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Improving certified registered nurse anesthetists' preparedness and intention to serve on boards.

Jana Bailey
University of Louisville, CrnasOnBoards@gmail.com

Improving Certified Registered Nurse Anesthetists' Preparedness and Intention to Serve on Boards

by

Jana Bailey

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Dr. Mary DeLetter	October 15, 2024
DNP Project Chair	Date
Dr. Amy Higdon	October 15, 2024
DNP Project Committee Member	Date
Dr. Sara Robertson	October 15, 2024
Associate Dean DNP and APRN Programs	Date

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Abstract

Background: The project was driven by expressed interest in serving on boards by 171 Certified Registered Nurse Anesthetists (CRNAs), expressed lack of preparation, and nurses on boards (NOB) literature recommendations to improve preparation through professional development.

Purpose: To implement a NOB preparation microlearning program for CRNAs who desire to serve on boards but feel unprepared to do so, improve CRNA participants' preparedness and intention to serve on boards, evaluate application of NOB learning, and offer continuing education credit.

Methods: A pre-test/post-test design was used to evaluate preparedness (Sundean Healthcare Index for Preparation in Board Competency [SHIP-BC©]; Sundean, 2017), intention to serve on boards (CPD Reaction Questionnaire©; Légaré et al., 2014), and program effectiveness (learner assessment program evaluation; American Association of Nurse Anesthesiology [AANA], n.d.).

Intervention: Nurses on Boards Preparation Microlearning Program for CRNAs

Results: Paired samples t-tests for program completers (n = 17) mean scores showed no significant improvement in preparation, and significant improvement in only the Social Influence construct of intention to serve on boards $t(16) = 2.41$, $p = .01$. However, the Social Influence subscale did not demonstrate internal consistency in this sample (Cronbach's alpha = 0.33), so cannot be deemed reliable in measuring changes. Program effectiveness and modules quality were rated as good or excellent by all respondents.

Discussion: Because the sample was small and most participants had high pre-test scores, it was not possible to demonstrate a significant impact of the educational intervention. This on-demand program will continue to be available to interested CRNAs.

Keywords: nurses on boards, microlearning, CRNA, preparedness, intention

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Improving Certified Registered Nurse Anesthetists' Preparedness and Intention to Serve on Boards

Data collected by the American Association of Nurse Anesthesiology (AANA) indicated that Certified Registered Nurse Anesthetists (CRNAs) wanted to serve on boards, especially in positions not historically held by nurses, and CRNAs were interested in many types of boards, including nonprofit, corporate, government, advisory, and governance boards. However, CRNAs expressed a lack of preparation, and no professional development programs specifically for CRNAs existed. At the time of project intervention, the Nurses on Boards Coalition (NOBC) had registered 82 CRNAs who served on boards and 171 who expressed a desire to serve (NOBC, 2024). As an AANA representative on the NOBC board, the project leader receives questions from CRNAs about preparing for board service and finding board opportunities. Those questions come from CRNAs who are already serving on boards, as well as those who had no experience.

Background

The nurses on boards (NOB) initiative began when the first Institute of Medicine (IOM) report authors acknowledged that if the healthcare system were to be transformed, nurses would need to be present at every level where decisions occur, including board rooms (IOM, 2011). The authors laid the foundation for the formation of the NOBC in 2014, in which leaders of 19 national nursing organizations, including the AANA, strategized ways to increase the number of nurses on boards (Campaign for Action, 2014). *The Future of Nursing* 2021 report anticipates nurses transforming the healthcare system in the next ten years by bringing the nursing perspective to policymaking while advocating for health equity and social change when serving on boards (National Academies of Sciences, Engineering, and Medicine, 2021).

Research examining the impact of NOB included the perspective of both nurses serving on boards and of board members who serve with nurses (Sundean, O'Lynn et al., 2022; Sundean et al., 2023). The literature indicated that nurses brought healthcare experience and system knowledge, and nurses impacted board function and deliberation because of their expertise in strategy, credibility, respect, collaboration, and communication. It was specifically noted that nurses were skilled at centering board work on persons, employees, or communities rather than just processes (Sundean, O'Lynn et al.; Sundean et al.).

Many investigators agreed that nurses' knowledge, skills, and perspectives prepared them well to serve on boards (Sundean et al., 2018; Sundean, O'Lynn et al., 2022). Even so, some nurses acknowledged they still had knowledge gaps related to financial expertise, strategic planning, and political savvy (Brewington, 2021). This understanding led to the recommendations to increase nurses' preparation for board service through professional development or other measures (McBride, 2017; Park et al., 2021; Polansky et al., 2017; Scott et al., 2020; Sundean et al., 2017; Sundean et al., 2019; Sundean & Gatiba, 2022).

Professional development broadly encompasses formal or informal continuing education (CE), where learners obtain and apply knowledge that may benefit their professional practice (Mlambo et al., 2021). Because a NOB preparation professional development program for CRNAs did not exist, the AANA Senior Director of Education and Practice requested a program in a microlearning format that could encourage more CRNAs to serve on boards (B. Morgan, personal communication, September 24, 2021).

Literature Review

The project leader conducted a literature search using the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) 2020 updated guidelines for systematic

reviews (Page et al., 2021; Rethlefsen et al., 2023). The project leader conducted searches in September 2021 and September 2023 using CINAHL, PubMed, MEDLINE, and ERIC databases, MeSH terms, and truncation for three search topics, which produced 403,543 records: (a) NOB, (b) nurses, CRNAs, healthcare leaders, or leadership, and professional development or leadership preparation, and (c) microlearning. Scholarly limiters (five-year, adult, and human application) were applied, leaving 10,290 records. Titles and abstracts were screened, with 91 articles retrieved after removing 30 duplicates. Of these, 71 were excluded based on setting (workplace, i.e., managerial or administration, or non-professional development, i.e., orientation programs), program length (programs whose lengths were more than available time for this project intervention, i.e., coaching or mentoring), or no relevance to preparation, implementation, or evaluation of NOB, leadership or nursing leadership, or microlearning. This process resulted in six NOB preparation, six nursing professional development and/or leadership, and eight microlearning articles.

The project leader used the John Hopkins-Research Evidence Appraisal (JHREA) tool (Dang et al., 2022) to evaluate the 20 articles. JHREA evidence levels can range from I-III (research evidence) to IV-V (non-research evidence), and quality ratings are either A (high quality), B (good quality), or C (low quality or major flaws; Dang et al.). The NOB articles were evidence level V with quality ranking A (Sundean & Gatiba, 2022), B (Clevland & Harper, 2020; Mullinix & Walton, 2018; Park, 2021; Roberts, 2018), and C (Scott et al., 2020). The professional development or leadership articles were II-A (Cummings et al., 2020; Lacerenza et al., 2017), III-A (Ayeleke et al., 2019; Mlambo et al., 2021), V-A (Allen et al., 2019), and V-C (Salemo & Fitzpatrick, 2023). Microlearning articles were II-A (Ichiuji et al., 2021; Lee, 2023;

Tudor Car et al., 2018), III-B (Jahnke et al., 2020), V-A (De Gagne et al., 2019; Taylor & Hung, 2022), V-B (Sankaranarayanan et al., 2023), and V-C (Zhang & West, 2020).

