## The ANA Innovation Accelerator: Galvanizing the Future of Nursing

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January 31, 2025 DOI: 10.3912/OJIN.Vol30No01Man01

#### Article

#### Abstract

The American Nurses Association launched the first ever innovation accelerator created for nurses, by nurses, outside of an academic environment. The free, nine-month ANA Innovation Accelerator was initiated to position nurses as leaders with the knowledge, skills, and strategies to accelerate innovation practice. Very few nursing programs in the United States offer innovation-related education. Few studies have addressed the important need for access by nurses to innovation accelerators. Literature that addresses accelerators is limited. This article outlines the importance of innovation education and the launch of our ANA Innovation Accelerator to provide a structured process to advance entrepreneurship and intrapreneurship opportunities, cultivate innovation networks, and utilize learning collaboratives to drive further discovery. We describe a one group, pre-post study that evaluated participants' perceptions of both individual and organizational innovativeness using the Individual Innovativeness (II) Scale and the Perceived Organizational Innovativeness Scale (PORGI). One strength of our accelerator experience to advance innovation work, expand their professional roles, and catalyze positive change across nursing and healthcare. We contend that innovation accelerators should be utilized to galvanize the unleashed potential of nurses to impact healthcare outcomes, and we offer implications for nursing practice and healthcare.

Key Words: Nurses, innovation, accelerators, networks, learning collaboratives, nurse-led innovation, nurse innovators

The mission of the American Nurses Association (ANA) is to lead the profession to shape the future of nursing and healthcare. The Innovation Department is working to build a culture of innovation across the nursing profession that supports and nurtures the innovative, curious, and pioneering nature of nurses. In 2022, the ANA Innovation Department completed a beta test of a three-month Innovation Accelerator (ANA-IA) that was offered as a free opportunity for nurses to advance their innovation knowledge, collaborate with fellow nurses, and practice pitching innovative ideas. At the conclusion of this beta testing, a strategy to expand the accelerator was initiated (<u>Beaudet et al., 2023</u>).

The first ever innovation accelerator specifically created for nurses outside of academia was launched in February 2023. The first ever innovation accelerator specifically created for nurses outside of academia was launched in February 2023. The aims of the ANA-IA included positioning nursing students as a critical group of emerging leaders, nurses of color with broader opportunities to amplify their work across larger platforms, nurse educators at every level to expand innovation education, and to ensure all nurses interested in innovation are given resources, expertise, and skills to

successfully lead, role model, and scale nurse-led innovations. We used a quasi-experimental survey design to explore nurses' perception of individual and organizational innovativeness. Additionally, responses from a follow-up feedback accelerator survey examined how the ANA-IA prepared nurses to advance their innovative work, lead in their professional roles, and advance or lead positive change across nursing and healthcare

Background

The ANA Innovation Department currently references the definition of innovation by Lachman et al., "the application of creativity or problem solving that results in a widely adopted strategy, product, or service that meets a need in a new and different way. Innovations are about improvement in quality, cost effectiveness, or efficiency" (2006, p.205). Every aspect of ANA Innovation is grounded in the first iteration of the Nursing Ethos of Innovation, which is defined by key characteristics and evidence that embody the spirit, culture, and science of innovation (Beaudet et al., 2023).

The ANA and the American Nurses Credentialing Center (ANCC) Magnet Recognition Program have prioritized innovation as a necessary competency for the profession of nursing as innovations in nursing, patient care, and the practice environment are the hallmark of Magnet®

## Few nursing programs provide innovation related education.

organizations (<u>Lal, 2020</u>). Recommendations from the Future of Nursing (<u>National Academies, 2021</u>) report framework for leadership include encouraging innovation and quality improvements in the workplace to improve healthcare. Similar to the Future of Nursing report, the ANA Nursing Leadership: Scope and Standards of Practice advises that to advance the social contract of the profession, leaders ought to engage in futures thinking, environmental scanning, and identification of emerging trends and issues as well as resourcing, supporting, and developing innovations (<u>ANA, 2024</u>, p. 45).

