitates the review of inter-professional literature. Through an exploration of culture, context, resource availability, health policy and health disparities, students consistently report that they are able to retain knowledge in a context that promotes effective nursing practice. Group presentation of material provides an opportunity to engage an additional touch point of knowledge just prior to unit or comprehensive exams.

Outcomes. Faculty have identified that the students engaged quickly and deeply within the Writing across curriculum group assignments. Student group presentations consistently reflect high levels of
scholarship, depth of writing and innovative connections of the core pathophysiology content to societal concerns, such as access to healthcare, processes involved in treatment and policy related to available treatment. Students report in course evaluations that the use of the WAC strategy has deepened their knowledge of course content while providing the opportunity for reflection and attentiveness to the humanistic and holistic nature of problems associated with various diseases and conditions. Through active and engaged learning, students report the ability to synthesize and construct new knowledge, while concurrently reinforcing course content during the group presentations in preparation for examinations and patient care. Regardless of level of student, the presentations have reflected scholarly investment, and have been of consistently high quality. Two faculty members are assigned to grade both written work and oral presentations using a developed rubric that was shared with students at time of assignment.

Conclusion. Multiple touch points of content rich information fosters a deep understanding of course content. Use of Writing across the Curriculum (WAC) strategies have been shown to enhance learning in several university settings. Use of WAC in schools of nursing offers an ability to apply complex and comprehensive pathophysiology knowledge to patient oriented problems faced by nurses in a variety of clinical settings and across multiple levels of undergraduate and graduate nursing education.

Next steps. 1. Evaluate the relationship of the WAC strategy in undergraduate and graduate education to effective scholarly writing within comprehensive capstone projects, 2. Evaluate the effect of WAC strategy on performance in licensure exams such as the NCLEX and nurse practitioner examinations.

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References:


Abstract Summary:
This session describes how writing across curriculum strategies have enhanced nursing student comprehension of complex pathophysiology concepts through the use of four consistent writing prompts. Students effectively synthesize a review of literature, make relevant associations within and outside of nursing through the use of small group writing and in-class presentation.

Content Outline:

Introduction

1. Overview of University Setting and Student population (DNP nurse practitioner students and undergraduate junior and senior nursing students)
2. Overview of Writing Across the Curriculum (WAC) Strategies
   1. Although much has been written about the value of the 'flipped classroom' as it pertains to active participation in learning activities, much of today's didactic classroom learning in graduate education is deeply rooted in traditional passive techniques
   2. Given the time constraints involved in the delivery of complex, content rich education, passive learning represents a missed opportunity for undergraduate and DNP students to engage in scholarly writing as a mechanism to enhance learning
   3. Writing as a mode of learning has been discussed in the literature since the 1970's. The integrative processes of active participation, group dynamic, feedback and reinforcement of challenging information in a writing exercise provides valuable engagement of both the left and right hemispheres of the brain, and has value far beyond the classroom in other professional education, such as engineering.
   4. Collaboration with the WAC team in the school of education has fostered skills regarding WAC principles to the School of nursing faculty team.
3. Description of student writing exercise and the use of prompts
4. Examples of completed student exercises

Use of the 'Writing Across the Curriculum' Student assignment

1. Writing Across the Curriculum Prompts (4)
   1. **Identify the relevant information and uncertainties.** Students explore the need for additional information, rectify unclear information and answer pathophysiology questions related to the specific case scenario, based on prompts that trigger additional questions for the student to consider.
   2. **Explore the interpretations and connections.** Students are assigned prompts that related to various patient conditions and explore differential diagnoses.
   3. **Prioritize alternatives and implement conclusions.** Students further explore the possible diagnoses, and consider confirming or contradictory information in relationship to the proposed condition and are prompted to identify confirmatory findings.
   4. **Integrate, monitor and refine strategies to re-address the problem.** Students are stimulated to identify the humanistic factors that directly relate to the problem, and create a holistic patient teaching plan based on the pathophysiology that had been identified in the scenario.

Qualitative themes described by students related to the WAC prompts

1. Able to perform a deep investigation into the pathophysiology of a problem
2. Strengthened interpersonal skills in group dynamic of the project
3. Engaged scholarly writing skills using synthesis and format
4. Assignment offers an opportunity for additional ‘touch point’ to learn content from editing and evaluating the writing skills of their student peers
5. The entire class benefits from patient-specific pathophysiology review from their fellow students in the classroom
6. Students describe this application-based as very helpful for content mastery just prior to unit exams

WAC Project Outcomes

1. Students clearly relate to the general prompts used in general education to further their understanding of challenging topics
2. Students display a higher mastery of pathophysiology concepts as seen through grading system
3. Students expressed that they gained confidence in group dynamics and presentation skills
4. Students describe that they feel prepared for application questions in unit exams and in licensure examinations related to challenging concepts
5. Continue to follow the cumulative impact of WAC on clinical and scholarly writing skills in final undergraduate and graduate capstone projects.

III. Conclusion

1. The WAC integration into pathophysiology courses demonstrates a positive impact on multidimensional aspects of both undergraduate and DNP learning goals
2. The impact of active learning and the provision of multiple ‘touch points’ in regard to challenging concepts may foster a deeper understanding of the conceptual underpinnings of course content.
3. Continued monitoring of student progression through scores related to pathophysiology content in national licensure examinations will offer additional indicators as to the value of WAC in nursing education.