Problem

NOB Preparation

NOB literature uses the terms NOB preparedness and readiness synonymously. This project proposal used the term "preparedness." While research supporting the impact and rationale of NOB (Sundean et al., 2018; Sundean, O'Lynn et al., 2022; Sundean et al., 2023) continues to emerge, several authors noted that research evidence has been absent in published literature for NOB preparation since 1988 (Sundean et al., 2017; Sundean & Gatiba, 2022). Literature on NOB preparation was limited to non-research evidence, which included evidence-based project reports (Park, 2021; Scott et al., 2020), expert opinion guides (Cleveland & Harper, 2020; Mullinix & Walton, 2018), a continuing nurse education module whose credit opportunity expired in 2020 (Roberts, 2018), and a scoping review (Sundean & Gatiba).

Park et al. (2021) used a component of a nonprofit board education certificate program as NOB preparation for the nonprofit board match project. Scott et al. (2020) conducted two training programs using their designed evidence-influenced education training model. The scoping review acknowledged board preparation resources in the NOBC website resource repository, such as a video preparation series and Mullinix & Walton's practical guide for joining a board are available (Sundean & Gatiba, 2022). A review of the NOBC website repository indicated 142 items ranging from scholarly research articles and expert opinion articles to podcasts/blogs, videos/webinars, and useful links (NOBC, n.d.) with 25 relevant to NOB preparation, none in microlearning format, and only 12 accessible due to broken links.

Intervention

Professional Development and Microlearning

This literature review focused on two aspects of nursing and leadership: (a) professional development, and (b) design elements linked to strong behavior changes. Those aspects were compared to microlearning approaches supporting those professional development design elements. Microlearning, by design, provides short supplemental education opportunities for non-degree-seeking and busy healthcare professionals who have limited time commitment (Sankaranarayanan et al., 2023; Taylor & Hung, 2022; Tudor Car et al., 2018).

The microlearning literature used various terms to refer to the individual module units that comprise the collective program or series. For this project, a microlearning module was defined as a singular learning unit consisting of one learning objective, and a microlearning program was the collective grouping of microlearning modules.

The Kirkpatrick model of program evaluation (Levels: 1-Reaction, 2-Learning, 3-Transfer, and 4-Results or Outcomes) (Allen et al., 2022) has been commonly used to measure professional development training impact (Ayeleke et al., 2019; Cummings et al., 2020; Lacerenza et al., 2017). Level 3, Transfer, is also Behavior and encompasses the application of learning and anticipated behavior changes (Allen et al.). For this project, the term behavior or behavior changes was used.

Targeted Approach. While leadership training programs improved learning, with the strongest effect on behavior changes (Cohen's *d* corrected = .82, 95% CI [.64, .89]) (Lacerenza et al., 2017) and overall effectiveness (Cohen's *d* corrected = .76, 95% CI [.64, .89]) (Lacerenza et al.), programs that used a targeted approach such as those based on needs assessments or programs designed to meet the target audiences' needs, were highly recommended (Ayeleke et

al., 2019; Lacerenza et al.). Programs based on outcomes of needs assessments had significantly stronger effects on learning and behavior ($t = 2.57$, $p < .05$, $t = 6.14$, $p < .05$, respectively) (Lacerenza et al.) than those without a needs basis. Cummings et al. (2020) noted that a program's effectiveness was influenced most by a targeted approach rather than program length or delivery method. In the microlearning approach, the presenter targets and extracts crucial content components to develop multiple narrowly focused, concise, or concentrated modules that can stand alone and be completed in any order yet support each other as a unit (De Gagne et al., 2019; Zhang & West, 2020). Zhang & West recommended avoiding including too much information on a topic in one module session but instead developing the number of modules necessary to cover the topic optimally.

Session and Program Length. Short professional development programs led to significant behavior change ($t = 2.28$, $p < .05$) and improved outcomes ($t = 5.26$, $p < .05$) over single, longer programs (Lacerenza et al., 2017). Microlearning is short sessions whose ideal length is generally recognized as 5-15 minutes yet can range from as little as 15-90 seconds up to 20 minutes (De Gagne et al., 2019; Ichiuji et al., 2021; Jahnke et al., 2020; Lee, 2023; Taylor & Hung, 2022; Zhang & West, 2020).

Multiple Approaches. In professional development, multiple education approaches produce better behavior change and better outcomes (Ayeleke et al., 2019) than a single approach. Microlearning has multiple delivery format options and often includes graphics, short videos, and assessments (Jahnke et al., 2020; Sankaranarayanan et al., 2023; Taylor & Hung, 2022; Zhang & West, 2020). Experts recommended that assessments provide instant feedback during and/or after the sessions (Jahnke et al.; Zhang & West). For this reason, open-ended

knowledge assessment questions should be avoided if immediate feedback is not possible (Jahnke et al.).

Access. Although investigators noted no differences in learning behavior or outcomes of online virtual programs compared to face-to-face programs (Lacerenza et al., 2017), they did find that voluntary programs had more significant behavior change ($t = 6.26$, $p < .05$) than mandated programs. Participants also had a greater motivation to learn when professional development programs were easy to access (Mlambo et al., 2021). Microlearning sessions placed on platforms easily accessed by participants on their devices of choice were recommended for easy access (De Gagne et al., 2019; Jahnke et al., 2020; Tudor Car et al., 2018).

Summary

Professional development programs that lead to the greatest learning and behavior changes were targeted, voluntary, and designed with short sessions and multiple approaches. This CRNA NOB preparation project was based on a needs assessment that was voluntary, with short (2-6 minutes) microlearning modules that were easily accessed, stood-alone, and able to be completed in any order. Knowledge assessments provided participants with immediate feedback to validate learning or to identify areas needing improvement (Jahnke et al., 2020; Zhang & West, 2020).

Rationale

Needs Assessment

The NOB discussion with the AANA Senior Director of Education and Practice resulted in recommendations for a NOB preparation program for CRNAs provided in microlearning format (B. Morgan, personal communication, September 24, 2021). Subsequently, the project leader conducted a needs assessment from September through October 2021 with CRNA

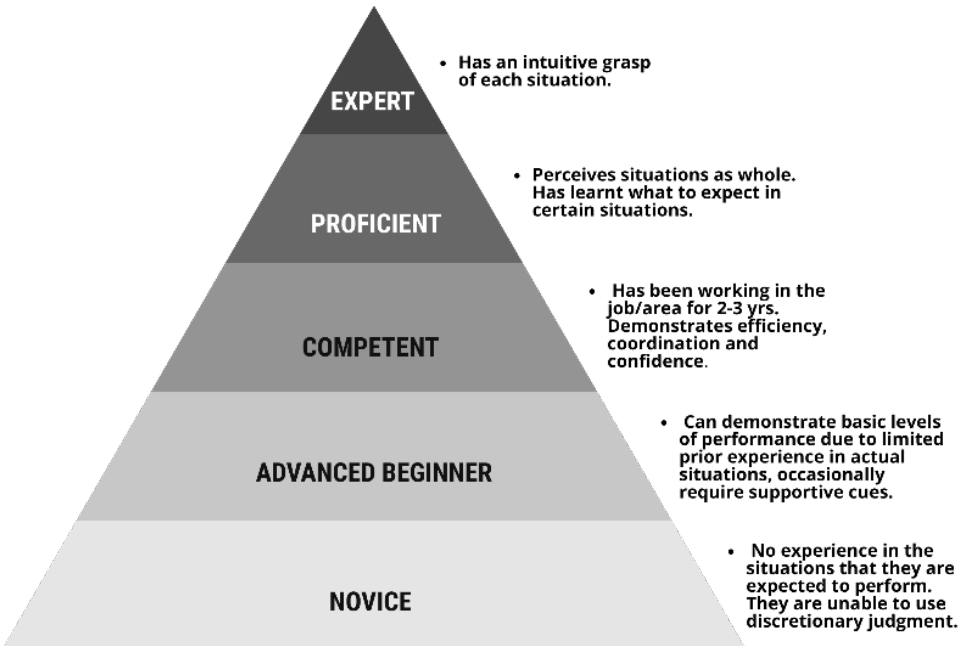
stakeholders who reported wanting to serve on boards and site stakeholder, the AANA Senior Director of Education and Practice (B. Morgan, personal communication, September 24-October 15, 2021). For the needs assessment, the CRNA stakeholders were defined as the CRNAs who responded to project leaders' queries about CRNAs' interest in serving on boards and NOB preparation for board service. The assessment revealed that CRNAs need NOB preparation content provided as an easily accessible, on-demand education program that is mindful of time efficiency for participants (B. Morgan, personal communication, September 24-October 15, 2021; CRNA stakeholders, personal communication, September 10-October 15, 2021). The available NOB preparation materials did not meet the requested criteria needs. Thus, the project leader created a NOB preparation microlearning program for CRNAs intervention to meet stakeholders' needs.

