Development and Psychometric Testing of the Academic Clinical Nurse Educator Skill Acquisition Tool

Teresa Shellenbarger and Aaron M. Sebach

Abstract

AIM This article reports the development and psychometric testing of an instrument to measure academic clinical nurse educator skill acquisition.

BACKGROUND Little research explores clinical nurse educator competence.

METHOD Using the National League for Nursing Academic Clinical Nurse Educator core competencies and a literature review, newly created clinical nurse educator skill acquisition items underwent two rounds of content validity testing. The resulting 40-item Academic Clinical Nurse Educator Skill Acquisition Tool was pilot tested with a convenience sample of 133 clinical nurse educators.

RESULTS The Academic Clinical Nurse Educator Skill Acquisition Tool demonstrated adequate validity and internal consistency reliability. Factor analysis identified two factors: facilitating clinical learning through the use of effective teaching, assessment, and evaluation and promoting nursing enculturation.

CONCLUSION Further use of this tool may provide insight about the psychometrics, offer information about clinical teaching competence, and could lead to improved orientation and mentoring programs for clinical nurse educators.

KEY WORDS Clinical Competence – Clinical Nurse Educator – Nursing Faculty – Skill Acquisition

Clinical learning is a critical component of nursing education because it provides real-life opportunities for students to prepare for clinical practice roles (Oermann et al., 2018). Under the guidance of a clinical nurse educator, students are provided opportunities to translate theoretical content learned in the classroom into practice in the clinical setting. Individuals serving in these essential clinical educator roles are known by various titles, including clinical teacher, adjunct, part-time faculty, clinical instructor, or preceptor (Christensen & Simmons, 2019). Regardless of their title, educators teaching in the clinical setting are responsible for facilitating student learning and evaluating learners' performance throughout the nursing program's clinical components (National League for Nursing [NLN], 2021).

About the Authors *Teresa Shellenbarger, PhD, RN, CNE, CNEcl, ANEF, was distinguished university professor, Indiana University of Pennsylvania, Indiana, Pennsylvania, when research for this article was conducted. She is now executive director, National League for Nursing Commission for Nursing Education Accreditation. Aaron M. Sebach, PhD, DNP, MBA, AGACNP-BC, FNP-BC, CP-C, CLNC, CNE, CNEcl, SFHM, is associate professor and director of graduate nursing programs, Wilmington University, New Castle, Delaware. The authors acknowledge with thanks the content experts who reviewed the Academic Clinical Nurse Educator Skill Acquisition Tool and Dr. Kyle Johnson for his statistical analysis consultation. For more information, contact Dr. Shellenbarger at tshellenbarger@nln.org.*
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Nursing programs face numerous challenges with the recruitment, hiring, and retention of clinical nurse educators. Even though both the American Association of Colleges of Nursing (AACN) and the NLN reported that the number of faculty vacancies decreased during the last two years, more than 80 percent of schools still sought to hire new faculty (Li et al., 2019; Mazinga, 2020). Because of aging faculty and other socioeconomic trends, nursing education faces many faculty retirements. To further illustrate, the AACN predicts that roughly one third of nursing faculty currently employed in academia will retire in the next 10 years (Fang & Kesten, 2017), leaving significant and widespread vacancies. These predictions offer general estimations and do not delineate whether the anticipated retirements impact classroom or clinical faculty positions. Those exiting from academia will leave significant workforce gaps. Predicted vacancies, coupled with growing interest and enrollments in nursing programs, continue to drive the demand for clinical nurse educators.

Nursing programs have used various strategies to fill these critical educator positions, including hiring expert clinicians. However, although skilled in their clinical jobs, clinicians may lack formal training, resulting in insufficient preparation for the complex role they face as educators (Cooley & De Gagne, 2016). Even if an expert clinician holds an advanced degree, few nursing programs require formal preparation for the educator role. Regardless of employment status (full or part-time), clinical expertise alone is not adequate to meet the expectations of the role.