First Primary Presenting Author
**Primary Presenting Author**
Millie A. Hepburn, PhD, RN
Quinnipiac University
School of Nursing
Assistant Professor
North Haven CT
USA

**Professional Experience:** 2016-present -- Assistant Professor of Nursing, Quinnipiac University, North Haven, CT. Course and curriculum design at undergraduate and graduate levels. 2011-2015 -- Nurse Educator/neuroscience clinical nurse specialist, NYU Langone Medical Center, NY, NY. Neuroscience program development and annual competency design 2007-2011 -- Neuroscience clinical nurse specialist, Columbia University Medical Center, NY, NY. Programmatic Staff development and education 2001-2007 Neuroscience Development Coordinator, Pinnacle Health System, Harrisburg, PA Program Design and Staff development 1996-2000 Adjunct professor of Nursing Bloomsburg University, Bloomsburg, PA 1990-1995 Adjunct professor of Nursing Lycoming College, Williamsport, PA Curriculum Design and Development

**Author Summary:** Millie Hepburn, PhD RN has published in educational design and neuroscience related topics. She presents nationally, internationally, locally, regionally on a variety of topics related to health literacy, cultural competency, neuroscience nursing, stroke and wound care. She has received awards for from the American Stroke Association, a nursing spectrum award, Nursing excellence awards from the Nightingale awards and Columbia University. In her current patient research, Ms. Hepburn is studying health promotion behaviors among urban black women.

Second Secondary Presenting Author
**Corresponding Secondary Presenting Author**
Karen A. Myrick, DNP
Quinnipiac University
School of Nursing
**Professional Experience:** Quinnipiac University 2010-2017. Coordinator for course development in Primary care nurse practitioner track program. Research and course coordinator for various programs in the School of Medicine. Fellow for Inter-professional Education, Quinnipiac University, specializing in simulation for course design.

**Author Summary:** Dr. Karen Myrick, is a Doctor of Nursing Practice and tenured nursing professor with a joint appointment the Frank Netter School of Medicine. Dr. Myrick was the founding Director for the Family Nurse Practitioner Program At The University of Connecticut. She has been active in course development and re-design, teaching a variety of courses from on-ground to online and from didactic to labs, both in the undergraduate and graduate programs.

**Third Author**
Christopher M. Hakala, PhD
Quinnipiac University
Psychology
executive director of the Center for Teaching and Learning at Quinnipiac University
Hamden CT
USA

**Professional Experience:** Director for teaching strategy implementation at Quinnipiac University for 10 years. Author of multiple peer reviewed papers on learning strategies and educational processes. Has provided mentorship for this project.

**Author Summary:** Chris Hakala is the executive director of the Center for Teaching and Learning at Quinnipiac University. Chris has a Ph.D. in experimental psychology and has been a faculty member and administrator in various colleges and universities for almost 20 years. His research interests include memory, language and the teaching/learning process.

**Fourth Author**
Paul P. Pasquaretta, PhD
Quinnipiac University
Academic Innovation and Effect
Director of Research and Writing Institute
Hamden CT
USA

**Professional Experience:** Director of Research and Writing Institute. Quinnipiac University. Organizational leader in academic Innovation and effect within the center for communication and engineering. Has provided mentorship to creative topics in education for over 20 years to promote active and engaged learning.

**Author Summary:** Paul Pasquaretta is the Director of the Research and Writing Institute at Quinnipiac University. A seasoned WAC administrator, he manages training, workshops, conferences, retreats, and writing contests. He is the managing editor of Double Helix: A Journal of Critical Thinking and Writing, published by the Quinnipiac University College of Arts and Sciences.

**Fifth Author**
Jeffrey E. Foy, PhD
Quinnipiac University
Psychology
Assistant professor of psychology
Hamden CT
USA
**Professional Experience:** Jeffrey's authored several publications in regard to the psychology of education and currently directs the Quinnipiac University Writing Across the Curriculum program for the past 4 years. Mr. Foy has created exceptional dialogue for faculty to gain skills and expertise in writing assignments across various schools and programs.

**Author Summary:** Jeffrey is an innovative speaker and researcher that fosters multidimensional understanding of topics related to writing across the curriculum and has engaged faculty from multiple schools and programs to engage in strategies to learn through various writing programs.

Sixth Author
Rhea M. Sanford, PhD, RN
Quinnipiac University
School of Nursing
Clinical Professor of Nursing
North Haven CT
USA

**Professional Experience:** 2011–2017 Director of undergraduate nursing education at Quinnipiac University School of Nursing 1995–2011 Administrative Dean for undergraduate education University Of Connecticut Various roles of accelerating responsibility in nursing administration and education.

**Author Summary:** Dr. Sanford maintains a PhD from University of Connecticut and is a beloved director for undergraduate nursing education, as she has a keen eye for the needs of students, as well as faculty in providing quality education for our future nurses. She has received multiple types of awards and acclaim and is consistently told that she is the reason why our students are successful in their nursing career.