There is a recognized need for nurses to receive innovation education to enable cultural change (Sensmeier, 2019) and address healthcare inequities (Kelley et al., 2023). Although innovation has been prioritized as a professional and leadership imperative, nurses receive limited, if any, opportunities to engage in innovation education and practice. Few nursing programs provide innovation related education. Currently there are 18 universities in the United States with design, innovation, or emerging educational pathways (ANA Innovation, 2024). Similarly, there are a limited number of healthcare systems that provide nurses with the opportunity to engage in innovation education and practice. An increase in systematic research to understand the role, operations, and outcomes of accelerators and their ability to shape the landscape of healthcare is needed (Wright & Drori, 2018). Recognizing this need, and the critical imperative to grow and sustain a successful conduit for nurse-led innovation, ANA Innovation created this first ever Innovation Accelerator for nurses outside of an academic environment.

## **History of Accelerators**

During the last 15 years, accelerators have played a pivotal role in advancing entrepreneurial and innovation endeavors. Accelerators are entrepreneurial and educational programs that attempt to help innovators learn and grow their work through the assistance of education, mentors, funding, guest speakers, peers, and alumni (<u>Hallen et al., 2019</u>). During the last 15 years, accelerators have played a pivotal role in advancing entrepreneurial and innovation endeavors (<u>Crisan et al., 2021</u>). A multitude of accelerators exist, including venture, government, corporate-sponsored, and university-led accelerators which vary based on geographic location and region (<u>Bagnoli, et al., 2020</u>). Both

corporate and independent accelerators have become a critical aspect of the innovation ecosystem (Boni & Gunn, 2021).

Employees are simultaneously the biggest investment and largest source of value in an organization (<u>Berube et al., 2024</u>). A multitude of industries have leveraged accelerators to promote ecosystem development, economic growth, and the development of cultural capital (<u>Bauer et al., 2016</u>). The most notable accelerator programs include industry pioneers Y Combinator (founded in 2005) and Techstars (founded in 2007), which collectively have helped launch over 8,000 companies, and raise over \$100 billion in funding (<u>Techstars, n.d.; Y Combinator, n.d.</u>).

## Why Nursing and Nurses Need Innovation Accelerators

An examination of nursing accelerators conducted by Kagan et al. (2021) described the importance of mechanisms like accelerators to assist in the advancement of nursing ideas and innovative initiatives. Roggenkamp & White (1998) defined

nurse entrepreneurship as an environment of change, where entrepreneurs emerge to develop new methods and processes of delivering healthcare in a way that lowers the overall costs of care while improving outcomes. Manion (<u>1990</u>) defined a nurse intrapreneur as, "one who creates innovation within the healthcare organization through the introduction of a new product, a different service or simply a new way of doing something" (p. 2). Intrapreneurship is a relatively unknown phenomenon in international nursing research, and the prevalence of international entrepreneurial nurses is only 0.5-1% (<u>Jakobsen et al., 2021</u>).

Entrepreneurial and intrapreneurial skills offered in accelerators help to advance the businesscentric aspect of the nursing profession and to successfully navigate conversations and other spaces where business acumen is essential. Brooks (2019) found that nurse entrepreneurs who experienced a lack of support, mentors, or assistance from within their colleges of nursing, sought external entrepreneurial assistance. It is critical for nurses to have both internal and external professional support, mentorship, and guidance to position themselves as healthcare

Entrepreneurial and intrapreneurial skills offered in accelerators help to advance the business-centric aspect of the nursing profession...

leaders. Accelerators should be encouraged for healthcare professionals to cultivate entrepreneurial mindsets, develop new business models, and generate new revenue streams to further advance entrepreneurial engagement in healthcare (Glover <u>et al., 2024</u>).

## The American Nurses Association Innovation Accelerator (ANA-IA)

The ANA-IA was comprised of eight innovation modules (see Table 1) that incorporated multiple learning modalities including podcasts, images, articles, websites, videos, surveys, and reflection questions. The asynchronous learning modules provided an opportunity for participants to learn at their own pace and at a time that worked best for individual schedules. Dr. Patricia Benner's (1984) concept, From Novice to Expert, was served as a guide for accelerator leaders and participants in the selection level (i.e., the level of difficulty) of innovation education modules related to two distinct accelerator tracks: beginner/intermediate and intermediate/advanced.