When clinical nurse educators are hired, they frequently receive limited guidance, support, and communication about their work and teaching expectations (Cooley & De Gagne, 2016; Grassley & Lambe, 2015; Wenner et al., 2020). As they navigate the transition from practice to academia, they are frequently unaware of the culture, language, rules, rituals, and expectations of the position (Cotter & Clukey, 2019; Kinneary & Sutton, 2021; Paul, 2015). Many expert clinicians experience a disconnect between faculty

expectations and reality. In addition, expert clinicians transitioning to the clinical educator role may encounter barriers because of lack of formal role preparation (Cooley & De Gagne, 2016; Grassley & Lambe, 2015; Stanley & Martin, 2021) and may feel uncertain, incompetent, disoriented, and confused and experience a lack of clarity (Wenner et al., 2020). Owen (2017) and Summers (2017) reported that educators feel frustration, stress, anxiety, and dissatisfaction, causing some to leave academic nursing entirely.

To ensure safe care in the clinical setting, clinical nurse educators need adequate preparation to effectively teach, assess learning, motivate students, and work with clinical agency personnel. They require support but may be reluctant to seek help or be afraid to ask questions because of lack of confidence and lack of knowledge of what they need. They may even be unsure of what questions to ask. Some may feel like imposters, concerned about their credibility being questioned (Cotter & Clukey, 2019).

An essential part of a successful transition calls for orientation and mentoring with ongoing feedback and support (Cotter & Clukey, 2019; Summers, 2017). Unfortunately, many nursing education programs do not have established mentoring programs, offer inconsistent guidance, or provide little support for new clinical educators. Few models for an effective transition to the clinical nurse educator role exist. Likewise, individual learning needs for clinical nurse educators may vary. Even when programs do have mentoring strategies in place, they may find that a one-size approach does not work for all. Lastly, no clear method is available for faculty to self-assess or for others to determine if a clinical nurse educator has the knowledge, skills, and attitudes needed for success.

BACKGROUND

In the early 2000s, the NLN identified the need to articulate a set of competencies that specified the knowledge, skills, and attitudes needed for the academic nurse educator role. Although helpful in guiding curriculum and program development and serving as a framework for nurse educator certification, these competencies focused on the full scope of the academic educator role. They were not specific for the clinical educator role, and some competencies and task statements were not regularly or consistently used by clinical nurse educators.

In 2015, the NLN identified this gap as well as the need to develop role competencies and related task statements that delineated the clinical nurse educator role as distinct from the academic nurse educator role. An NLN task group reviewed the available literature and feedback from the NLN community to finalize academic clinical nurse educator competencies and related task statements (Christensen & Simmons, 2019). This work has served to define the role and core attributes for clinical nurse educators, also functioning as a foundation for the NLN Academic Clinical Nurse Educator Certification (CNE®cl) exam. Achievement of this specialty certification distinguishes excellence in the role and the demonstration of this expert knowledge.

Faculty, particularly clinical educators new to these academic positions, probably function as novices or advanced beginners and have not advanced to a proficient or expert level as expected of those seeking certification. The Dreyfus and Dreyfus model of skill acquisition can help understand clinical nurse educator skill acquisition and serves as a framework for research in this area (Dreyfus & Dreyfus, 1980). In 2012, Ramsburg and Childress reported the development of the 40-item Nurse Educator Skill Acquisition Assessment Tool to assess academic nurse educator competence. This tool provides a helpful guide for assessing the full scope of the academic nurse educator role. Still, it does not adequately capture the unique aspects for clinical nurse educators, thus leaving a gap in available assessment tools. This article reports the development and psychometric properties of a newly created Academic Clinical Nurse Educator Skill Acquisition Tool (ACNESAT) designed to measure the attainment of the clinical nurse educator competencies.

