

## **Exploring Innovative Pedagogical Practices for Implementing Evidence-Based Healthcare in an Online Registered Nurse (RN)-BS Nursing Capstone Course**

### **Project Objectives:**

1. Evaluate pedagogical practices use in the Capstone Course in Nursing.
2. Explore RN-BS graduate's EBP proposals developed in Capstone Course in Nursing with an emphasis on barriers, facilitators, and perceptions of self-efficacy for implementation in the clinical practice setting.
3. Disseminate findings to contribute to the existing knowledge for innovations in nursing education and EBP implementation through manuscript submissions and professional presentations.

### **Introduction**

The design and delivery of quality online courses is dependent on pedagogical theories and best evidence-based instructional practices. A pedagogical shift requires the course to evolve from the traditional lecture/teacher-centered format to being active/student-centered and hands-on (Bonk & Zhang, 2006; Dukes, Koorkland, & Scott, 2009) and that it demands more self-regulation (Cho, 2004)

We are now at the point to evaluate whether our pedagogical online teaching practices assisted in sustaining students' knowledge, skills, and self-efficacy perceptions learned in Capstone Course in Nursing. Results from data analysis of course evaluations and a research study on the identification of graduates' EBP project implementation and self-efficacy are presented. Conclusions and recommendations for educators to improve learning outcomes for online students are identified.

## **Background**

Since August 2011, Purdue University Calumet College of Nursing has offered a fully accredited online program to expand access for RN-BS students that can be completed in 15 months. Researchers in this study examined data collected after students graduated from the RN-BS program. Through survey self-report, data was collect from Capstone graduates related to course objectives, EBP implementation barriers and facilitators, and self-efficacy perceptions for EBP implementation.

The Capstone Course design was founded with attention to leaders in healthcare, leaders in policy and leaders in education—the experts. The course designers critically reviewed the calls for innovation and transformation in nursing education. These expert sources included the Institute of Medicine (IOM) *The Future of Nursing, Leading Change, Advancing Health* (IOM, 2001, 2003, 2010), the NLN Excellence Initiative (2006), *Quality and Safety Education for Nurses (QSEN)* (Cronenwett et al., 2007), the American Association of Colleges of Nursing (AACN) *Essentials* (2008), and *Eight Principles of Good Practice for All Experiential Learning Activities* from the National Society for Experiential Education (NSEE, 1998).

As an Experiential Learning (ExL) designated course we are continually striving to create real-world experiences for students in the online environment. Purdue University Calumet is a collaborating partner with Academic Partnerships (AP), a leader in online education. AP recognizes that the most rapidly developing trend in higher education is the utilization of technology for the delivery of instruction as a global phenomenon. AP provides comprehensive services for all online courses in the BS-RN program and expert support to ensure high quality customer service. Technical

assistance is readily available to faculty, coaches, and students when challenges arise with course delivery or assignment postings.

### **Pedagogical Theory and Principles of Evidence-Based Teaching**

Three pedagogical theories can be applied to the online learning environment. These include Constructivism, Experiential Learning Principles and Seven Principles of Good Practice in Undergraduate Education. Constructivism theory focuses on including a variety of learning perspectives through active learning and assessment. Constructivist models of learning are recommended as “best practices” for the design and delivery of online courses. The constructivist model places the instructor as the facilitator of learning who creates interactive educational experiences that support learners’ needs to actively construct personal meaning and knowledge based on new information and past knowledge (Bangert & Easterby, 2008).

Experiential Learning composed of Eight Principles of Good Practice for all experiential learning activities (NSEE, 1998). The aim of Experiential Learning is to select experiences based on real-world context. The eight principles of good practice: intention, preparedness and planning, authenticity, reflection, monitoring and continuous improvement, assessment and evaluation, acknowledgement

A meta-analysis (Chickering and Garnson, 1987) identified seven pedagogical principles for good practice in undergraduate education that can be applied to online teaching were identified. These good practices include:

1. Encouraging contact between students and faculty
2. Learning when to enhance the importance of cooperation among students.
3. Using active learning with structured activities, challenging discussion

dialogues, projects, and peer review.