## Table 1. ANA Innovation Accelerator Modules

Monthly Cadence		ANA Innovation Accelerator Modules
February	Module 1: Human Centered Design & Design Justice	
March	Module 2: Entrepreneurship & Intrapreneurship	
April	Module 3: Measurement, Metrics, and Intellectual Property	
May	Module 4: Funding & Commercialization	
June	Module 5: Innovation Project Proposals	
July	Module 6: Innovation Project Proposals	
August	Module 7: Scalability & Sustainability	
September	Module 8: Storytelling, Professional Messaging, & Deck Design	
October	Final Project Pitch	

Requirements for the eight innovation modules included completion of the module learning assignment and a survey to evaluate the achievement of module objectives and knowledge advancement. Module learning assignments included creating a health design lab, formulating a business model canvas, completing an intellectual property quiz, writing a funding and commercialization strategy, and conducting an interview with a subject matter expert. During the application process, accelerator participants indicated an area of innovation interest and/or innovation project idea. This information was used to examine potential synergies related to the innovation modules and informed the content covered during their final innovation pitch presentation.

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Each module focused on a specific innovation characteristic to advance innovation skills and behaviors. Innovation characteristics highlighted in the modules include generous listening, dual awareness, grit, and bricolage (i.e., resources at hand). Global innovation exemplars were incorporated into each innovation module to create awareness of how innovation is utilized and practiced throughout our global healthcare community. The Global Health Innovation Guidebook highlighted the identify-invent-implement process and guided accelerator participants to examine market and stakeholder dynamics; to define a viable business model; and to explore the process to get to market/ready product service (Denend & Zenios, 2013).

Finally, exemplars of cross-industry innovation were included to promote awareness of successful innovations taking place outside of healthcare. Insights were drawn from cross-industry innovations that emerged from automotive, technology, and environmental organizations. Several exemplars of nurse-led innovations were highlighted at the conclusion of each module which coincided with the content focus of the innovation module (Lemberger, 2022). These nursing exemplars provided additional opportunities for continued learning. The DRIVE acronym (see Figure 1) was infused into all ANA-IA presentations, modules, assignments, and meetings. The acronym DRIVE conveys the intentional focus of the accelerator on the forward

and futuristic progression towards innovation. As accelerator participants finished each module they were asked to reflect and demonstrate how their "DRIVE" could influence their nursing practice, interprofessional teams, various work-settings, and the nursing profession.

## Figure 1. DRIVE Acronym for the ANA-IA



## **Collaborative Innovation Networks**

Collaboration and networking opportunities were infused into multiple facets of the ANA-IA. Creative interactions that arise from the collaborations of individuals provide the ability to navigate present and future complexities (<u>Dianova & Citraro, 2022</u>). Monthly virtual meetings included presentations by subject matter experts directly related to the current module content.

Collaboration and networking opportunities were infused into multiple facets of the ANA-IA.

Monthly meetings also included large and small group networking sessions which provided ANA-IA participants with an opportunity to build their innovation community. For example, nurses were paired in breakout sessions with fellow accelerator participants working on similar innovative initiatives (e.g., nurses working on product development were paired with other nurses working on products). Discussion boards and a private Accelerator LinkedIn® group led to interactive experiences and created future possibilities for collaborative networks.

## **Final Pitch**

To mark the successful completion of the ANA-IA, participants prepared a three-minute audio recorded pitch or participated in a live pitch event. A successful pitch may lead to financial assistance that enables innovators and entrepreneurs to turn an idea into a reality (<u>Landry, 2020</u>). Participants used the art of storytelling to create their final pitch presentation, which related to the innovation project they had identified at the beginning of the ANA-IA. For the live event, participants pitched to judges with innovation expertise and received constructive feedback. Accelerator participants also provided constructive feedback for peers in the meeting chat.

Participants used the art of storytelling to create their final pitch presentation...

The live pitch event challenged participants to succinctly describe their innovations to a private group of reviewers who had signed a non-disclosure to protect these ideas and who provided constructive feedback to enhance the idea or pitch. ANA-IA participants who elected not to participate in the live pitch could create an audio pitch for ANA Innovation staff who then

provided private feedback to them. Certificates of completion were awarded to accelerator participants (n = 45) who successfully completed the eight innovation learning modules, corresponding assignments, surveys, and submitted a final pitch presentation.