METHOD
Tool Development

To address the need for a tool to assess clinical nurse educators, the researchers developed a pool of 64 clinical nurse educator competency statements. These items encompassed the six NLN CNEcl competency domains and aligned with Benner's novice to expert framework (Benner, 1982; NLN, 2021). These items were also derived from a review of the literature on clinical nursing education.

After an iterative review by the tool developers, competency statements were peer reviewed to confirm the CNEcl competency domain and skill acquisition level using the novice to expert framework. Three clinical nurse educator content experts were identified who had expertise as clinical nurse educators; one was certified as an academic nurse educator, and two had more than 20 years of teaching experience. These content experts reviewed the 64 competency statements for content validity, considered both content and wording of each statement, and evaluated each item for alignment with the CNEcl competency domain and skill level. Following the first round of content expert review, items identified by two or more experts as not reflecting the clinical nurse educator role were discarded. Other items were revised for grammar, ease of reading, and clarity.

A second round of 20 new clinical nurse educator competency statements was developed using a consistent development process as previously described. These were sent to the same content experts for review; the content experts again reported the CNEcl competency domain and skill acquisition level for each statement. Items not receiving at least two thirds agreement by the reviewers for either the competency domain or the skill acquisition framework were discarded. After two rounds of content expert review, competency statements were consolidated to 45 items across all six CNEcl competency domains and all skill levels, ranging from novice to expert.

Content Validity

The consolidated 45 items were sent to five clinical nurse educator experts to establish content validity. Lynn (1986) suggested that a minimum of five content experts are needed to control for chance agreement. The experts utilized a 4-point ordinal scale (1 = *irrelevant*, 4 = *extremely relevant*) to rate each item for clarity and representativeness of the clinical nurse educator role. A 4-point scale is recommended as opposed to an indecisive neutral or middle rating (Lynn, 1986). Experts further reported the CNEcl competencies they felt were best represented by each item. They also provided general feedback, offering wording revisions to some statements. Agreement between content experts was reviewed to determine item clarity.

Individual items were retained if they were scored 3 or 4 by four of the five reviewers, representing a content validity index (CVI) of 80 percent or higher. For item clarity of the clinical nurse educator role, three items with a CVI of less than 80 percent and two duplicate items were eliminated. The overall CVI for item clarity was 97 percent. For item representativeness, three items with a CVI of less than 80

percent were eliminated, and two duplicate items were eliminated. The overall CVI for item representativeness was 98.5 percent. Content validity was therefore established for both item clarity and item representativeness (Lynn, 1986). Following content validity analysis, the 40 remaining items comprising the final tool represented all six CNEcl competency domains and all levels of skill acquisition.

Pilot Testing

A descriptive study design was utilized to assess the psychometric properties of the ACNESAT. Institutional review board approval was obtained from Indiana University of Pennsylvania and Wilmington University before data collection. A convenience sample of academic clinical nurse educators was recruited through professional contacts. Inclusion criteria included full- or part-time employment as an academic clinical nurse educator, holding a master's degree or higher in nursing, and working at least one year in the clinical nurse educator role within the last five years. Part-time employment encompassed adjunct, temporary, and contractual positions. Professional colleagues were sent a recruitment email and asked to forward the email to others who met the inclusion criteria. Accordingly, the number of participants recruited is not able to be determined.

Participants accessed the Qualtrics© survey through an electronic link provided in the recruitment email. Data collection occurred over approximately six weeks. Upon accessing the link, an informed consent was displayed for potential participants to review. The consent described the voluntary nature of participation and the risks and benefits of the study. Study participants could withdraw from the study at any time and were informed about the anonymous nature of their responses.

Survey questions were displayed after participants provided informed consent. Participants rated their confidence with the 40 academic clinical nurse educator activities on the ACNESAT using a 5-point rating scale (1 = *not confident*, 5 = *extremely confident*). Nine demographic questions were included at the end of the survey. Once data collection was complete, the data set was downloaded, cleaned, checked for completeness, and analyzed in IBM® SPSS® Version 27.

