Educating Clinical Nurse Specialist Students at a Distance

Irene Gilliland, CNS, ACHPN, Jeanette McNeill, DrPH, RN, AOCNS, Kathy Goei, PhD, RN, Mary Elaine Jones, PhD, RN

University of the Incarnate Word, San Antonio, TX

Purpose/Objectives: To examine factors associated with student success in an online Adult Clinical Nurse Specialist education program.

Significance: Use of online technologies in nursing education, specifically in advanced education, has increased, however, few studies document predictors of success with students from diverse backgrounds.

Background/Rationale: Demographic changes continue to increase the need for APNs with skills in managing adult health, chronically ill and End Of Life patients. An online education program for Adult CNS preparation was federally funded in 2006 to recruit nurses from rural and diverse backgrounds. Confidence with online technology, learning style, personality type and demographic factors are known to affect student success. This paper describes preliminary findings related to characteristics and perceptions among four cohorts of students.

Description: Four instruments measured student characteristics, perceptions and satisfaction. The Index of Learning Styles (ILS) (Felder & Solomon, 2003); Online Technologies Self-Efficacy Scale (OTSES) (Miltiadou, 2001); the Myers-Briggs Type Indicator (Briggs & Briggs Myers, 1988); and a Student Satisfaction questionnaire. Demographic characteristics were gathered to describe the sample of students enrolled in an online Adult Health CNS program.

Outcome: The sample of 23 students had a mean age of 43; the majority were ethnically diverse, and had taken at least one other online course. Findings suggested a fairly high comfort level with online technology at entry; in terms of learning style, most students were concrete thinkers, practical, oriented toward facts and procedures (sensing) and were moderate to strong visual learners. Preliminary analysis of student satisfaction indicated students enrolled in online coursework for convenience and were highly satisfied with the program and online learning. The project retention rate is 91%, and six students have graduated.

Interpretation/Conclusion: Further study of larger samples and analysis of data examining learning styles, personality type and achievement may profile motivations of students seeking online programs and provide additional insight into strategies for success.

Implications for CNS basic and Continuing Education: Online coursework provides student friendly alternatives for CNS education. Knowledge of student characteristics associated with success and satisfaction can aide faculty to recruit, retain and graduate CNSs for the future.
Educating CNSs at a Distance

Irene Gilliland, RN, CNS, ACHPN
Jeanette McNeill, RN, DrPH, AOCNS
Background—APN education

- Idea for a ‘clinical nurse expert’ emerged in the 1940’s and 50’s
- 1943 NLN committee appointed to develop clinical post graduate courses
- 1960’s first specialist graduate program in Psychiatry at Rutgers
- 1969 NLN identified role components
- 1996 AACN *Essentials of Master’s Education for Advanced Practice Nursing*
- 1998 NACNS *The Statement on Clinical Nurse Specialist Practice and Education*
NACNS competencies

• Direct Care competency—Direct interaction with patients/families/communities to promote health and improve QOL
  – All CNS courses focus on this competency

• Consultant competency—Patient, staff, or system-focused interaction between professionals to engage in problem solving
  – CNS II and III particularly focus on this competency

NACNS, 2004
NACNS competencies (cont.)

• Systems leadership competency—*The ability to manage change and empower others to influence clinical practice and political processes*
  — CNS II and III in particular focus on this competency, also . . .

• Collaboration competency—*Working jointly with others to optimize clinical outcomes*
  — CNS II and III . . .

• Coaching competency—*Skillful guidance and teaching to advance the care of patients, families, communities and populations, and the profession of nursing*
  — Advanced Health Assessment, CNS I, II and III

NACNS, 2004
NACNS competencies (cont.)