Conceptual Model

Benner's *Novice to Expert* nursing model was used to guide this proposal. It described the five stages of practice development that a nurse progresses through when acquiring knowledge and skills with experience. A nurse's development stages will range from novice to advanced beginner, competent, proficient, and expert (Benner, 1984; Figure 1). This model tied nicely to this program because a CRNA can have different developmental stages of expertise when professional service is compared to clinical practice. An expert clinician can be a novice at certain types of professional service, such as serving on boards. The *Novice to Expert* model in this project allows CRNAs to identify their preparedness level to serve on boards and their commitment to that intention. CRNAs can develop knowledge and skills related to board service through the proposed program, thus elevating their level of expertise and moving fluidly up the Benner pyramid stages.

Figure 1

Benner's Novice to Expert Model of Skill Acquisition



Note. Murray et al., 2019.

Purpose and Specific Aims

The purpose of this project was to implement a NOB preparation microlearning program for CRNAs who desired to serve on boards but felt unprepared to do so. The specific aims were to (a) improve CRNA participants' preparedness confidence (henceforth referred to as preparedness) to serve on boards (b) improve CRNA participants' intention to serve on boards, (c) evaluate CRNA participants' application of NOB learning after program completion, and (d) offer CE credit for program completion.

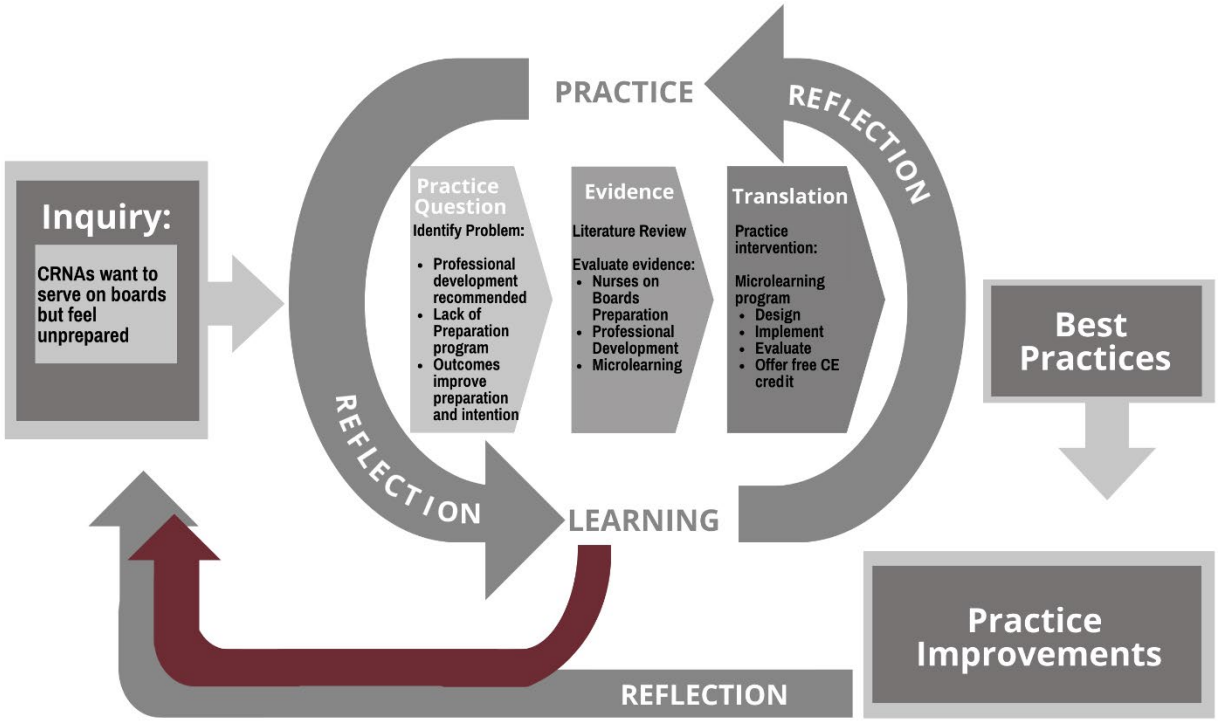
Evidence-Based Practice (EBP) Model

The *Johns Hopkins EBP for Nurses and Healthcare Professionals Model* (Dang et al., 2022; Figure 2) guided this project. The model provided the tools to guide practitioners through the EBP process and followed the process of inquiry about the best evidence to guide practice

improvements. It's practice learning cycle comprised three phases: practice question, evidence, and translation. The project leader identified the problem, intervention, and outcomes in the practice question phase. In the second phase, the project leader evaluated the evidence. Finally, in the third phase, the project leader translated the evidence into practice by designing, implementing, and evaluating the practice intervention (Dang et al.).

Figure 2

Johns Hopkins Evidence-based Practice for Nurses and Healthcare Professionals: Model and Guidelines



Note. Dang et al., 2022.

Methods

Design

The project leader used a pre- and post-test design to evaluate program effectiveness.

Setting

The project was conducted under the umbrella of AANA CE and overseen by their Senior Director of Education and Practice. The project was conducted online with distance communication to participants. The national organization comprised 61,000 nursing members. It is open to those who have passed the CRNA specialty certification examination after completing their academic advanced practice specialty program. Associate membership is available to nurse anesthesia residents enrolled in a nurse anesthesia program. Membership provides CE leadership and professional development opportunities, volunteering, wellness, recognition, and awards. The organization offers professional advocacy, career advancement, professional practice support, tracking of recertification requirements, and membership to the members' state organizations.

Sample

The target sample was CRNAs who were members of AANA and interested in professional development related to board service.

Operational Definition

A program participant was defined as an individual who created their unique six-character self-identifier and used the identifier to complete the pre-test, intervention, post-test, program evaluation, and demographic questionnaire.

Context

Root Causes

The root cause of limited nurses serving on boards was nurses being historically under-prepared and, therefore, possibly under-represented on boards, including healthcare and hospitals. The United States, with over five and a half million licensed registered nurses (RNs)

(National Council State Boards of Nursing, 2024), has less than 0.2% of RNs serving on boards (L. Benson, NOBC, personal communication, June 30, 2024). In 2019, nurses made up the most significant portion of the hospital workforce (American Hospital Association [AHA], 2019), yet in that same year, they made up only 4% representation of hospital boards, a decrease from 6% in 2011 (AHA), and remarkably lower than the 18% (AHA) held by physicians who number just over one million licensed members in the U.S. (Statista, 2024).

Key Stakeholders

Project key stakeholders were AANA, CRNAs, and various health and non-healthcare boards who benefited from CRNAs' preparedness and participation.