4. Providing appropriate and timely feedback to benefit from courses.
5. Learning to use one's time on task
6. Communicating high expectations.
7. Providing a diverse delivery system and ways of learning

(Chickering and Gamson (1987))

The three pedagogical models are intertwined in the design and delivery of effective online courses. The researchers focused primarily on constructivist instructional practices, Experiential learning principles and application of the seven principles of Good Practice in Undergraduate Education teaching that were first published by Chickering and Gamson in 1987 and have been well researched and widely disseminated. On review of these theories and principles, we found many commonalities that were incorporated in Capstone Course Design. However, we made the decision to utilize the Chickering and Gamson Seven Principle of Good Practice for application to the online Capstone course. (Please see Table 1).

Along with adhering to pedagogical educational theories and principles, the capstone course emphasizes the importance of implementation of evidence-based practice and increased perceptions of self-efficacy for performance accomplishment. We felt that these two constructs were important to measure students' success in meeting course objectives and graduates' accomplishments in EBP clinical practice implementation. The following is a brief overview of these two constructs.

**Evidence-Based Practice.** Evidence-based practice (EBP) is a problem solving strategy and an approach to decision making in which the best available evidence from

research, clinical experience, patient preferences, and routine information is applied to improve patient outcomes (Kitson, Harvey, & McCormack, 1998). To achieve the Institute of Medicine's (IOM) goal that 90% of clinical decisions are evidence-based by 2020, online nursing programs are charged with accelerating the paradigm shift to include research application and EBP integration as essential competencies of graduates. Along with identifying individual and organizational barriers and facilitators to EBP implementation cited in the literature, designing innovative approaches that adhere to the pedagogical principles for good practice in undergraduate education is essential in the online learning environment.

Numerous EBP models exist but the basic components are consistent. Engaging in dialogue through cultivating a spirit of inquiry, that is, to consistently question current nursing practice, initiates the EBP process (Melnik & Fineout-Overholt, 2011). Once the spirit of inquiry has been initiated, a six-step EBP process begins. The steps include: (1) posing the clinical question in PICO format; (2) searching the literature for the best evidence to answer the clinical question; (3) critically appraising the literature and other available evidence; (4) integrating the best evidence with one's clinical expertise and patient preferences and values in making a practice decision or change based on evidence; (5) evaluating outcomes of the practice change based on evidence; and (6) disseminating the outcomes of the EBP decision or change (Melnik & Fineout-Overholt, 2011).

**Self-efficacy.** Self-efficacy was first introduced by Albert Bandura (1977, 1986) and is described as an individual's perception of his or her ability to successfully complete a task (Bandura, 1977, 1986). This component of social cognitive theory postulates that

an individual's behavior is determined through a continuous interactive process among cognitive, behavioral and emotional factors. Self-efficacy determines a person's capabilities to produce designated levels of performance that exercise control over life events. Individuals with positive self-efficacy approach difficult tasks as exciting challenges to be mastered rather than as threats to be avoided, thus contributing to personal accomplishments and a sense of personal well-being (Bandura, 1986

The basic premise underlying self-efficacy theory (Bandura 1977, 1986) is that expectations of personal mastery (efficacy expectations or self-efficacy) and success (outcome expectations) determine whether an individual will undertake a specific behavior. Efficacy expectations are derived from four sources of experiences: *performance accomplishments, vicarious experience, verbal persuasion, and physiological information* (Bandura, 1977, 1986, 1995, 1997). Consequently, we determined that self-efficacy is an important component for EBP project implementation and can be an outcome of measuring pedagogical constructs.

### **Capstone Course Design**

Capstone Course is designed as a 5-week 5-module course culminating in a complete EBP proposal paper submission. Since May, 2011 approximately 500 online Academic Partnership (AP) RN-BS students have completed NUR 49800 Capstone Course in Nursing. This course is the culminating nursing course in the Bachelor of Science curriculum. It is an experiential learning course designed to actively engage students in solving real-world quality/process improvement challenges in their health care work settings. The goal is to improve patient outcomes through EBP implementation.