• **Research competency**—*The work of thorough and systematic inquiry. Includes the search for, interpretation, and use of evidence in clinical practice and quality improvement*
  - Advanced Health Assessment; CNS I, II, III

• **Ethical decision making competency**—*Identifying, articulating, and taking action on ethical concerns at the patient, health care provider, community, system, and public policy levels.*
  - CNS I, II, III

NACNS, 2004
Considerations regarding online approaches to nursing education

- Confidence, self-efficacy and learning goal orientation (Miltiadou, 2003)
- Learning style (DeTure, 2004; Felder & Silverman, 2003)
- Personality type (Varvel, Adams, Pridie and Ulloa, 2004)
- Demographic factors (McNeal and Walker, 2006)
Challenges in distance education

**Pros**
- Flexibility of time, location
- Courses can be accessed from any computer at any time of day
- Student can set the pace for the learning
- Student can research discussion questions before making a response

**Cons**
- Technology divide – students/faculty (Prensky, 2001)
- Lack of 24/7 technological support
- Lack of face to face contact for students and faculty who require this for their learning
UIW is a Catholic, Hispanic serving institution. It is the largest Catholic University and the 4th largest private university in Texas. 

Mission includes both faith based education and service to the region, state, nation and world.
Purpose of grant and research project

• Purpose:
  – The project will enhance advanced nursing education and practice in Texas and the U.S. by preparing Adult CNSs using distance education strategies.
  – Graduates are prepared for disease management, end of life care, and program planning for chronically ill or disabled underserved, culturally diverse adult and elderly populations in primary, secondary, and tertiary settings in the target counties in TDSHSR 8.

• Rationale:
  – For area surrounding Bexar County, projected that 18% of population will be >65 (17% for Texas) n 2030.
  – Diabetes is the major health problem in these counties.
  – Eleven of the 13 contiguous counties to Bexar county designated as Medically Underserved Areas (MUA), Medically Underserved Populations (MUP) and/or Health Professional Shortage Areas (HPSA).

• Meeting the need
  – Although Bexar County has highest number of CNSs (213) in the region, only 14 CNSs in the 13 surrounding counties.
  – HRSA Division of Nursing guide for need for advanced practice at 10% of the registered nurse workforce
Healthy People 2010 Goals

• Increase life span of all citizens
• Eliminate disparities in health among US populations
• Achieve access to preventive services for all Americans

• In a needs assessment, San Antonio nurse leaders described the need for nurses with prescriptive authority who could provide individual care, particularly chronic illness care, BUT who could also identify health needs of aggregates and develop programs at the population level.
# HP 2010 objectives and CNS coursework

<table>
<thead>
<tr>
<th>HP 2010 objective or health indicator</th>
<th>Project objective</th>
<th>Activity</th>
<th>Course objective/outcome</th>
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<tbody>
<tr>
<td>1. Increase years of quality/healthy life</td>
<td>1, 5</td>
<td>Curriculum development and implementation</td>
<td>Adv Health Assessment, Adv Pharm, CNS 1, CNS 2, CNS 3</td>
</tr>
<tr>
<td>➢ Focus on chronic conditions</td>
<td></td>
<td>Via assignments, case studies</td>
<td>CNS 1, CNS 2</td>
</tr>
<tr>
<td>➢ Focus on elderly</td>
<td></td>
<td>As above—Laerdal simulations</td>
<td>Adv Health Assessment, CNS 1, CNS 2, CNS 3</td>
</tr>
<tr>
<td>2. Eliminate health disparities</td>
<td>5 (improve access)</td>
<td>Curriculum Development and implementation</td>
<td>CNS 1, 2, 3</td>
</tr>
<tr>
<td>➢ Improve access through education of APNs</td>
<td></td>
<td>Student placement in rural areas</td>
<td>CNS program</td>
</tr>
<tr>
<td>➢ Improve access to EOL and palliative care services</td>
<td></td>
<td>Emphasis on palliative and EOL care throughout course sequence</td>
<td>NUR 6399/Pharm 5278, Interdisciplinary Approaches to EOL and palliative care</td>
</tr>
<tr>
<td>➢ Improve patient safety, pt centered care, EBP, interdisciplinary care</td>
<td></td>
<td>Introduction of QSEN project, IOM position paper; opportunities for simulation in computerized and on site experiences</td>
<td>Adv Health Assess, CNS 1, 2, 3, Optional education role courses</td>
</tr>
</tbody>
</table>
# CNS Degree plan