Culture

This project was strongly supported by AANA's historic commitment to leadership development for CRNAs through education preparation programs and the collaboration from the AANA Senior Director of Education and Practice after the identified need for the proposed program at the national level.

Procedure/Intervention Implementation

Intervention

The intervention was a NOB preparation program comprising ten microlearning education modules ranging from 2-6 minutes. The program was conducted on *Canvas by Infrastructure* (Salt Lake City, UT) learning management system (LMS). The ten microlearning program modules (Appendix A) were created by extracting crucial content components from NOB expert opinion preparation guides, recommendations, and best practices from the literature (Cleveland & Harper, 2020; Mullinix & Walton, 2018; Roberts, 2018; Salemo, 2023), NOBC resources (American Nurses Foundation [ANF] & NOBC, n.d.; Matos, n.d.), and NOBC experts

(L. Benson, personal communication, January 22, 2023). Modules were concise, narrowly focused, stand-alone presentations that could be viewed in any order but supported each other as a unit (De Gagne et al., 2019; Zhang & West, 2020). NOB content experts from NOBC (Board of Directors volunteers and Executive Director) reviewed the outlines. Each module was created using the video creation and AI voice software *Animaker* (San Francisco, CA), and posted on Canvas. Additional graphic design elements were created for the course using the *Piktochart* web-based graphic design tool (Pengange, Malaysia). The pre- and post-tests were conducted through *SurveyMonkey* web-based survey program (San Mateo, CA). The project leader completed the AANA Prior Approval application for Provider-Directed Independent Study (PDIS) to offer AANA Class A .75 CE credit.

Intervention Team

The project leader designed, developed, and delivered the e-learning microlearning modules. The consultants included B. Morgan (AANA), W. Huang (instructional designer, microlearning education), and volunteers from the NOBC Board of Directors (expert review NOB preparation content). The project leader obtained direction from the consultants as needed.

Implementation of Intervention

The project intervention implementation included a pre- and post-intervention phase (Table 1). CRNAs were notified of the available program by announcement (Appendix B) emailed to CRNAs registered with NOBC as wanting to serve on boards and posted on CRNA social media sites hosted by the project leader. A press release issued by AANA promoting NOBC's 10th Anniversary with the link to the *NOB preparation Microlearning Program for CRNAs* intervention was also shared on social media sites by AANA and project leader. Data were collected 12 weeks after the program course was opened to participants on *Canvas*.

Participants who enrolled in the program and did not complete it within 14 days received a reminder message through Canvas to complete the program and program evaluation. The program will remain available to CRNAs for CE credit beyond the timeline of this project.

Table 1

Implementation Phases of Intervention

Phase	Location	Purpose	Item	Action
Pre-Implementation	SurveyMonkey	Data collection	Participant identifier	Create
	SurveyMonkey	Data collection	Demographic data form, SHIP-BC© self-assessment, & CPD Reaction Questionnaire© assessment	Complete
	SurveyMonkey	Instruction	Access to Canvas and intervention	View
	Canvas	Task	Creation of Canvas account	Create
Implementation	**Canvas**	**Intervention**	**NOB preparedness 10 microlearning modules**	**Complete**
Post-Implementation	SurveyMonkey	Data collection	Participant identifier	Enter
	SurveyMonkey	Data collection	SHIP-BC© self-assessment, CPD Reaction Questionnaire© assessment, & Program evaluation adapted from AANA	Complete
	SurveyMonkey	Instruction	How to receive CE credit	View
	Canvas	Instruction	Enter AANA information to receive CE credit	Complete (optional)

Project participants were asked to create a six-character identifier for project data collection. The first four characters were the numbers for their birth month and date (MMDD); the last two characters were the first two letters of their mother's maiden last name. The *Canvas* user's account default login ID is the email address used to create the *Canvas* account. This email address was only visible to the project leader under the course section's enrollment. Participants were notified prior to account creation and during the pre-implementation instruction phase of *access to Canvas and intervention* that their email address would be visible to the project leader

only, would not be used for distribution or mailing lists, and would not be linked to their participation data. The name associated with *Canvas* creation could be set during account creation or after creation by participants editing their user profile. Participants were asked to have their *Canvas* account name be their six-character identifier or another non-participant-identifying name, if possible. Participants were notified that if unable to or preferred not to use this account name because their *Canvas* account was associated with other courses, their name would only be visible to the project leader in the *Canvas* course and would not be associated or linked with project participation data collection or used for any other purposes.

Participants had the option to receive AANA CE credit after project completion if they opted in by providing the required information for project leader to submit to AANA for their credit (name as it should appear on CE certificate, AANA membership number, and email to receive completion certificate). To receive credit, the project leader verified completion of the ten education modules, a score of 80% or higher on all knowledge assessments (with no more than three attempts), and the completed AANA program evaluation. After verification, the project leader entered participants' names and AANA membership numbers into an Excel spreadsheet, which was kept separate from project data on a password-protected laptop and encrypted flash drive. After the project intervention phase completion, the project leader uploaded the Excel file to the AANA CE portal for participants who met CE credit participation criteria.

The cost of Piktochart and SurveyMonkey was minimal to the project because of the project leader's existing subscriptions.

Ethical Considerations

Project Permissions

This project was approved by the University of Louisville IRB. AANA approval was not required.

Data Stewardship

All data received from participants were stored on an encrypted flash drive and password-protected laptop. The project leader maintained the confidentiality and anonymity of participants' identification and data. Participants' *Canvas* account email addresses were not linked to project data.

Measures

Process

The number of program participants who completed the intervention was obtained from *Canvas* platform. Participants were given the project leader's email address as a point of contact email so logistic and technical issues could be resolved as they developed. Two participants had technical issues accessing the *Canvas* course, which were quickly and easily resolved. Participant feedback regarding the platform and technology access was used for formative evaluation.

Outcome Measures

The project included three outcome variables: preparedness, intention, and program effectiveness. Preparedness was measured by changes between mean pre- and post-test scores on the SHIP-BC© self-assessment (Sundean, 2017). Intention to serve on boards was measured with the CPD Reaction Questionnaire© (Légaré et al., 2014; Légaré et al., 2017). Program effectiveness was measured using the AANA learner assessment program evaluation form for

Provider-Directed Independent Study (PDIS) CE program template (AANA, n.d.) with learner objectives adapted to the intervention (Appendix C).

Demographic Measures

Demographic data were collected in question/answer format on SurveyMonkey and with the pre-test (Appendix D).

Instruments

SHIP-BC©. The project leader obtained the author's permission to use the SHIP-BC©, an 18-item self-assessment tool based on the Center for Healthcare Governance (CHG) that should be exhibited by board members (Sundean, 2017). The three core skills components, Complexity/Analytical, Personal/Interpersonal, and Community/Organizational, were derived from analysis (Kaiser criterion ≥1) with reliability analysis Cronbach's alphas of 0.91, 0.90, and 0.83, respectively (Sundean). The content validity of suggested competencies was derived from a relevant literature review by the CHG. Content validity of individual items was determined by a survey of an expert panel of nine nurse scholars (Sundean). Each of the 18 items uses a five-point Likert response scale with anchor responses of "not very confident" and "very confident" to assess board readiness for nurses interested in healthcare governance roles. The middle three response options have no response labels. Skills components Complexity/Analytical were addressed by seven items, Personal/Interpersonal by six items, and Community/Organizational by five items (Sundean). The construct validity was evaluated by principal components analysis, assessing inter-item correlations and variances (Sundean). All questions are positively stated; reverse coding was not necessary for analysis. Respondents who score a 4 or 5 on any of the three skills components are considered to have mastery and self-efficacy of the respective component. Competency improvement in each component was considered when the mean score

increased from pre-test to post-test after the intervention. Reliability for the current project sample was assessed using Cronbach's Alphas for each of the three skill components (Table 2). Though all post-test core competencies demonstrated an acceptable Cronbach's Alpha of 0.70 or greater, only the pre-test skills component Complexity/Analytical had an acceptable reliability. Using Pallant's (2020) steps for interpreting SPSS Cronbach's Alpha output, the pre-test skills components Personal/Interpersonal and Community/Organizational did not reach an acceptable Cronbach's Alpha of 0.70 or greater.