**Course Outline.** Module one: Selection of EBP project, introduction, PICO (problem, intervention, comparison, outcome) discussions; Module two: Database search and critical appraisal of evidence (Evidence Table and narrative synthesis). Module three: Development of Implementation Plan (Timetable Blueprint with estimated start date, completion date and person responsible. Includes stakeholders, organizational fit, barriers to EBP implementation, facilitation strategies, resources needed), discussion forum. Module four: Plan for Evaluation (outcomes, measurement, time of collection, person responsible; Module 5: Dissemination (complete paper submission, PowerPoint, discussion forum.

### **Course Assignments**

- Module 1: Discussions (Introduction and sharing of EBP proposal)
- Module 1: Individual assignment (identification of EBP proposal and PICO(T))
- Module 1: Individual assignment: EBP Paper—Title page and introduction
- Module 2: Individual assignment: Literature review and appraisal of best available evidence
- Module 3: Group Discussion: EBP proposal progress
- Module 3: EBP Plan for Implementation
- Module 4: EBP Plan for Evaluation
- Module 5: EBP proposal via PowerPoint and discussion
- Module 5: EBP proposal final submission and Turnitin report
- Module 5: Reflective Self-Evaluation journal

An important feature of the Capstone Course was the development of an online accessible Library Guide that included numerous course resources to support student

success. Most notably, we have developed a specific EBP tab that has been used by students and faculty, locally and nationally. The feedback on the creation of this Library Guide has been very positive.

**Table 1.**

**Seven Principles of Good Practice and Application to Capstone Course**

(Chickering and Gamson (1987))

Principle	Example
<p><b>Good practice encourages student-faculty contact.</b></p>	<ul style="list-style-type: none"> <li>• Capstone Course information/Student responsibilities/Clinical Liaison/EBP Library Resources letter to students in course one of 15 month curriculum.</li> <li>• Welcome letter to each student from Instructors and Coach</li> <li>• Emails answered within 24 hrs.</li> <li>• Instructor presence in discussions and Q &amp; A</li> <li>• Technology Cruise and Course Management OIT for technology assistance</li> <li>• Self-introduction/first discussion/feedback from Coaches/Instructors</li> <li>• Peer support through discussions and Q &amp; A</li> <li>• Instructor presence on regular basis</li> </ul>
<p><b>Good practice encourages cooperation among students</b></p>	<ul style="list-style-type: none"> <li>• Group discussions</li> <li>• Students share where to locate resources, assist with student problem-solving, formatting issues, plagiarism/Turnitin issues</li> <li>• Students provide moral support</li> <li>• Good discussion communities</li> </ul>
<p><b>Good practice encourages active learning.</b></p>	<ul style="list-style-type: none"> <li>• Authentic real-world EBP questions from clinical practice</li> <li>• Engagement with Instructors,</li> </ul>

	<p>Coach, Clinical Liaison</p> <ul style="list-style-type: none"> <li>• Relevant assigned readings, PPT, Podcasts, Recourses</li> <li>• Generalization of concepts and skills for clinical practice</li> <li>• Reflective Journal assignment</li> </ul>
<b>Good practice gives appropriate and timely feedback.</b>	<ul style="list-style-type: none"> <li>• Course expectations clearly discussed in Syllabus and weekly Modules</li> <li>• Rubrics for grading</li> <li>• Emails answered within 24 hrs. assignments returned within 72 hrs.</li> <li>• Instructors/Coaches view course generally twice daily</li> <li>• Immediate plan for technology problems</li> </ul>
<b>Good practice emphasizes good time management skills for time on task.</b>	<ul style="list-style-type: none"> <li>• EBP proposal template</li> <li>• Specific written assignments with weekly timelines</li> <li>• Flexibility to work ahead at faster pace</li> <li>• Clear explanation of date/time of due assignment</li> <li>• Announcements from Coaches/Instructors as needed</li> <li>• Turnitin procedure/timeline</li> <li>• Sample papers/assignments</li> </ul>
<b>Good practice communicates high expectations.</b>	<ul style="list-style-type: none"> <li>• Rubrics for assignment expectations and discussions</li> <li>• Motivational podcasts</li> <li>• Template for professional EBP proposal dissemination</li> <li>• Promotes active learning for active engagement as change agent for EBP implementation in practice</li> <li>• Course objectives clear</li> <li>• Technology Cruise/Turnitin</li> </ul>
<b>Good practice respects diverse talents and a diverse delivery system.</b>	<ul style="list-style-type: none"> <li>• Students self-select EBP proposal based on clinical practice and setting</li> <li>• Reading assignments, mini-lecture podcasts, PowerPoint, Resources provide diverse delivery system.</li> </ul>