RESULTS

The online survey was accessed by 161 individuals with an 83 percent completion rate. Incomplete entries from 28 individuals were removed, resulting in a final sample size of 133. Some participants responded to all clinical nurse educator questions but did not respond to all demographic questions. Their responses were included in the final analysis. As recommended by Kline (1994), a sample size of over 100 is adequate for this study (see Supplemental Content for demographic data, Table 1, available at http://links.lww.com/NEP/A342).

Participants were between the ages of 28 and 73 ($n = 132$, $M = 49.68$, $SD = 10.27$) and primarily female ($n = 122$, 92 percent). Experience as a clinical nurse educator ranged from 1 to 33 years ($n = 132$, $M = 10.61$, $SD = 7.01$). Approximately two thirds were prepared at the master's level ($n = 83$, 62 percent), and more than half of participants ($n = 79$, 59 percent) were employed full time as clinical nurse educators. Participants primarily held the rank of instructor/lecturer ($n = 63$, 47 percent); 36 (27 percent) held the rank of assistant professor or assistant clinical professor. An overwhelming majority of participants did not hold certification as an academic nurse educator (CNE; $n = 118$, 89 percent) or academic clinical nurse educator (CNEcl; $n = 130$, 98 percent).

Participants ranked the 40 items on the ACNESAT using a 5-point Likert scale. Ratings for each item were added to arrive at a total score. Total scores can range from 40 to 200, with 40 representing not confident, 41–80 representing low level of confidence, 81–120 representing moderate confidence, 121–160 representing high level of confidence, and 161–200 representing extremely confident. Participants reported that they were extremely confident ($M = 170$, $SD = 28.2$) with the 40 academic clinical nurse educator activities. Participants reported the highest level of confidence with the item "models ethical behavior in the clinical learning environment" ($M = 4.58$, $SD = 0.553$) and the lowest level of confidence with "leads interprofessional teams in the clinical learning environment" ($M = 3.85$, $SD = 0.925$).

Factor Analysis

A principal component analysis (PCA) was run using IBM® SPSS Version 27 on the 40-item ACNESAT with 133 academic clinical nurse educators. The suitability of PCA was assessed before analysis. Inspection of the correlation matrix demonstrated that all variables had at least one correlation coefficient of >.3. The overall Kaiser–Meyer–Olkin measure was .939, with individual Kaiser–Meyer–Olkin measures all >.7, both above the acceptable limit of .5 (Kaiser, 1974). Bartlett's test of sphericity was statistically significant ($p < .0005$), indicating the data were likely factorizable (Laerd Statistics, 2015).

An initial analysis was run to obtain eigenvalues for each factor. (An eigenvalue, a measure of the variance accounted for by a component in PCA, allows for the reduction of linear operations into separate and more simple structures.) Six components had eigenvalues of >1, which explained 68 percent of the variance. These components explained 51.09 percent, 4.28 percent, 3.8 percent, 3.6 percent, 2.76 percent, and 2.68 percent of the variance, respectively. However, the scree plot showed an inflection that justified retaining only two components (Cattell, 1966). Therefore, after exploring multiple analyses, because of correlated components resulting in complex structure rather than simple structure, two factors were retained.

The two-component solution explained 55 percent of the total variance. A direct oblimin oblique rotation was employed to aid interpretability for correlated factors (DeVellis, 2017). The data interpretation was consistent with the confidence attributes the questionnaire was designed to measure with strong loadings of "facilitating clinical learning through the use of effective teaching, assessment, and evaluation" on 23 items in Component 1 and "promoting nursing enculturation" for 17 items in Component 2. (Component loadings and communalities of the rotated solution are presented in Supplemental Content as Table 2, available at http://links.lww.com/NEP/A343.)

Reliability of the 40-item ACNESAT was assessed. The overall ACNESAT instrument demonstrated a high-level internal consistency reliability ($\alpha = .975$), as did both Component 1 ($\alpha = .965$) and Component 2 ($\alpha = .934$). According to Pallant (2016), a Cronbach's alpha of >.70 represents good internal consistency and reliability.