## Knowledge Gaps and Study Aim

It is widely recognized that accelerators have a key role in developing an entrepreneurial climate and may be the vehicles to revitalize industries (<u>Coste & Gatzke, 2017</u>). Research has called for further studies to examine accelerators and the accelerator process (<u>Drover et al., 2017</u>). Accelerators have attracted the attention of researchers as they provide a window into early-stage entrepreneurship, which has historically been difficult to observe (<u>Aldrich & Yang, 2012</u>).

Research related to innovation accelerators created for nurses has yet to accumulate into a robust body of knowledge. Increased research in this area can contribute additional evidence for the value of nursing and further advance the support for needed innovation resources, and easily

Accelerators have attracted the attention of researchers as they provide a window into early-

accessible education. The aim of this study was to evaluate changes in perceptions about the stage entrepreneurship... ANA-IA regarding organizational and individual innovativeness of the ANA-IA participants, via a pre and post survey. Additionally, a follow up feedback accelerator survey was used to identify experiences and lessons learned during the ANA-IA; the survey contributes to current knowledge about the value of developing innovation expertise in nurses.

## **Study Methods**

## **Design and Sample**

A quasi-experimental one group, pre-post research design was used to examine the effect of the ANA-IA on nurses' perception of individual and organizational innovativeness. This study was one of the first to quantify perceptions of nurses about organizational and individual innovativeness both before and after participating in an innovation accelerator outside of academia.

We recruited participants for the study from October-December 2022 through various methods. Nurses who had previously applied for ANA Innovation Awards and Nurse Pitch™ received an email with ANA-IA program information. The ANA Innovation website featured an open invitation for nurse educators, nurses of color, ANA innovation community members, and ANA innovation incubator participants to apply for the ANA-IA. We also utilized social media platforms, including LinkedIn®, to recruit participants. Eligibility criteria for applicants to participate in the ANA-AI study included: being a participant in the ANA Innovation Accelerator program, being a registered nurse (RN), and currently residing in the United States.

## Data Collection and Analysis

An institutional review board approved this study in the category of exempt. The survey utilized the Individual Innovativeness (II) Scale (Hurt et al., 1977). The II Scale was designed to measure an individual's orientation towards change and has been found highly reliable with good predictive validity. The second survey utilized was the Perceived Organizational Innovativeness Scale (PORGI) (Hurt & Teigen, 1977), which was designed to measure an employee perception of organizational orientations towards change. This scale has been found highly reliable (Chronbach's alpha >.90) and the predictive validity is very good.

Pre and post-intervention, baseline survey scores for both organizational and individual innovativeness reflected the following 5 categories based on Rogers Diffusion of Innovation Theory: Innovator, Early Adopter, Early Majority, Late Majority, and Laggards/Traditionalists. Table 2 illustrates the typical distribution of these categories in an organization or group (see <u>Table 2</u> below).

Data analysis included inspection of all variables for distribution, outliers, and missing data. ANA-IA participant data from both the pre- and the post-test were analyzed using descriptive statistics (e.g., means, standard deviation, and percentages) and paired t-tests in SPSS version (24). Paired t test was used to examine any changes (p<.10, significance level) between the baseline and posttest innovativeness scores. Results from the quantitative analysis were reported in aggregate format. Finally, we collected participant demographic information to include gender identity, race/ethnicity, education level, employment status, nursing licensure, work setting, and number of years practicing as a nurse.

## Figure 2. Adopter Categories on the Basis of Innovativeness (Rogers, 2003, p.281).

# Diffusion of Innovation Curve (E.M. Rogers 1962)



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## Diffusion of Innovation Theory

The Diffusion of Innovation Theory is a social science theory first published in 1962 by Everett Rogers. This theory examines why and the rate at which new ideas spread. Rogers five distinct adopter categories are briefly described in <u>Table 2</u>.

Table 2. Five types of Change	Management Adopters Ev	vertt Rogers Diffusion of	Innovation Theory
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Adopter Categories	Descri	ption Percent of a Group to Adopt a New Idea
Innovators	First to adopt change and take risks	2.5%
Early Adopters	Likely includes those who offer opinions and accept change early	13.5%
Early Majority	Take longer to adopt new ideas and not often opinion leaders	34%
Late Majority	Adopt an innovation after the average member adopts and approach change wit skepticism	h 34%
Laggards	The last group to adopt change and are change averse	16%

(Agency for Clinical Innovation, 2016).