## Outcome Measurement

Two major outcome measurements were used to determine if our teaching strategies were successful in fostering student achievement of student knowledge and skill competencies in the Capstone course. First, at the completion of all NUR 49800 RN-BS courses held in 2013, students were asked to complete a course evaluation. This 25 item evaluation requested information about achievement of course objectives, knowledge of Evidence-based Practice (EBP), skill competencies in writing an EBP proposal, course design, and student satisfaction. The course evaluation was developed in Qualtrics (Qualtrics, Inc., Provo, UT), Web-based survey software). The course evaluation contains multiple forced choice questions and open-ended questions. For the purposes of the grant objectives, we used the 2013 course evaluations, which were completed by 360 students.

**Course Evaluation Results.** Over the spring, summer, and fall 2013 semesters, 360 students completed course evaluations. Of these students only 8% rated themselves as having “a lot of knowledge” about EBP and only 6% rated themselves as having “a great deal of knowledge” about preparing an EBP proposal before the course started. At the end of the course, 65% rated themselves as having “a lot of knowledge about EBP and 66% rated themselves as having “a great deal of knowledge” about preparing an EBP proposal.

The majority of students felt that they were prepared or very prepared and accomplished the course objectives:

- 93% were prepared or very prepared to engage in activities that promote the importance of nursing and professional nursing roles in creating change in healthcare environments.
- 92% were prepared or very prepared to design and evidence-based practice project that assists individuals, families, groups, or the community meets basic human needs and promote quality of life.
- 92% were prepared or very prepared to disseminate knowledge relevant to nursing in a complex health care environment
- 95% were prepared or very prepared to demonstrate accountability to the nursing code of ethics and legal standards of practice.

Similarly the majority of students (98%) felt that the course procedures and assignments supported the course objectives:

- 97% rated the amount of readings as at least appropriate.
- 99% rated the amount of writing or other class work as at least appropriate.

Overall, 82% rated the course as above average to excellent, with another 17% rated the course as “okay”.

Select Insights Gained from Student Comments:

- “I am capable of creating change for the patients optimal care”
- “That one person can really make a difference in quality patient care”
- “How to actually drive change at my workplace”
- “That I can make a difference and take a project from discovery to the finish line”
- “We are capable of bringing about big changes that can greatly benefit our patients”

- “After this course, I feel very prepared to compose and present a professional EBP project proposal”
- “How important EBP is and how shocked I was that I knew very little about it”.

Table 2 provides examples of teaching strategies and supporting student comments from the course evaluation. This data supports pedagogical teaching practices (Chickering and Gamson, 1987).

**Table 2. Supporting Evidence: Student Responses from Course Evaluation on Pedagogical Principles Applied to Capstone Course**