DISCUSSION

The study described the development and psychometric testing of a newly developed instrument, the ACNESAT. Reliability tests demonstrated good internal consistency of the tool. Factor analysis revealed two domains, "facilitating clinical learning through the use of effective teaching, assessment, and evaluation" and "promoting nursing enculturation." The ACNESAT provides a new tool that academics can use to assess clinical nurse educators' skill acquisition.

Clinical nurse educators can use this tool for self-assessment to identify areas needing further development. The ACNESAT may also provide valuable information to guide the development of individualized orientation and mentoring programs. Individualized orientation and mentoring programs are needed for clinicians transitioning to faculty roles (Cangelosi, 2014; Gardener, 2014; Mann & De Gagne, 2017), as some faculty may be ill-prepared for the demands, responsibilities, and challenges of clinical teaching. Mentors can work with clinical nurse educators to identify and address knowledge gaps.

The first factor provides insight into effective teaching, assessment, and evaluation of clinical nurse educators. The skills, attitudes, and knowledge associated with this factor comprise essential competencies inherent to the clinical nurse educator role. Clinical nurse educators must embrace student-centered teaching strategies and evidence-based assessment and evaluation methods. These essential skills are necessary to ensure that students in the clinical setting are providing safe and effective care, aligned with course and program outcomes. The second factor, promoting nursing enculturation, addresses the unique culture found in clinical nursing education. Articulating the specific cultural nuances of the role may help faculty learn about the rules, rituals, languages, and beliefs of academia and clinical teaching that may not be typically conveyed. Prior research suggests that many nurse educators learn about the culture through trial and error or watching and learning about the subtle, unwritten, and implicit rules found in higher education (Cotter & Clukey, 2019). Therefore, using the ACNESAT may provide educators with ideas about the questions to ask to get the support they need (Cotter & Clukey, 2019).

The ACNESAT offers future researchers a wide array of other potential study areas. Gathering data from diverse groups will further contribute to fully understanding this topic. Conducting studies involving participants from different geographic regions, types of programs, and representing various demographic characteristics can help enhance knowledge about the skill acquisition for this role.

LIMITATIONS

Limitations of the study must be considered. Because the sample consisted of primarily white females, the findings may not represent all clinical nurse educators. The use of a convenience sample is another limitation. Pilot testing of the ACNESAT occurred during the COVID-19 pandemic, which may have influenced clinical nurse educator participation. In addition, individuals choosing to participate may not adequately represent all clinical nurse educators. As with all self-reported surveys, the nature of self-reported competency assessment raises concerns, leaving users unsure if the tool accurately reflects reality in clinical nursing education. Future studies using a larger and more diverse sample are needed.

CONCLUSION

Clinical teaching remains an integral part of nursing education and the preparation of the future nursing workforce. Developing the competence of faculty in this role is critical for educators. This newly developed ACNESAT instrument may offer the potential to identify faculty development needs and drive orientation and mentoring programs.

REFERENCES

Benner, P. (1982). From novice to expert. *American Journal of Nursing*, *82*(3), 402-407. 10.2307/3462928

Cangelosi, P. R. (2014). Novice nurse faculty: In search of a mentor. *Nursing Education Perspectives*, *35*(5), 327-329. 10.5480/13-1224

Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research*, *1*(2), 245-276.

Christensen, L., & Simmons, L. E. (2019). The academic clinical nurse educator. *Nursing Education Perspectives*, *40*(3), 196. 10.1097/01.NEP.0000000000000509

Cooley, S. S., & De Gagne, J. C. (2016). Transformative experience: Developing competence in novice nursing faculty. *Journal of Nursing Education*, *55*(2), 96-100. 10.3928/01484834-20160114-07

Cotter, K. D., & Clukey, L. (2019). "Sink or swim": An ethnographic study of nurse educators in academic culture. *Nursing Education Perspectives*, *40*(3), 139-143. 10.1097/01.NEP.0000000000000434

DeVellis, R. F. (2017). *Scale development: Theory and applications* (4th ed.). Sage.