<table>
<thead>
<tr>
<th>Date</th>
<th>Course</th>
<th>Credit Hours</th>
<th>Length</th>
<th>Course</th>
<th>Credit Hours</th>
<th>Length</th>
</tr>
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<tbody>
<tr>
<td><strong>Fall 08</strong></td>
<td>Aggregate I</td>
<td>3</td>
<td>16 weeks</td>
<td>Theory</td>
<td>3</td>
<td>8 weeks</td>
</tr>
<tr>
<td></td>
<td>Theory</td>
<td>3</td>
<td>8 weeks</td>
<td>Research I</td>
<td>3</td>
<td>8 weeks</td>
</tr>
<tr>
<td></td>
<td>Research I</td>
<td>3</td>
<td>8 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spring 09</strong></td>
<td>Advanced Assessment w/Lab</td>
<td>3</td>
<td>16 weeks</td>
<td>Research II</td>
<td>3</td>
<td>8 weeks</td>
</tr>
<tr>
<td></td>
<td>Pathophysiology</td>
<td>3</td>
<td>16 weeks</td>
<td>Advanced Assessment w/Lab</td>
<td>3</td>
<td>16 weeks</td>
</tr>
<tr>
<td></td>
<td>Research II</td>
<td>3</td>
<td>8 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Summer 09</strong></td>
<td>Pharmacology</td>
<td>3</td>
<td>10 weeks</td>
<td>Pharmacology</td>
<td>3</td>
<td>10 weeks</td>
</tr>
<tr>
<td></td>
<td>Finance</td>
<td>3</td>
<td>10 weeks</td>
<td>Finance</td>
<td>3</td>
<td>10 weeks</td>
</tr>
<tr>
<td><strong>Fall 09</strong></td>
<td>CNS I</td>
<td>5</td>
<td>16 weeks</td>
<td>Aggregate Health I</td>
<td>3</td>
<td>16 weeks</td>
</tr>
<tr>
<td></td>
<td>Informatics</td>
<td>2</td>
<td>8 weeks</td>
<td>Informatics</td>
<td>2</td>
<td>10 weeks</td>
</tr>
<tr>
<td><strong>Spring 10</strong></td>
<td>CNS II</td>
<td>4</td>
<td>16 weeks</td>
<td>Pathophysiology</td>
<td>3</td>
<td>16 weeks</td>
</tr>
<tr>
<td></td>
<td>Leadership/Health Policy</td>
<td>3</td>
<td>8 weeks</td>
<td>Leadership/Health Policy</td>
<td>3</td>
<td>8 weeks</td>
</tr>
<tr>
<td><strong>Summer 10</strong></td>
<td>CNS III</td>
<td>4</td>
<td>10 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fall 10</strong></td>
<td>CNS I</td>
<td>5</td>
<td>16 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spring 11</strong></td>
<td>CNS II</td>
<td>4</td>
<td>16 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Summer 11</strong></td>
<td>CNS III</td>
<td>4</td>
<td>10 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Hours:** 42

**Full-time:** 4 academic semesters + 2 summers

**Part-time:** 6 academic semesters + 2 summers
NACNS competencies and course content/assignments

• Direct care/coaching competencies
  – Throughout clinical sequence; episodics, case studies, examination; computer based simulations; educational projects; documentation via eLog (Typhon)

• Consultant/systems leadership/collaboration competencies
  – CNS II specifically; computer based simulations, practice; research abstract submission, QI project; eLog; product evaluation

• Research/ethical decision making
  – Research abstract; discussion, ethical dilemma paper
Purpose of study

• Purpose:
  – Overall purpose was to examine factors associated with student success in an online Adult Clinical Nurse Specialist education program

• Research Questions:
  – Describe the demographic characteristics, learning style, internet self-efficacy and personality type of clinical nursing specialist students enrolled in a distance education program;
  – Examine the relationships of learning style, personality type, internet self-efficacy and course performance (GPA), program completion, and certification in CNS students enrolled in a distance education program;
  – Evaluate predictors of student success in an online CNS educational program; and
  – Determine student satisfaction with the online CNS Program.
Methods

• Informed consent obtained at Orientation day to first clinical course (Adv Health Assess)
• Initially, student career services administered the Myers-Briggs and Online Self Efficacy (paper and pencil forms), directed the online Learning Styles Index, and debriefed in person
• Subsequently, the Myers-Briggs became available online, at no cost—students directed to complete all online
• Student satisfaction and feedback obtained after courses
Instruments

