

11-1-2013

Teaching Information Literacy Skills to Undergraduate Nursing Students: A Collaborative Approach

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Recommended Citation

Suzanne E. Zentz and Kimberly J. Whalen. "Teaching Information Literacy Skills to Undergraduate Nursing Students: A Collaborative Approach" Honor Society of Nursing, Sigma Theta Tau International 42nd Biennial Convention. Indianapolis, Indiana. Nov. 2013. Available at: http://works.bepress.com/suzanne_zentz/4

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Background

- BSN prepared nurses must be able to effectively identify, analyze, and synthesize evidence (AACN, 2008; ACRL, 2005, Cronenwett, et al., 2007).
- Integration of information literacy skills sessions throughout a course positively impacts skill development (Carlock & Anderson, 2007; Flood, Gasiewicz, Delpier, 2010; Mounce, 2010).
- Embedding a librarian within physical class sessions and online learning management systems enhances student learning. (Muir and Heller-Ross, 2010; Schulte 2012).
- Active learning activities including worksheets, group work and hands-on exercises are favored by learners (Mangold, 2007; McCurry & Martins, 2010).

Purpose

Determine the effectiveness of nursing and library faculty collaborative teaching and learning activities on undergraduate nursing students' ability to identify, analyze and synthesize evidence.

Implementation

- Setting was a College of Nursing within a mid-sized, faith based university located in the Midwest.
- Participants were 253 BSN senior-level nursing students enrolled in a nursing research/EBP course.
- Teaching/learning activities aimed at increasing information literacy skills were implemented over four semesters (see Table 1).
- Research logs and Evidence Summary Grids for 39 student groups were evaluated.
 - Logs and grids were requirements for an EBP Group Project. The purpose of the project was to explore evidence available regarding a clinical problem.
 - As part of the project, students formulated and documented a strategic search using a research worksheet.
 - Students evaluated and selected the best evidence, described why evidence was selected, and reflected on search process within a narrative research log.
 - Evidence was analyzed and synthesized using summary grid which identified the purpose, sample, design, measurement, results, and level of evidence for each publication.
- Individual student final exam and course scores which assessed learning outcomes were evaluated.



Poster can be found at:
http://scholar.valpo.edu/nursing_fac_presentations/1/

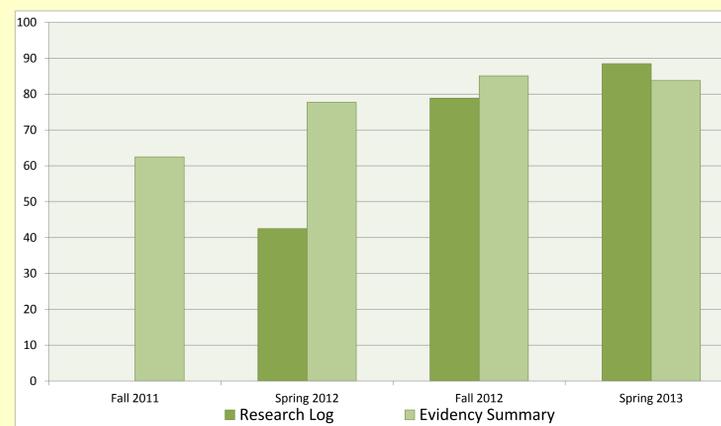
Table 1 Implementation of Collaborative Teaching/Learning Activities			
Fall 2011	Spring 2012	Fall 2012	Spring 2013
Library session 1 • Prim/Second Research Evidence summary Poster presentation	Embedded librarian Library sessions 1,2 • Prim/Second Research • Levels of Evidence Group research log Evidence summary Poster presentation	Embedded librarian Library sessions 1,2,3,4 • Prim/Second Research • Levels of Evidence • Systematic Search • Group Work EBP worksheet Group research log with reflection Evidence summary Poster presentation	Embedded librarian Library sessions 1,2,3,4 • Prim/Second Research • Levels of Evidence • Systematic Search • Group Work EBP worksheet Group research log with reflection Evidence summary Poster presentation