Principle	Example of Teaching Strategies	Supporting Student Comments
<p><b>Good practice encourages student-faculty contact.</b></p>	<ul style="list-style-type: none"> <li>• Capstone Course information/Student responsibilities/Clinical Liaison/ EBP Library Resources letter to students in course one of 15 month curriculum.</li> <li>• Welcome letter to each student from Instructors and Coach</li> <li>• Emails answered within 24 hrs.</li> <li>• Instructor presence in discussions and Q &amp; A</li> <li>• Technology Cruise and Course Management OIT for technology assistance</li> <li>• Self-introduction/first discussion/feedback from Coaches/Instructors</li> <li>• Peer support through discussions and Q &amp; A</li> <li>• Instructor presence on regular basis</li> </ul>	<ul style="list-style-type: none"> <li>• “Engagement of faculty via video lectures and printed lecture notes. It is nice to at least put a fact to the instructor name”</li> <li>• “Videos of instructor lectures made you feel connected to a classroom environment”</li> <li>• “They encouraged me that I can get through this. I enjoyed the motivational audios; they gave me that extra ump!”</li> <li>• “Instructors were very active in the discussion boards...this is much appreciated”</li> <li>• “Professionalism, enthusiasm, encouragement, support from faculty”</li> </ul>
<p><b>Good practice encourages cooperation among students</b></p>	<ul style="list-style-type: none"> <li>• Group discussions</li> <li>• Students share where to locate resources, assist with student problem-solving, formatting issues, plagiarism issues</li> <li>• Students provide moral support</li> <li>• Good discussion communities</li> </ul>	<ul style="list-style-type: none"> <li>• “Classmate discussions and feedback from peers”</li> <li>• “I enjoyed reading posts by other students”</li> <li>• “Sharing the PowerPoint project were interesting and provided knowledge in other areas of interest”</li> </ul>

<p><b>Good practice encourages active learning.</b></p>	<ul style="list-style-type: none"> <li>• Authentic real-world EBP questions from clinical practice</li> <li>• Engagement with Instructors, Coach, Clinical Liaison</li> <li>• Relevant assigned readings, PPT, Podcasts, Recourses</li> <li>• Generalization of concepts and skills for clinical practice</li> <li>• Reflective Journal assignment</li> </ul>	<ul style="list-style-type: none"> <li>• “Making an actual proposal was a great idea because that is something that many of us will be a part of at some point during our nursing career”</li> <li>• “The act of developing and EBP proposal helped to get me actively thinking of how to change my work environment and the knowledge to research and articulate that process in writing. Invaluable!”</li> <li>• “All the knowledge I have gained----excellent class”</li> <li>• “When I finished my proposal, I was so proud of myself. Especially since I seriously plan to encourage the implementation of my EBP proposal. This project really boost my professional experience”</li> </ul>
<p><b>Good practice gives appropriate and timely feedback.</b></p>	<ul style="list-style-type: none"> <li>• Course expectations clearly discussed in Syllabus and weekly Modules</li> <li>• Rubrics for grading</li> <li>• Emails answered within 24 hrs. assignments returned within 72 hrs.</li> <li>• Instructors/Coaches view course generally twice daily</li> <li>• Immediate plan for technology problems</li> </ul>	<ul style="list-style-type: none"> <li>• “Receiving feedback every week and opportunity to correct any mistakes”.</li> <li>• “Receiving feedback and allowing you to make corrections before submitting the end product”</li> <li>• “Feedback from the coaches and instructors, as well as having a clinical liaison give you constructive criticism where the EBP proposal may be implemented”</li> <li>• “Teachers and coaches were always available if needed and are very involved in this course”</li> <li>• “Feedback is great and quick”</li> <li>• “Timely manner in which emails from coaches were responded to”</li> </ul>
<p><b>Good practice emphasizes good time</b></p>	<ul style="list-style-type: none"> <li>• EBP proposal template</li> <li>• Specific written assignments with weekly timelines</li> </ul>	<ul style="list-style-type: none"> <li>• “The course syllabus followed a well-planned process to complete the paper”</li> <li>• “How the Instructors provided</li> </ul>