Table 2

Pre- and Post-test SHIP-BC© Skills Components *Cronbach's Alphas*

SHIP-BC© Skills Component	**Pre-test Cronbach's Alpha**	**Post-test Cronbach's Alpha**
Complexity/Analytical	0.89	0.88
Personal/Interpersonal	0.57	0.89
Community/Organizational	0.46	0.78

The CPD Reaction Questionnaire©. The CPD Reaction Questionnaire© is a 12-item social cognitive theories-based instrument that assesses the impact of continuing professional development activities by evaluating behavioral intention changes (Légaré et al., 2014; Légaré et al, 2017). Authors grant use with citation. Construct validity was determined by a committee of researchers, CPD decision-makers, 70 international content experts, and an exploratory factor analysis (Légaré et al., 2017). The five scale constructs are Intention (items 1 & 7), Social Influence (items 2, 6 & 9), Beliefs about Capabilities (items 3, 5, & 11), Moral Norm (items 4 & 10), and Beliefs about Consequences (items 8 & 12). Cronbach's alphas of these constructs ranged from 0.79- 0.89. Eleven items use a seven-point Likert scale anchored at each end with the responses below. The middle five response options have no response labels:

Items 1, 3-4, 7, & 9-11" strongly disagree" to "strongly agree"

Item 5 "extremely difficult" to "extremely easy"

Item 6 "never" to "always"

Item 8 "useless" to "useful"

Item 12 "harmful" to "beneficial"

Item 2 uses a five-point Likert scale with "0-20%"," 21-40%"," 41-60%", "61-80%", and "81-100%" as response options. The questionnaire was designed to be easily adapted to various settings according to the activity's proposed behavioral objectives. An intention to change behavior was considered to have occurred when the mean score of a construct increases from the pre-test to the post-test. Reliability for the current project sample was assessed using Cronbach's Alphas for each of the five constructs (Table 3). For both the pre-test and post-test, only the constructs Intention and Beliefs about Consequences demonstrated a Cronbach's Alpha of 0.70 or greater. Using Pallant's (2020) steps for interpreting SPSS Cronbach's Alpha output, the pre-test and post-test Cronbach's Alphas for the constructs Social Influence, Beliefs about Capabilities, and Moral Norm did not reach an acceptable Cronbach's Alpha of 0.70 or greater.

Table 3

*Pre- and Post-test CPD Reaction Questionnaire© C*onstructs *Cronbach's Alphas*

CPD Reaction Questionnaire© Construct	**Pre-test Cronbach's Alpha**	**Post-test Cronbach's Alpha**
Intention	0.96	0.90
Social Influence	0.32*	0.33*
Beliefs about Capabilities	0.57*	0.66*
Moral Norm	0.69*	0.32*
Beliefs about Consequences	0.75	0.90

*Cronbach's Alpha < 0.70

Method for Data Completeness and Accuracy

The project leader reviewed data with the project committee chair and member for data collection completeness and accuracy. All survey responses were reviewed for completeness and checked for the presence of a possible response set.

Data Analysis

SPSS

The project leader used SPSS (version 29.0.2.0) for data analysis.

Demographic Data

Demographic data were analyzed using descriptive statistics (frequencies and measures of central tendency) and independent t-tests to compare mean age and mean years practicing as CRNA between program completers and non-completers.

Outcomes Measures

Paired t-tests were used to evaluate changes in pre- and post-test mean SHIP-BC© and CPD Reaction Questionnaire© scores. Participant feedback was used for formative evaluation.

Cronbach's alpha values were calculated for the pre-test and post-test administrations of the three SHIP-BC© skills components and CPD Reaction Questionnaire© constructs. This included the following steps recommended by Pallant (2020): (a) Check the Inter-Item Correlation Matrix for negative values; (b) Identify the Cronbach's alpha value; (c) Evaluate Corrected Item-Total Correlations; and (d) Evaluate Cronbach's alpha if item deleted. Using this process, the SHIP-BC© skills components with low Cronbach's alpha values (pre-test Personal/Interpersonal and Community/Organizational) did not improve to an appropriate level of 0.70 or greater. Similarly, three of the CPD Reaction Questionnaire© constructs with low Cronbach's alpha values (pre-test and post-test Social Influence, Beliefs about Capabilities, and

Moral Norm) did not improve to an appropriate level of 0.70 or greater. For this reason, all statistical results related to these components and constructs are considered with great caution.

Evaluation of Process

Facilitators. Project facilitators included the no-cost use of the *Canvas by Infrastructure* LMS platform free basic account, permissions to use assessment instruments, support from the AANA Senior Director of Education and Practice, and access to an instructional designer consultant, expert reviewers for NOB preparation content evaluation, and CRNAs registered with NOBC as wanting to serve on boards database list**.**

Barriers. Barriers to this project included intervention timing for CRNA participants with limited participation time, interest, or need, a dislike of the distance learning format, and a need to create individual free basic *Canvas* accounts to access the Microlearning program.

Results

Project Findings

Sample Description

The pre-test sample included 17 program completers and 35 non-completers. Age, years of CRNA practice, gender, race or ethnicity, highest nursing degree achieved, current employment status, primary position, and primary employment arrangement/source of income are provided in Table 4. Most program completers were doctorally prepared (15; 88.1%), Caucasian (14; 82.4%), worked full-time (15; 88.2%), and were employed in clinical practice (11; 64.7%). Their mean age was 51 ± 11.64, and mean years of CRNA practice was 18 ± 9.83. Independent-samples t-tests showed no significant differences in mean age and mean years of CRNA practice between program completers and non-completers (Table 5). Other demographic characteristics were similar between the two groups

Table 4

Demographic Characteristics of Program Completer and Non-Completer

Demographic Characteristics	Program	
	Completer ***n=17*** ***M ± SD***	**Non-Completer** ***n=36*** ***M ± SD***
Age	51 ± 11.64	46 ± 11.42
Years Practicing as CRNA	18 ± 9.83	14 ± 9.34
	Frequency (Percent)	Frequency (Percent)
Current Professional Certification		
CRNA	17 (100%)	35 (100%)
Gender identity most identified with		
Female	7 (41.2%)	22 (62.9%)
Male	10 (58.8%)	13 (37.1%)
Race or ethnicity that most describes		
Asian/Pacific Islander	1 (5.9%)	1 (2.9%)
African American or Black	--	2 (5.7%)
Hispanic, Latino, or Spanish origin	--	1 (2.9%)
White Caucasian	14 (82.4%)	30 (85.7%)
Multiple ethnicity/Other	2 (11.8%)	1 (2.9%)
Highest nursing degree achieved		
BSN	1 (5.9%)	2 (5.7%)
MSN	1 (5.9%)	--
DNP	9 (52.9%)	12 (34.3%)
DNAP	3 (17.6%)	12 (34.3%)
PhD (nursing)	3 (17.6%)	9 (25.7%)
Current employment status		
Full-time	15 (88.2%)	28 (80%)
Part-time	1 (5.9%)	6 (17.2%)
Retired	1 (5.9%)	1 (2.9%)
Primary Position		
Clinical Practice	11 (64.7%)	28 (80%)
Education-Administration	--	1 (2.9%)
Education-Faculty	3 (17.6 %)	3 (8.6%)
Department Management/Administration	2 (11.8%)	1 (2.9%)
Research	--	1 (2.9%)
Other (Business owner or Clinical and Faculty)	1 (5.9%)	1 (2.9%)
Primary employment arrangement/source of income		
Employee of hospital	1 (5.9%)	12 (34.3%)
Employee of group	7 (41.2%)	7 (20.0%)
Military, government, or VA	--	1 (2.9%)
Employee in other setting	1 (5.9%)	4 (11.4%)
Independent contractor	5 (29.4%)	8 (22.9%)
Owner or Partner	2 (11.8%)	2 (5.7%)
Other employment (University or Hospital and University)	1 (5.9%)	1 (2.9%)