Evaluation

Collaborative Teaching/Learning Activities Impact on Research Log & Evidence Summary Scores

- One-way MANOVA revealed T/L activities had a significant effect on research log scores (log components and total) among 3 groups ($\Lambda(16,34) = .060, p = .000$).
 - Follow up univariate ANOVAs indicated that total log scores were significantly improved ($F(2,24) = 31.578, p = .000$). Scores from specific components of the log (search results, keywords, limiters, reflection) also reflected a significant difference.
 - Tukey's *HSD* was used to determine the nature of differences among groups. Log scores for students in Spring 2012 who did not use the EBP worksheet were significantly lower than students in Fall 2012 and Spring 2013 who used the worksheet.
- One-way MANOVA revealed T/L activities had a significant effect on evidence summary scores (summary components and total) among 4 groups ($\Lambda(30,76.991) = .007, p = .000$).
 - Follow up univariate ANOVAs indicated that total evidence summary scores were significantly improved by the use of research logs ($F(3,35) = 14.116, p = .000$). Specific components of the evidence summary (PICOT, results, and levels of evidence) also reflected a significant difference.
 - Tukey's *HSD* was used to determine the nature of differences among groups. Evidence summary scores for students in Fall 2011 who did not use a research log were significantly lower than students in Spring 2012, Fall 2012, and Spring 2013 who used a research log.

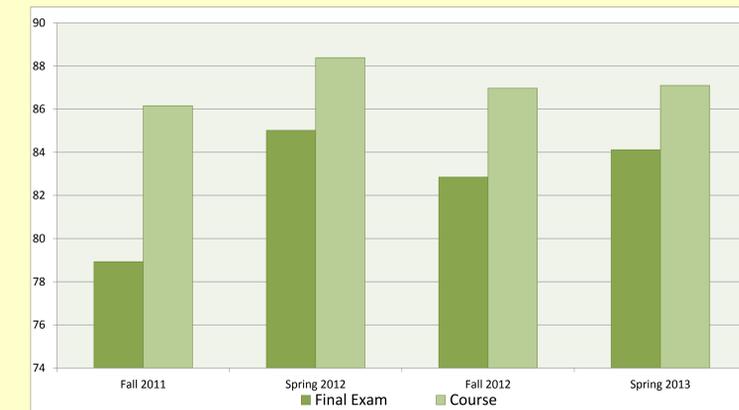
Figure 1: Research Log and Evidence Summary Score Means



Collaborative Teaching/Learning Activities Impact on Final Exam & Course Scores

- One-way MANOVA revealed T/L activities had a significant effect on final exam and course scores among 4 groups ($\Lambda(6,496) = .885, p = .000$).
 - Follow up univariate ANOVAs indicated that final exam scores were significantly improved by use of T/L activities ($F(3,249) = 6.566, p = .000$). Course scores were not significantly influenced.
 - Tukey's *HSD* was used to determine the nature of differences among groups. Final exams scores for students in Fall 2011 who were not exposed to T/L activities were significantly lower than students in Spring 2012, Fall 2012 and Spring 2013 who were exposed to T/L activities.

Figure 2: Final Exam and Course Score Means



Conclusions

- Collaborative teaching/learning activities significantly improved students' abilities to perform systematic searches and identify, analyze, and synthesize evidence as measured by research log and evidence summary scores.
- Although course scores for those exposed to collaborative teaching/learning activities were not significantly improved, comprehensive final exam scores, a focused measure of students' EBP knowledge, were significantly improved.

Recommendations

- Collaboration between nursing faculty and librarians promotes development of students' information literacy skills.
- Information literacy is foundational to the EBP process; time must be dedicated to establishing these skills.
- Information literacy skills should be introduced early in the nursing curriculum and reinforced in multiple courses.