Dreyfus, S. E., & Dreyfus, H. L. (1980). *A five-stage model of the mental activities involved in directed skill acquisition*. https://apps.dtic.mil/sti/citations/ADA084551

Fang, D., & Kesten, K. (2017). Retirements and succession of nursing faculty in 2016-2025. *Nursing Outlook*, *65*(5), 633-642. 10.1016/j.outlook.2017.03.003

Gardener, S. S. (2014). From learning to teach to teaching effectiveness: Nurse educators describe their experiences. *Nursing Education Perspectives*, *35*(2), 106-111. 10.5480/12-821.1

Grassley, J. S., & Lambe, A. (2015). Easing the transition from clinician to nurse educator: An integrative literature review. *Journal of Nursing Education*, *54*(7), 361-366. 10.3928/01484834-20150617-01

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, *39*, 32-36. 10.1007/BF02291575

Kinneary, P., & Sutton, E. (2021). Using the CNE as an innovative strategy to support junior nursing faculty transitioning from clinical practice. *Nursing Education Perspectives*, *42*(6), E83-E85. 10.1097/01.NEP.0000000000000686

Kline, P. (1994). *An easy guide to factor analysis*. Routledge.

Laerd Statistics. (2015). *Statistical tutorials and software guides*. https://statistics.laerd.com

Li, Y., Turinetti, M., & Fang, D. (2019). *AACN special survey on vacant faculty positions for academic year 2020–2021*. https://www.nln.org/certification/Certification-for-Nurse-Educators/cne-cl

Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing Research*, *35*(6), 382-385.

Mann, C., & De Gagne, J. C. (2017). Experience of novice clinical adjunct faculty: A qualitative study. *Journal of Continuing Education in Nursing*, *48*(4), 167-174. 10.3928/00220124-20170321-07

Mazinga, G. (2020). NLN faculty census survey of schools of nursing academic year 2018–2019: Executive summary. *Nursing Education Perspectives*, *41*(6), 388. 10.1097/01.NEP.0000000000000748

National League for Nursing. (2021). *Certified academic clinical nurse educator*. https://www.nln.org/certification/Certification-for-Nurse-Educators/cne-cl

Oermann, M. H., Shellenbarger, T., & Gaberson, K. B. (2018). *Clinical teaching strategies in nursing*. Springer.

Owen, R. A. (2017). Part-time nursing faculty perceptions of their learning needs during their role transition experiences. *Teaching and Learning in Nursing*, *12*(2017), 12-16. 10.1016/j.teln.2016.10.002

Pallant, J. (2016). *SPSS survival manual* (6th ed.). McGraw Hill.

Paul, P. A. (2015). Transition from novice adjunct to experienced associate degree nurse educator: A comparative qualitative approach. *Teaching and Learning in Nursing*, *10*(1), 3-11.

Ramsburg, L., & Childress, R. (2012). An initial investigation of the applicability of the Dreyfus skill acquisition model to the professional development of nurse educators. *Nursing Education Perspectives*, *33*(5), 312-316.

Stanley, M. J., & Martin, C. (2021). Guiding elements for success in the nurse educator role. *Nursing Education Perspectives*, *42*(6), E86-E88. 10.1097/01.NEP.0000000000000741

Summers, J. A. (2017). Developing competencies in the novice nurse educator: An integrative review. *Teaching and Learning in Nursing*, *12*(2017), 263-270. 10.1016/j.teln.2017.05.001

Wenner, T. A., Hakim, A. C., & Schoening, A. M. (2020). The work-role transition of part-time clinical faculty: Seeking to validate the nurse educator transition model. *Nurse Educator*, *45*(2), 102-105. 10.1097/NNE.0000000000000704

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