Table 5

Independent t-tests for Age and Years of CRNA Practice for Program Completers and Non-Completers (N=53)

Demographic Variable	Program		*t*	*df*	*p*
	Completer *M* ± *SD*	Non-Completer *M* ± *SD*			
Participant age	50.94 ± 11.64	46.17 ± 11.42	1.40	51	.17
Years practicing as CRNA	18.00 ± 9.83	14.03 ± 9.34	1.41	51	.16

Preparedness

Paired samples t-tests were conducted to evaluate the intervention's impact on participants' preparedness scores. Participants' SHIP-BC© scores were evaluated as 18 individual items and three skills components (Complexity/Analytic, Personal/Interpersonal, and Community/Organizational). Paired samples t-tests indicated no significant improvement in preparedness after the intervention on any of the 18 items or three skills components (Table 6). One participant's post-intervention survey contained a response set. Removing this participant from the analysis resulted in no significant changes in mean scores of the three SHIP-BC© skills components or 17 of the individual SHIP-BC© items. Paired t-tests (one-sided) demonstrated a change in mean Personal/Interpersonal Skills Item 11 scores ("I take responsibility for my actions and decisions in the organization.") from non-significant (4.71 ± 0.77), $t(16) = -1.00$, $p = .17$) to significant (*4.59 ± 0.62); t(16)=-1.86, p=.04)* when this participant's survey was removed from the analysis.

Table 6

Paired t-test Pre- and Post-Test SHIP-BC© Mean Skills Components Scores (N=17)

Skills Component	Pre-test	Post-test	*t*	*df*	*p*
	M ± SD	M ± SD			
Complexity/Analytic	4.52 ± 0.51	4.43 ± 0.63	0.57	16	.29
Personal/Interpersonal	4.62 ± 0.36	4.57 ± 0.53	0.46	16	.33
Community/Organizational	4.24 ± 0.52	4.26 ± 0.64	0.13	16	.45

Mastery level preparedness was considered as SHIP-BC© score of four or five in any of the three skills components (Sundean, 2017). The number of participants whose pre-test skills component scores were at the mastery level ranged from 12 (71%) to 16 (94%), as shown in Table 7. The frequency of post-test mastery ranged from 13 (76%) to 15 (88%) with only one participant reporting a rating lower than mastery in the Personal/Interpersonal skills component.

Table 7

Frequency of Participants with Self-assessed Mastery and Self-efficacy on SHIP-BC© Skills Components (Levels 4 and 5)

Skills Component	Mastery Responses (N = 17)		
	Pre-test *n* (%)	Post-test *n* (%)	Difference *n* (%)
Complexity/Analytic	14 (82%)	15 (88%)	1 (6%)
Personal/Interpersonal	16 (94%)	15 (88%)	-1 (-6%)
Community/Organizational	12 (71%)	13 (76%)	1 (6%)

Intention

Paired samples t-tests were conducted to evaluate the intervention's impact on participants' intention scores. Five constructs representing intention were measured with the CPD Reaction Questionnaire©. Four of the constructs (Intention, Beliefs about Capabilities, Moral

Norm, and Beliefs about Consequences) had no significant changes following the educational intervention (Table 8). The participants' mean Social Influence construct had a statistically significant improvement from pre-test ($M = 3.16 \pm 1.03$) to post-test ($M = 3.78 \pm 0.71$), $t(16) = 2.41$, $p = .01$ (two-sided).

Table 8

Paired t-test Pre- and Post-Test CPD Reaction Questionnaire© Mean Constructs Scores (N=17)

Construct	Pre-test	Post-test	*t*	*df*	*p*
	M* ± *SD	***M* ± *SD***			
Intention	5.65 ± 1.87	5.15 ± 1.88	-1.20	16	.12
Social Influence	3.16 ± 1.03	3.78 ± 0.71	2.41	16	.01*
Beliefs about Capabilities	5.59 ± 0.93	5.51 ± 1.21	-0.39	16	.35
Moral Norm	5.71 ± 1.36	5.85 ± 1.07	0.44	16	.33
Beliefs about Consequences	6.00 ± 1.05	5.88 ± 1.39	-0.48	16	.32

*< .05

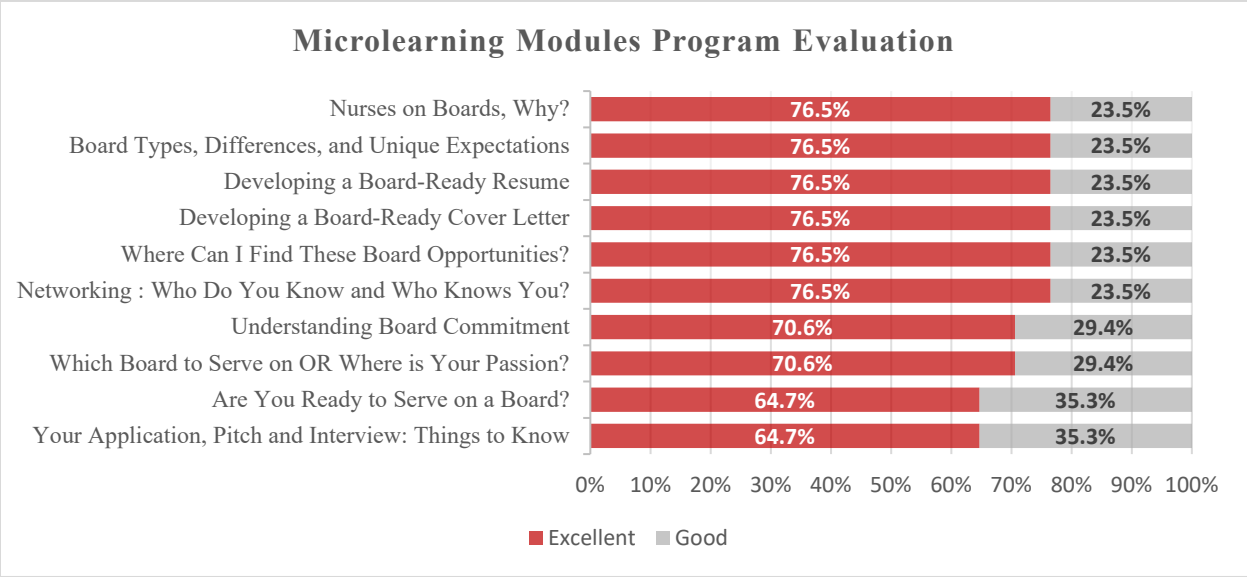
Program Evaluation

The project leader used the CE course's approved AANA program evaluation (Appendix C) to assess project completers' program evaluations. Each of the 10 items were assessed with five-point Likert-type responses: 1 – Excellent; 2 – Good; 3 – Adequate; 4 – Fair; and 5 – Poor. The 10 microlearning modules were evaluated as Good or Excellent (Figure 5) by all participants with a mean summary score of 1.27 ± 0.37. The five program effectiveness items, presentation style, teaching methods, online format, and meeting personal objectives, were rated Good or Excellent with a mean summary score of 1.06 ± 0.12. The content relevant to the objectives item was evaluated as Excellent by all respondents. Two open-ended items were coded by themes. The "One item you learned that will improve your nurse anesthesiology practice" responses included themes: preparing for board service (7, 41%), benefits for board service (6, 35.3%), awareness for board service (1, 5.9%), and expectations (1, 5.9%). The "Any barriers to