#### Results

#### **Participant Demographics**

Seventy-eight percent of participants (n = 27) were female; 67.7% described themselves as white and 59.2% had earned graduate degrees (25.9%, PhD; 22.2% Masters'; 11.1% DNP). Current work settings of most participants were hospital/acute care facilities (67%); 85% were employed in nursing full-time. Almost half (48.1%) had 15-25+ years of experience practicing nursing.

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See <u>Table 3</u> for additional demographic information about the sample.

## Table 3. Demographic and Professional Characteristics of the Sample (n = 27)

Variable	Percentage
Gender Identity	
Female	77.8%
Male	18.5%
Nonbinary, transgender, or gender nonconforming	3.7%
*Which one of more of the following would you use to describe yourself?	
White	66.7%
Black or African American	22.2%
Asian	11.1%
Hispanic or Latino	3.7%
Prefer not to specify	3.7%
Highest Farned Degree in Nursing	
Baccalaureate degree	37.0%
Doctoral Degree Nursing Research (PhD, DNSc, ScD)	25.9%
Master's degree	22.2%
Doctoral Degree Nursing Practice (DNP ND)	11 1%
Diploma	3.7%
	5.770
*What type of work settings best describe where you work?	
Acute care hospital	66.7%
Academic program	14.8%
Ambulatory care clinic	11.1%
Care management	3.7%
Home health	3.7%
Independent practice	3.7%
Nursing home/Long term care facility	3.7%
Public or community health	3.7%
School health service	3.7%
No patient care	3.7%
Other	3.7%
*Type of License you currently hold	
Registered Nurse	85.2%
Advance Practice Registered Nurse	22.2%
*Employment Status	
Employed in Nursing Full-time	84.6%
Employed in Nursing Part-time	3.8%
Employed in Nursing Per Diem	3.8%
Employed in a field other than nursing Full-time	11.5%
Student	7.7%
Number of Years Practicing Nursing	



\*Note: Percentages do not sum to 100% due to multiple response options.

Differences between mean scores were not statistically significant for the 27 pre- and post-individual survey participants (M pre = 80.0/SD= 8.93, M post = 80.26/SD = 7.32), nor for the 23 pre-and post-organizational survey participants (M pre = 87.70/SD = 19.63, M post = 90.00/SD = 14.12). Looking at the distribution of the individual innovativeness scores in <u>Table 4</u>, for the "Early Adopter" category, there was a 15-percentage point increase from the pre- to post-survey. Scores above 80 were classified as

7.4%

"Innovators," and scores below 46 were classified as "Laggards" (<u>Table 4</u>). Similarly, there was a 17-percentage point increase in the "Early Adopter" category for the organizational innovativeness survey (<u>Table 5</u>). No participants scored as "Later Majority "or "Laggards" for the individual innovativeness survey in either pre- or post-administration.

For the organizational innovativeness survey, no organizations were identified as "Laggards" in either pre- or postadministration. Scores above 110 indicated that an organization could be classified as "Innovative." Scores below 50 indicated that an organization could be classified as "Laggards" (<u>Table 5</u>).

## Table 4. Distribution of Individual Innovativeness Pre and Post Scores (n = 27)

Adopter Category & Score Range	PR	E PO	DST	% Difference
Innovator (>80)	55.6%	51.9%	-3.7%	
Early Adopter (69-80)	29.6%	44.4%	14.8%	
Early Majority (57-68)	14.8%	3.7%	-11.1%	
Late Majority (46-56)	0.0%	0.0%	0.0%	
Laggards (<46)	0.0%	0.0%	0.0%	

## Table 5. Distribution of Organizational Innovativeness Pre and Post Scores (n = 23)

Adopter Category & Score Range	PR	E F	POST	% Difference
Innovative (>110)	13.0%	8.7%	-4.3%	
Early Adopter (91-110)	30.4%	47.8%	17.4%	
Early Majority (71-90)	34.8%	30.4%	-4.4%	
Late Majority (70-51)	21.7%	13.0%	-8.7%	
Laggards (<50)	0.0%	0.0%	0.0%	

Survey item scores for the individual and organizational surveys were examined and changes above three percentage points were selected to report. From pre to post in the individual survey there was a 7-percentage point increase in participants who identified as an inventive kind of person. There was a 7-percentage point decrease for the reverse coded items that examined suspicions of inventions, new ways of thinking, and generally cautions about accepting new ideas.