<b>management skills for time on task.</b>	<ul style="list-style-type: none"> <li>• Flexibility to work ahead at faster pace</li> <li>• Clear explanation of date/time of due assignment</li> <li>• Announcements from Coaches/Instructors as needed</li> <li>• Turnitin procedure/timeline</li> <li>• Sample papers/assignments</li> </ul>	<p>all the help with all the course documents and helpful hints”</p> <ul style="list-style-type: none"> <li>• “Progressive, step by step (module to module) building knowledge and skills in EBP. Each week builds on each other and increases your knowledge. I thought it was a very strategic and educational move to grade each section each week, so that we can learn by the suggestions we were given”</li> </ul>
<b>Good practice communicates high expectations.</b>	<ul style="list-style-type: none"> <li>• Rubrics for assignment expectations and discussions</li> <li>• Motivational podcasts</li> <li>• Template for professional EBP proposal dissemination</li> <li>• Promotes active learning for active engagement as change agent for EBP implementation in practice</li> <li>• Course objectives clear</li> <li>• Technology Cruise/Turnitin</li> </ul>	<ul style="list-style-type: none"> <li>• “The instructors gave adequate information as to what was expected from students to succeed in the course”</li> <li>• “We didn’t have to guess on the expectations or how to layout the content and could fully focus on developing the proposal”</li> <li>• “Clear guidelines and sample, and examples to follow. It helped me know what was expected of the students”</li> <li>• “Resources including the EBP paper proposal template and sample paper, and readings”</li> </ul>
<b>Good practice respects diverse talents and a diverse delivery system.</b>	<ul style="list-style-type: none"> <li>• Students self-select EBP proposal based on clinical practice and setting</li> <li>• Reading assignments, mini-lecture podcasts, PowerPoint, Resources provide diverse delivery system.</li> </ul>	<ul style="list-style-type: none"> <li>• “I enjoyed that we could pick our own project giving us the opportunity to pick something we are passionate about. It provided me a wealth of information which I can utilize in the future”</li> <li>• “The accomplishment you feel when you finish is amazing and gives you an important ending of your BS in Nursing”</li> </ul>

## Summary of Select Student Comments from Course Evaluation

"This was a great experience."

"I had to pull my books out again and review, review, review! I really appreciated the professionalism you all displayed as well as your encouraging words."

"Course strengths include reading content, video lectures, EBP template, examples, and organization of the course."

"I loved the podcasts and PowerPoint's. It helped a great deal with understanding the content."

"I think learning more about EBP and making an actual proposal was a great idea because that is something that many of us will be a part of at some point during our nursing career."

"The best feature of this course is the step-by-step growth of the EBP paper."

"Instructor enthusiasm was course strength."

"The course syllabus followed a well-planned process to complete the paper."

"Feeling accomplished."

"The strengths are the discussion boards and feedback from peers."

"The fact that the professors were available on the discussion boards for questions and respond promptly made me feel like they were just as engaged as I was."

"I have overcome my fear of research and in evaluating evidence. There were many best features of this course for me. I really am grateful for the entire course and felt it was all necessary to get me to the final project."

"How each week builds on each other and increases your knowledge. The accomplishment you feel when you finish is amazing and gives you an important ending to your BS in Nursing."

"Instructors and Academic Coach are very involved in the course. Feedback is great and quick."

"This course gave me a major insight and guided the development of an EBP proposal. The instructors were very knowledgeable and the presentations and lecture notes were easy to follow."

Second, a descriptive cross-sectional survey was sent to a convenience sample of Academic Partnership (AP) RN-BSN graduates with available emails post-graduation. Exempt status was approved by the Institutional Review Board at Purdue University. This sample included 452 BS-RN graduates who had completed the online program from August 2011 through May 2013. The survey was designed based on a review of EBP literature. The 31-item questionnaire consisted of demographic, individual and organizational barrier and facilitators, EBP proposal completion and/or initiation, engagement in EBP activities questions and perceptions of self-efficacy for EBP implementation. The questionnaire was developed utilizing Qualtrics (Qualtrics, Inc., Provo, UT), Web-based survey software.

Beginning in May 2013, an email invitation was sent to RN-BS graduates who completed the online program from August, 2011 through May, 2013. This invitation came from the College of Nursing and invited participation to participate in the research study. This email provided information about the project and co-investigators, stated that participation was voluntary, and assured recipients that all data would be aggregated to protect participant privacy. In addition, a link to the Qualtrics survey was provided. Four and nine weeks later, the School of Nursing sent two additional emails follow up reminders, which included the link to the Qualtrics survey. A total of 452 emails were sent, and 124 graduates responded to the survey, for a response rate of 27.43%. Approximately 55 emails were returned as undeliverable. Some respondents did not answer every survey question. Data analysis began in October 2013.