- *Index of Learning Styles (ILS)* (Felder & Silverman, 2003)
- *Online technologies Self-Efficacy Scale (OTSES)* (Miltiadou, 2001);
- *Myers-Briggs Type Indicator* (Briggs & Briggs Myers, 1988); and a
- *Student Satisfaction questionnaire*
- *Demographic characteristics*
Data analysis

• Data analysis included:
  – Descriptive statistics to describe the sample
  – Chi Square and Pearson correlational analysis
  – Regression analysis to predict outcomes
  – Repeated measures ANOVA
  – Cronbach’s Alpha to compute internal consistency reliability of OTSES and Student Satisfaction questionnaires
### Student descriptives

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Range</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>24 – 60 years</td>
<td>43.2 (9.8)</td>
</tr>
<tr>
<td>Years as an RN</td>
<td>1 - 31</td>
<td>11.6 (9.1)</td>
</tr>
<tr>
<td># Hours worked per week</td>
<td>20 - 80</td>
<td>41.5 (11.7)</td>
</tr>
<tr>
<td>Miles from home</td>
<td>5 - 162</td>
<td>30 (32)</td>
</tr>
<tr>
<td>Miles from work</td>
<td>5 - 50</td>
<td>18.5 (12.9)</td>
</tr>
<tr>
<td>Previous online courses</td>
<td>1 - 9</td>
<td>3.8 (2.4)</td>
</tr>
<tr>
<td>Initial OTSES</td>
<td>18 - 89</td>
<td>40.5 (22.9)</td>
</tr>
</tbody>
</table>
## Descriptives, cont.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>18</td>
<td>69%</td>
</tr>
<tr>
<td>Male</td>
<td>8</td>
<td>31%</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>16</td>
<td>62%</td>
</tr>
<tr>
<td>Single—(widowed, divorced, single)</td>
<td>9</td>
<td>34%</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>5</td>
<td>19%</td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>13</td>
<td>50%</td>
</tr>
<tr>
<td>AA</td>
<td>3</td>
<td>11.5%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>4</td>
<td>15.4%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>3.8%</td>
</tr>
<tr>
<td><strong>Number of dependents</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 - 1</td>
<td>8</td>
<td>30%</td>
</tr>
<tr>
<td>2 – 3</td>
<td>5</td>
<td>19%</td>
</tr>
<tr>
<td>3+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Learning styles inventory trends

- Scores on Index of Learning Styles Inventory (Feldman and Silverman, 2003) indicated that
  - Majority of students were concrete thinkers
  - Practice and oriented toward facts and procedures
  - Moderate to strong visual learners
  - Equal numbers preferred active vs reflective learning
Student satisfaction

• Preliminary analysis (50% of enrolled students at various places in the program) indicate:
  – Motivation to enroll in online related to convenience of working from home
  – Positive about online learning
  – Highly satisfied with the program
Program outcomes

- We are in year 3 of offering an online CNS program
- Progressive increase in enrollment from 2 in the first year to 10 currently planning to finish in August, 2010
- 50% of students come from minority backgrounds
- 75% of abstracts written have been accepted and presented at national conferences
Other issues

- Preceptor availability
- CNS role models
- Preceptors with the full scope of the role
- Preceptorships at a distance
Faculty issues and challenges

- Retraining needs for faculty to move to online education; education needs for new and experienced faculty
- Faculty time requirements for both start up and weekly maintenance
- Supervising students at a distance and negotiating contracts at a distance
- Communication with students without the benefit of nonverbal cues
- Recruitment of students and preceptors
- Keeping up with technology
- Meeting students’ support and socialization needs
Conclusions and further research

- Sample size is small; need more students to be able to generalize
- As students and faculty become more technologically savvy, will need to reassess challenges and opportunities
Implications for APN education

- APN education can be done online – APN can stay in own rural community
- Faculty may need to increase visits to those students who need some face to face time
- Faculty may need to plan some optional social activities to meet the needs of some students
References


Stein, D & Glazer, HR. (2003). Mentoring the adult learner in academic midlife at a distance education university. The American Journal of Distance Education 17, 1: 7-23.

Texas Board of Nurse Examiners.(2003). Currently licensed Texas RNs Recognized as Advanced Practice Nurses by County and Recognition Group. Austin, TX: Board of Nurses Examiners for Texas.