For the organizational survey results, we noted a 30-percentage point increase for the question about being "A leader among other organizations," a 21-percentage point increase for "Seeks out new ways to do things," and a 17-percentage point increase for "Creative in new methods of operation," "Very inventive," and "Frequently initiates new methods of operation." There was a 17-percentage point decrease for the reverse coded items for organizations "Who were slow to change," "Cautions about accepting new ideas," and "Reluctant to adopt new ways of doing things until other organizations have adopted them." See <u>Table 6</u> for all reported scores.

#### Table 6. Highest and Lowest Scoring Survey Items for Individual Innovativeness and Organizational Innovativeness



I am receptive to new ideas	92.6%	96%	3.7%
I feel that I am an influential member of my peer group	81.5%	85%	3.7%
I find it stimulating to be original in my thinking and behavior	96.3%	100%	3.7%
My peers often ask me for information	89.9%	93%	3.1%
# I am suspicious of new inventions and new ways of thinking	11.1%	3.7%	-7.4%
# I am generally cautious about accepting new ideas	18.5%	11.1%	-7.4%
Organizational Innovativeness			
	Pre	Post	% Difference Strongly Agree + Agree
A leader among other organizations	65.2%	95.7%	30.4%
Seeks out new ways to do things	52.2%	73.9%	21.7%
	17904	65.2%	
Creative in its methods of operation	47.070		17.4%
Creative in its methods of operation Very Inventive	47.8%	65.2%	17.4%
Creative in its methods of operation Very Inventive Frequently initiates new methods of operation	47.8% 47.8%	65.2% 65.2%	17.4%
Creative in its methods of operation Very Inventive Frequently initiates new methods of operation #Slow to change	47.8% 47.8% 52.2%	65.2% 65.2% 34.8%	17.4%         17.4%         17.4%         17.4%
Creative in its methods of operation Very Inventive Frequently initiates new methods of operation #Slow to change #Never satisfactorily explains to employees the reasons for procedural changes	47.8% 47.8% 52.2% 39.1%	65.2% 65.2% 34.8% 21.7%	17.4%         17.4%         17.4%         17.4%
Creative in its methods of operation Very Inventive Frequently initiates new methods of operation #Slow to change #Never satisfactorily explains to employees the reasons for procedural changes #Cautious about accepting new ideas	47.8% 47.8% 52.2% 39.1% 30.4%	65.2% 65.2% 34.8% 21.7% 13.0%	17.4%         17.4%         17.4%         17.4%         17.4%

## \*#Items are negatively coded

#### **Results from the ANA-IA Module Surveys**

Throughout the Innovation Accelerator monthly outcome data were captured to understand if the learning objectives of each module had been met upon completion and if participants felt they had advanced their knowledge and understanding. The samples in <u>Table 7</u> include participants who did not complete both the pre- and post-individual and organizational innovativeness surveys; this explains why the sample sizes listed are larger than the pre- and post-survey data analysis.

#### Table 7. ANA Innovation Accelerator Module Outcomes

ANA-IA Accelerator Modules	(n)	)	I was able to achieve the module learning objectives	I have advanced my knowledge after completing this module
Module 1: Human Centered Design & Design Justice	<b>n</b> = 75	99%	100%	
Module 2: Entrepreneurship & Intrapreneurship	n = 74	99%	99%	
Module 3: Measurement, Metrics, and Intellectual Property	n = 61	99%	100%	

Module 4: Funding & Commercialization	<b>n</b> = 53	100%	100%
Mod 5: Innovation Project Proposals	n = 49	100%	99%
Module 6: Innovation Project Proposals	<b>n</b> = 46	99%	99%
Module 7: Scalability & Sustainability	n = 47	99%	99%
Module 8: Storytelling, Professional Messaging, Deck Design	& <b>n</b> = 47	99%	99%

A follow up feedback accelerator survey was emailed to the forty-five participants who successfully completed the entire ANA-IA program. Twenty-six surveys were completed for a survey response rate of 58%. A 4-point Likert scale (i.e., strongly agree, agree, disagree, strongly disagree) was used to capture responses for the following questions listed in <u>Table 8</u>.