A 17-item *Evidence-Based Practice Self-Efficacy Scale* (Tucker, Olson, & Frusti, 2009) that received preliminary reliability and validity was approved for use by the

authors of the scale and was included in the RN-BS survey. This survey suggests promise for the scale as a measure of evidence-based practice self-efficacy and a target for process improvement, therefore with permission, the scale was a survey component.

Survey data demonstrated that 36% (n = 42) of respondents initiated implementation of the proposal; 31% (n = 36) reported that they would most likely implement their EBP proposal within the next few months; and 33% (n = 40) responded they were no longer interested in implementation. Of respondents who had implemented their EBP proposal (n = 78) 26% (n = 20) had 76% or more of the project implemented; 15% (n = 12) had completed 51-75%; 27% implemented (n = 21) 26-50% of the EBP proposal; and 32% (n = 25) completed 1-25% of proposal implementation.

Survey data on perceptions of self-efficacy (select questions) for EBP implementation is shown in Table 3.

**Table 3 Survey Results: Evidence-Based Nursing Practice Self-Efficacy Scale**  
(Tucker, Olson, & Frusti, 2009)

Question	Response	Percent
I am ____% confident I can complete an EBP project based on the knowledge and skills obtained in the online Capstone Course taken at Purdue University Calumet	(N = 110)	0-10% = 4% 11-20% = 1% 21-30% = 3% 41-50% = 5% 61-70% = 8% 71-80% = 16% 81-90% = 22% 91- 100% = 34%
I am ____% confident I can complete the following activities that support nursing practice:  Routinely ask questions about my practice  Locate resources in my department and institution to institute an EBP change  Locate and review published research studies that have relevance to nursing interventions important to my practice  Organize the necessary support and procedures to make a practice change based on evidence (research, clinical practice guidelines, clinical expertise, patient goals/preferences)  Routinely identify patient outcomes to target nursing interventions  Integrate the various sources of evidence and apply to my specialty population and practice  Activate the process to implement an EBP change  Routinely evaluate the effectiveness on nursing interventions using measurable outcomes	N = 102	Percentages reported: 80--100%  91%  72%  83%  71%  81%  81%  69%  82%

## Discussion/Implications

The online RN-BS Capstone Course survey results and course evaluation show that students were very positive with the course design and delivery, meeting course objectives, and with their for EBP implementation. Individual barriers and facilitators to EBP implementation perceptions of self-efficacy were identified but as new graduates become EBP champions and change agents, implementation may be a little easier.

The seven pedagogical principles of good practice were used in course design and delivery. What we have found from online teaching is the importance of the facilitator role. Research has highlighted the importance of the instructor as a facilitator and adheres to constructivism theory. The instructor moves beyond the role of teacher as “sage on the stage to guide on the side (King, 2003)”. The set of pedagogical facilitator skills include helping students collaborate with each other for personal understanding of course content, linking students to course resources, and encouraging student initiative to understand course content,

We share the following take-away's for online course design and delivery (See table 4)

**Table 4. Take-Aways” for Online Course Design and Delivery**

<ul style="list-style-type: none"> <li>• Designing and managing online courses is a time-intensive process but an extremely rewarding endeavor. Each offering should include attention to the course evaluation. Revision should be based on constructive feedback and attention to pedagogical theories and principles of good practice. Online courses must include the ability to foster f and a respect for diverse talents and ways of learning.</li> </ul>
<ul style="list-style-type: none"> <li>• Students, Coaches, and Instructors must have clear communication guidelines.</li> </ul>
<ul style="list-style-type: none"> <li>• Active engagement of the learner that promotes active learning is essential in online learning.</li> </ul>
<ul style="list-style-type: none"> <li>• Online learners benefit from clear instructions, rubrics for grading, and clearly posted deadlines and due dates.</li> </ul>
<ul style="list-style-type: none"> <li>• Online learners benefit from individual and group activities and collaborating with peers for problem-solving and motivational support.</li> </ul>
<ul style="list-style-type: none"> <li>• Feedback that is timely, relevant, and continuous promotes learning and course satisfaction.</li> </ul>

### **Conclusions**

This research study explored constructivism and the seven pedagogical principles of good practice in online learning. The principles were applied to Capstone Course in Nursing. Data was analyzed and results obtained contributed to teaching evidence-based healthcare to improve learning outcomes for the RN seeking a Bachelor of Science (BS) degree in Nursing. Contributions to the existing body of knowledge for online learning in a Capstone Course in Nursing and evidence-based practice (EBP) implementation were examined.