implement this change?" response themes included none (7, 41.2%), time (3, 17.6%), work (2, 11.8%), access to boards or networking (2, 11.8%), reluctance or opposition (2, 11.8%), and family or personal life (1, 5.9%).

Figure 3

Microlearning Modules Program Evaluation Ratings (N = 17)



Discussion

Summary

The purpose of this project was to implement a NOB preparation microlearning program for CRNAs who desired to serve on boards but felt unprepared to do so. The project was driven by the expressed lack of preparation by CRNAs for serving on boards that did not historically include nurses and the NOB literature recommendations for improving preparation through additional professional development. The lack of such a program indicated a need for an AANA prior approved Class A CE credit program for CRNAs that could provide participants with the free professional development opportunity to acquire NOB preparation quickly and on demand when interest or need arises.

The microlearning program was created to provide CRNAs seeking NOB preparation with the education to improve preparedness and, hopefully, increase their intention for board service. The program was voluntary; the only criteria for data collection were completion of the pre-assessment, all ten microlearning modules, and post-evaluation by CRNAs. At the start of the project, it was presumed that those completing the program would be on the lower tiers of *Benner's Novice to Expert Model of Skill Acquisition* (Benner, 1984).

This report documents the implementation of an evidence-based professional development microlearning program for CRNAs. While data did not demonstrate a significant overall improvement in preparedness or intention after program completion for this group, some individual program completers had improved preparation or intention items, which may benefit those participants. At the request of AANA Senior Director of Education and Practice, this intervention will continue to be offered as a free CE program to meet the needs of CRNAs who want to serve on boards and desire additional preparation.

Interpretation

Sample Characteristics

The sample size was small despite multiple recruiting efforts and the project intervention being available for 12 weeks. While board preparation is considered a niche topic for CRNAs, the program was determined by AANA education executive staff to be a need. It is intended for ongoing availability and use by CRNAs interested in serving on boards, including the 171 CRNAs registered with NOBC who want to serve on boards. In this project, 50 CRNAs completed the pre-test, and 27 enrolled in the course; however, only 17 completed the full program and data collection instruments. Those who enrolled and completed the program did so within seven days. Those who registered in the program but did not complete it within two

weeks were sent a reminder message through Canvas. Two participants had registered with emails that were not valid. By design of the pre-test survey to include anonymous six-digit identifiers, those completing the pre-test but not following through with program enrollment (*n* = 23) could not be reminded to enroll and complete the program.

CE Credit. Project recruitment was presented to CRNAs interested in serving on boards (Nonprofit, Corporate, Government, Advisory, or Governance Boards). Participant CRNAs were eligible to receive a free 0.75-hour AANA Class A CE credit for completing the Nurses on Boards Preparation Microlearning Program. Recruitment materials were first sent to CRNAs who had previously identified with NOBC as wanting to serve on boards and then posted by the project leader on social media. A slight uptick in pre-assessment surveys (2-5) occurred after each announcement. After four weeks, a second email announcement was sent to the NOBC registrants. AANA also promoted the program via a press release and social media in conjunction with NOBC's "A Decade of Impact" Celebration. A few increases in pre-tests occurred after each promotion. Only four program completers opted to receive CE credit.

NOBC Registrants. The number of undeliverable emails (*n* = 44) from the 171 CRNAs registered with NOBC as wanting to serve on boards suggests that many registered CRNAs had not updated their profile to maintain a current email address**.** As the initial pre-test response rate was small after the first email and follow-up reminder, it is possible that some CRNAs in the database may have been interested in serving on boards when they initially registered (sometime in the past ten years). However, the number of actual registrants (*n* =171) may not accurately reflect the number of CRNAs currently interested in serving on boards.

Preparedness

While it was presumed that individuals interested in this program would be on the lower tiers of *Benner's Novice to Expert Model of Skill Acquisition* (Benner, 1984), likely feeling less confident in their preparation to serve on boards and would not pre-test on the SHIP-BC© with mastery level scores (scores 4 or 5), that was not the case. Many program completers began with pre-test scores that reflected mastery level scores on the SHIP-BC© skills components for preparedness shown in Table 7. The mean skills component Complexity/Analytic and Personal/Interpersonal (Table 7) decreased, and there was a non-significant increase in the skills component Community/Organizational. This is likely due to the high pre-test ratings indicating that the sample represented CRNAs who were highly educated and/or experienced with board service. However, it must be noted that the pre-test skills competencies Personal/Interpersonal Skills and Community/Organizational subscales did not demonstrate acceptable Cronbach's alpha reliability scores, so they cannot be considered appropriate evaluations. The small sample size is the most likely cause for low reliability scores.

Intention

Changes in four of the five CPD Reaction Questionnaire© constructs were not statistically significant, as noted in Table 8, including the 0.5 mean score decrease in the Intention construct. However, 10 (59%) of program completers' pre-test scores for this construct were ceiling responses, leaving those individuals unable to increase their post-test Intention construct score. Although the Social Influence construct, indicating participants' intention to change their social influence behaviors (Légaré et al., 2017), demonstrated a significant change, this subscale did not demonstrate acceptable Cronbach's alpha values for either the pre-test or post-test. Most notable is the lack of acceptable reliability (≥ 0.70) in this project sample for three CPD Reaction

Questionnaire© constructs: Social Influence, Beliefs about Capabilities, and Moral Norm. The small sample size may be the major contributor to low reliability scores in both pre-test and post-test, while the pre-test ceiling effects of the high-functioning participants may have influenced the post-test scores.

Program Evaluation

Receiving positive feedback from program completers was valuable. All respondents rated the 10 microlearning modules as Excellent (15, 88.2%) or Good (2, 11.8%).

Costs

All costs associated with this program were related to the creation of the intervention, with no costs for implementing the intervention or maintenance to allow the program to remain available until the course CE credit expires on May 19, 2027. While CE credit will likely no longer be offered after expiration, the microlearning program will remain available and will be updated as needed.

Limitations

It is suspected that the target audience of CRNAs who are currently or actively interested in serving on boards yet have room for improvement in preparedness or intention, may not have been reached by the recruitment methods outlined in this project. Similarly, an updated NOBC database identifying the target audience would have benefitted this project. Another limitation of the DNP project was that there was no way to provide a reminder to complete the program notice to those who completed the pre-test but did not enroll in the Canvas course. This will be resolved when the program is offered as a stand-alone CE program without the pre-test.

The small sample size likely contributed to the low reliability scores on the SHIP-BC© skills components and CPD Reaction Questionnaire© constructs. The lack of appropriate

Cronbach's alpha values for these instruments created significant limitations in the statistical testing and outcomes interpretation.