## Table 8. Follow up Feedback Accelerator Survey Questions (n = 26)

Post Accelerator Survey Questions	Percentage Strongly Agree or Agree
I have used the information I learned from the ANA-IA to advance my innovation project/ work?	92%
I have used the information I learned in the ANA-IA to lead in my professional role?	92%
After participating in the ANA-IA, I am more prepared to advance or lead positive change across nursing and healthcare?	100%
I would recommend the ANA-IA to my nursing colleagues?	100%

In the follow up feedback accelerator survey, we included two open ended questions. Narrative responses were analyzed and five broad themes emerged. These themes are summarized in <u>Table 9</u>.

#### Table 9. Follow up Feedback Accelerator Survey Responses (n = 26)

Question: How have you professional role?	u used the information you learned in the ANA IA to advance your innovation project/work, nursing practice, or
Role and Leadership Development	• Participants have used the knowledge gained from the accelerator to thread innovative ideas into academic nursing curriculum and shape nursing resource development for innovation.
	• Participants have been able to motivate others to embrace innovation and found increased confidence in leadership to promote change in healthcare.

• Participants stated they have grown in the qualities of validation, gratitude, and determination.

Business Entrepreneurship/ Intrapreneurship

Participants have explored patent ideas, launched businesses, and learned how to bring an innovation project from start to finish. They have developed business models, stakeholder and competitor analyses, value propositions, and learned how to pitch to key stakeholders.

#### Dissemination

• Participants have embraced the art of storytelling, and shared innovative techniques and learnings with leaders, nurse residents, colleagues, students, and international partners.

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Network & Collaboration	• Participants have used the information to build innovation workshops and collaborate with multi-disciplinary stakeholders using human-centered design.
	<ul> <li>Participants stated that the ANA-IA provided new innovation networks, connections, and an encouraging, hopeful, and inspiring community of support where they could raise their voice, take up space, and create meaningful change.</li> </ul>
Question: If all nurses had	access to the ANA IA, how would this impact nursing?
Summarized Responses	Participants believe this would:
	• make nurses the leaders of positive change, developers of solutions, and empower nurses to create needed changes in healthcare.
	• give nurses the tools and insights to unlock their inner inventors, and advance how nursing is practiced.
	• [or could] allow more innovation at the bedside, improve nurses' confidence and perceived ability to innovate, and bring more products to market.
	• would help more nurses be open to innovation practice, change management, and spur the next generation of entrepreneurs and innovators in and outside of healthcare.

#### Discussion

The leaders of the ANA-IA were intentional about ensuring that nurses of color had an opportunity to engage in accelerator. One key principle of the ANA Ethos of Innovation (<u>Beaudet et al., 2023</u>) focuses on justice, equity, diversity, and inclusion. The leaders of the ANA-IA were intentional about ensuring that nurses of color had an opportunity to engage in the accelerator. According to Smiley et al. (<u>2023</u>), in 2022, RNs in the United States identified themselves as White/Caucasian (80%), Asian (7.4%), Hispanic (6.9%), Black/African American (6.3%), more than one race (2.5%), Native American or Alaska Native (0.4%), and Native Hawaiian or other Pacific Islander (0.4%). ANA-IA participants included

larger numbers of underrepresented groups in some cases, particularly those who identified as Black or African American (22%) and Asian (11%). Although the number of participants who identified as Hispanic in our accelerator (3.7%) is not greater than the 2022 demographic data provided by Smiley et al. (2023) above, these nurses did contribute to overall representation of slightly more than one third of participants who were nurses of color; this also does not reflect the few who preferred not to say (3.7%) but could have also increased that total (refer to <u>Table 3</u> as needed). Actualizing our ethos of innovation has initiated a higher level of participation from nurses of color when compared to these recent demographics of the nursing profession and thus positioned nurses of color to lead innovative work across the nursing profession.

ANA-IA participants identified themselves using the Rogers Diffusion of Innovation Model categories as innovators, early adopters, or early majority. ANA-IA participants did not identify their individual innovativeness in the late majority of laggard categories. This may have been attributed to the lack of change in the pre and post mean individual innovativeness scores.

...early adopters are viewed as the champions of organizational change...

Findings showed that from an individual innovativeness perspective, participants had a 14% increase in the early adopter category; they demonstrated a 17% increase in organizational innovativeness in that same category. These findings are important as early adopters are viewed as the champions of organizational change and often influence colleagues in the early and late majority categories to adopt innovations sooner (<u>Rogers, 2003</u>).