The shift in pedagogy to a more student-centered approach requires a change in the role of instructor who acts as the facilitator who designs activities for students to be challenged with real-world problems in practice. A fundamental difference for instructors

designing an online course is the need to “conceptualize” the course from the student’s perspective and think about how students can learn better in comparison to a teacher-led face-to face course.

To meet the needs of students, faculty must be challenged to adopt innovative pedagogical practices for online teaching and to evaluate the learning outcomes for the RN-BS student. We believe that work involved in this grant makes scientific and professional contributions to the existing EBP and education literature for the online student. The project contributed to the strategic educational initiatives developed between Academic Partnerships and Purdue University Calumet College of Nursing.

## References

- American Association of Colleges of Nursing. (2008). Essentials of baccalaureate education for professional nursing practice. Washington, DC: Author.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review*, 84, 191-215.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1995). *Self-efficacy in changing societies*. New York: Press Syndicate of the University of Cambridge.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman
- Bangert, A., & Easterby, L., (2008). Designing and delivering effective online nursing Courses with the *Evolve Electronic Classroom*. *Computers, Informatics, Nursing: 2008* (September-October), 54S-60S.
- Bonk, C., & Zhang, K. (2006). Introduction to the R2D2 model: Online learning for the diverse learners of this world. *Distance Education*, 27(2), 249-264.  
Doi:10.1080/01587910600789670.
- Chickering, A., & Gamson, Z, ( 1987). Seven principles for good practice in undergraduate education. Washington DC: Washington Center News.
- Cho, M. (2004, October). *The effects of design strategies for promoting students' self-regulated learning skills on students' self-regulation and achievement in online learning environments*. Paper presented at the 27<sup>th</sup> meeting of the Association for Educational Communications and Technology, Chicago, IL. Retrieved from <http://www.eric.ed.gov/PDFS/ED485062.pdf>

- Dukes III, L., Koorland M., & Scott, S. (2009). Making blended instruction better: Integrating universal design for instruction principles in course design and delivery. *Action in Teacher Education*, 31(1), 38-48.
- Institute of Medicine (2001). *Crossing the quality chasm: A new health system for the 21<sup>st</sup> Century*. Washington, DC: National Academy Press.
- Institute of Medicine (2003). *Health professions education: A bridge to quality*.  
[http://www.nap.edu/catalog.php?record\\_id=10681](http://www.nap.edu/catalog.php?record_id=10681).
- Institute of Medicine Press Release (2010). Retrieved from  
<http://www.iom.edu/Reports/2010/The-Future-of-Nursing-Leading-Change-Advancing-Health/Press-Release.aspx>.
- King, A. (1993). From sage on the stage to guide on the side. *College Teaching*. 41(1), 30-35.
- Kitson, A., Harvey, E., & McCormack, B. (1998). Enabling implementation of Evidence-based practice: A conceptual framework. *Quality in Health Care*, 7, 149-158.
- Melnyk B.M., Fineout-Overholt, E., Stillwell, S., Williamson, K. (2010, 2011). Evidence-based practice Step by Step. The seven steps of evidence-based practice. *American Journal of Nursing*. 2009, 2010, 2011(11,1,3,5,7,9,11,3,5,7,9).
- National League for Nursing Excellence Initiatives (2006). Retrieved from  
<http://www.nln.org/excellence/index.htm>
- National Society for Experiential Learning (NSEE). (1998). *About Us*. Retrieved from  
[http://www.nsee.org/about\\_us.htm](http://www.nsee.org/about_us.htm)

Quality and Safety Education for Nurses (QSEN). Learning Modules. (2011). Retrieved from <http://www.qsen.org/modules>