Conclusion

The usefulness of the microlearning program will extend beyond its project intervention use. While the number of program completers was small and the project produced no statistically significant improvement in preparedness or intention, the program can benefit individual participants, the CRNA profession, and the boards on which the CRNAs will eventually serve. Participants provided strong evaluations of the 10 microlearning modules. The impacts that occur when a nurse serves on the board (Sundean, O'Lynn et al., 2022; Sundean et al., 2023) may be demonstrated by participants who completed the NOB program, resulting in positive effects on communities, healthcare, health equity, and policy.

This microlearning program can easily be sustained by the project leader who will incorporate updated information as needed, with no additional monetary costs, unless CE credit is offered again. This program will be adapted for use by the larger registered nursing audience by removing the CRNA-specific context and making the updated program available as a free course without CE credit.

As noted in the literature review, previously offered evidence-based project reports that included NOB preparation programs were offered as one-time programs (Park, 2021; Scott et al., 2020). Additionally, the webinar preparation series from the American Nurses Foundation, initially available when this project endeavor began, is no longer available. The project microlearning program was created with the intent of being permanently available on-demand to any CRNA or nurse, allowing it to have a far wider range of possible impact, yet with minimal time or financial resources to maintain and sustain the program. Implications for further study

include evaluating the program's effectiveness with the target audience of nurses and continuing to evaluate the available research literature providing evidence on best preparing nurses for board service.

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Appendix A

Microlearning Module Program Outline

Microlearning Module Program Outline 10 Intervention Modules: Nurses on Boards Preparation		
Title	**Description**	**Assessment Format**
Nurses on Boards, Why?	• Value of Nurses on Boards • IOM report Research	1 graded question
Board Types, Differences, and Unique Expectations	• Nonprofit • Corporate • Government • Advisory and Governance	1 graded question
Understanding Board Commitment	• Time • Financial • Personal • Professional	1 graded question
Are You Ready to Serve on a Board?	• NOBC Board Readiness Model: Novice to expert • NOBC's recommended board competencies • Readiness Assessment for Board Service	Self Assessment survey
Which Board to Serve on OR Where is Your Passion?	• Evaluate personal interests • Evaluate personal ability to commit	2 non-graded questions
Developing a Board Ready Resume	• Key things boards are looking for • Constructing a successful board resume	1 graded question
Developing a Board Ready Cover Letter	• Successful board application cover letter	1 graded question
Where Can I Find These Board Opportunities You Speak of?	• NOBC resources • Professional and other resources • Resources for board matching	1 graded question
Networking: Who Do You Know and Who Knows YOU?	• Why networking matters • Identifying personal and professional connections • Steps to ID, develop, upgrade, and nurture	2 non-graded open-ended questions
Your Application, Pitch , and Interview: Things to Know	• Researching position and board profile • Articulation of value and pitches • Board value position	1 graded question

Appendix B

Project Announcement Infographic

Appendix C

Program Evaluation

Program Evaluation

AANA Provider-Directed Independent (PDIS) Study
Learner assessment and program evaluation

Indicate your level of achievement for each learner objective on the rating scale.

* 1. Objective for *Nurses on Boards, Why?*

After completing the module, participants will be able to articulate the impact of nurses on boards.

Excellent	Good	Adequate	Fair	Poor
○	○	○	○	○

* 2. Objective for *Board Types, Differences, and Unique Expectations*

After completing the module, participants will be able to articulate the impact of nurses on boards.

Excellent	Good	Adequate	Fair	Poor
○	○	○	○	○

* 3. Objective for *Understanding Board Commitment*

After completing the module, participants can recognize what levels and areas of commitment they can currently give to board service now and will be able to develop a plan for commitment for future board service.

Excellent	Good	Adequate	Fair	Poor
○	○	○	○	○

* 4. Objective for *Are You Ready to Serve on a Board?*

After completing the module, participants will be able to assess their readiness for board service and know the areas where additional preparation is recommended.

Excellent	Good	Adequate	Fair	Poor
○	○	○	○	○

* 5. Objective for *Which Board to Serve on OR Where is Your Passion?*

After completing the module, participants can develop a plan for boards to consider serving now and in the future.

Excellent	Good	Adequate	Fair	Poor
○	○	○	○	○

* 6. Objective for *Developing a Board-Ready Resume*

After completing the module, participants can develop a plan to create their board-ready resume tailored to the application of the board position.

Excellent	Good	Adequate	Fair	Poor
○	○	○	○	○

* 7. Objective for *Developing a Board-Ready Cover Letter*

After completing the module, participants can develop a plan to create their board-ready cover letter tailored to the application for the board position.

Excellent	Good	Adequate	Fair	Poor
○	○	○	○	○

* 8. Objective for *Where Can I Find These Board Opportunities You Speak of?*

After completing the module, participants can find and explore the free resources available to find board opportunities.

Excellent	Good	Adequate	Fair	Poor
○	○	○	○	○

* 9. Objective for *Networking: Who Do You Know and Who Knows YOU?*

After completing the module, participants can articulate the types of connections that are beneficial for board position networking and be able to prepare a plan to identify, develop, upgrade, and nurture the connections that are more likely to aid in securing a board position.

Excellent	Good	Adequate	Fair	Poor
○	○	○	○	○

* 10. Objective for *Your Application, Pitch, and Interview: Things to Know*

After completing the module, participants can formulate a plan for researching a prospective board organization and implement findings to improve board application, pitch, and interview.

Excellent	Good	Adequate	Fair	Poor
○	○	○	○	○

* 11. Other

	Excellent	Good	Adequate	Fair	Poor
Presentation style was effective for learning	○	○	○	○	○
Teaching methods were effective	○	○	○	○	○
Online learning format facilitated learning	○	○	○	○	○
The content was relevant to the objectives	○	○	○	○	○
My personal learning objectives were met	○	○	○	○	○

* 12. State one item you learned that will improve your nurse anesthesiology practice.

* 13. State any barriers to implement this change.

Note: Program evaluation for the prior approved for .75 Class A CE credit AANA program Code Number 1044474, expiration date 05/19/2027, adapted from the *AANA Provider-Directed Independent Study (PDIS) program evaluation sample evaluation* form (AANA, n.d.). Changes include the objectives for questions 1-10 and question 11 changed from facilitator to presentation style.

Appendix D

Demographic Questions

Demographic Data
What is your current professional certification?
CRNA
Other (please specify) [text box]
What is your current age?
[text box]
Which gender identity do you most identify with?
Female
Male
Transgender Female
Transgender Male
Gender Variant/Non-Conforming
Not listed (please specify) [text box]
Prefer not to answer
Which race or ethnicity best describes you?
American Indian or Alaskan Native
Asian/Pacific Islander
African American or Black
Hispanic, Latino, or of Spanish origin
White/Caucasian
Multiple ethnicity/Other (please specify) [text box]
Prefer not to answer
What is your highest nursing degree achieved?
BSN
MSN
DNP
DNAP

	PhD (nursing)
	Other (please specify) [text box]
How many years have you been practicing as a CRNA?	
	[text box]
What is your current employment status?	
	Full-time
	Part-time
	Retired
	Other (please specify) [text box]
What is your primary position?	
	Clinical practice
	Education-Administration
	Education-Faculty
	Department management/Administration
	Research
	Consultation
	Other (please specify) [text box]
	Prefer not to answer
What is your primary employment arrangement/source of income?	
	Employee of hospital
	Employee of group
	Military, Government, or VA
	Employee in other setting
	Independent contractor
	Owner or Partner
	Other employment (please specify) [text box]
	Prefer not to answer