Nurse educators were drawn to the ANA-IA; 59% of accelerator participants had graduate degrees. Literature that discusses innovation has suggested that a desire to learn is at the core of the innovation process (<u>Hill et al, 2014</u>). The desire to incorporate professional development and life-long learning may have led to the large participation of nurses who engaged in furthering their educational endeavors.

Literature that discusses innovation has suggested that a desire to learn is at the core of the innovation process. Another key finding revealed that 92% of accelerator participants stated they used the information learned in the accelerator to advance their innovation project/work and/or lead in their professional role, and 100% of participants felt more prepared to advance positive change across healthcare. All participants indicated that they would recommend the ANA-IA to a colleague. Narrative statements offered evidence that the ANA-IA was an impetus to motivate

others and provided increased confidence to support change in healthcare. Accelerator participants suggested that if all

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nurses had access to the ANA-IA, innovation at the bedside would increase and nurses would be empowered as leaders of change and developers of healthcare solutions. Accelerator participants felt this experience might spur the next generation of entrepreneurs and innovators.

## Implications for Healthcare and Nursing Practice

Analysis of the ANA-IA survey data revealed the importance of fostering and maintaining a learning community for nurses interested in innovative knowledge and practice. The ANA-IA provided a safe learning environment for participants to ask questions and reflect on their innovation development journey. Fostering the confidence, deep insights, and expertise of nurses may create broader opportunities for nurses to engage in innovations, which may lead to an excellent return on investment (<u>Melnyk & Raderstorf, 2021</u>).

The ANA-IA created structured innovation education that allowed participants to systematically understand the process of innovation, the related components of innovation measurement, the scalability and sustainability of innovation practices, and the critical need for organizational resources and support to ensure the emergence of innovation ecosystems. This framework may provide a blueprint to advance innovative practices within academic and healthcare settings and provide current and future learning opportunities for nurses. The ANA-IA can continue to be

The ANA-IA provided a safe learning environment for participants to ask questions and reflect on their innovation development journey.

leveraged as a catalyst for insight and driver of transparency around the role that innovation accelerators play in shaping the future of innovation ecosystems.

## **Study Limitations**

There were limitations to this study. The small sample size limits the ability to generalize the results. Nurses who were already interested in innovation applied to participate in the ANA-IA. Further research is needed to determine the effect of the ANA-IA on nurses who do not have a current interest in innovation. This study was limed to nurses living in the United States. An international nursing perspective would add insights as to the ANA-IA effect on the global innovation ecosystem. Nurses who were accepted into the ANA-IA indicated that they had dedicated time (4-6 hours a month) to participate in the completion of the monthly requirements. This may have been a barrier for those with longer work schedules and other life priorities that prohibited the ability to complete the necessary requirements. Further research is needed to explore how innovation accelerators may act as an intermediary to potentiate the likelihood of innovation practice, leadership, and organizational capacity for innovation uptake.

## Conclusion

Innovation science and innovation education are emerging areas of nursing practice. The ANA is committed to the utilization of innovation knowledge, research, and practice to address healthcare complexities. The ANA-IA positions nurses to lead in traditional and non-traditional work environments and expands the innovative potential of nurses to improve the healthcare ecosystem. These spaces and systems can be fortified by nurses who exhibit astute business acumen, promote cross-industry collaborations, and apply synergistic thinking practices to bridge existing healthcare silos.

Innovation science and innovation education are emerging areas of nursing practice. Results of this study indicate the importance of healthcare and nursing leaders to promote opportunities to engage in innovation accelerators that support nurses along the continuum of their professional journey and innovative endeavors. It is imperative that all nurses have access to education about innovation and resources to advance their knowledge, skills, and strategies with a goal to positively transform local, national, and global healthcare ecosystems. The future of our

profession will be galvanized through a novel paradigm in which nurses and innovation are inextricably linked in perpetuity.

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**Citation:** Lemberger, O., Beaudet, O., Bellegarde, K., (January 31, 2025) "The ANA Innovation Accelerator: Galvanizing the Future of Nursing" *OJIN: The Online Journal of Issues in Nursing* Vol. 30, No. 1, Manuscript 1.

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