SURGEONS AS EDCUATORS: THE IMPACT OF FACULTY DEVELOPMENT AIMED TO EMPOWER SURGEONS TO PROMOTE LEARNING IN RESIDENTS, FELLOWS AND PRACTICING SURGEONS ACROSS THE CONTINUUM

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ABSTRACT

Surgeons, given their knowledge, skills, and experience in patient care, are often the primary educators of residents, fellows, and practicing surgeons. However, their lack of formal training in instructional practices may limit their effectiveness in the classroom. This study examined the importance of faculty development for surgeon educators who teach across the continuum of surgical education. The study setting was a premier annual surgical meeting hosted by a not-for-profit medical membership organization, attended by residents, fellows, and practicing surgeons. Faculty in two didactic courses were invited to join the study. Since surgeons are primarily trained as healthcare providers, they have limited opportunities for faculty development to enhance their teaching roles. For this study, faculty development encompasses fostering a sense of community, building an educator identity, and enhancing teaching and presentation skills. The study also addresses surgeons' limited resources and the need for structured training in teaching. Data were collected through a survey with closed- and open-ended questions, along with a focus group held six weeks after the meeting. Participants also received educational resources before their teaching assignments. Findings suggest that faculty development enhances surgeons' teaching effectiveness but must be tailored to individual needs. The study's key implications for practice emphasize that appropriate faculty development improves knowledge transfer and skill acquisition for learners while fostering lifelong learning that benefits educators, learners, and, ultimately, patients.

DEDICATION

This work is dedicated to all the surgeons who have taken the solemn oath to do no harm—those who commit themselves each day to the well-being of their patients, often under immense pressure and with unwavering resolve. Your pursuit of excellence, tireless work ethic, and deep sense of responsibility are a testament to the nobility of your profession.

I hope this research can serve as a small contribution to your lifelong journey of learning and growth.

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INTRODUCTION

Introduction

A teacher should have subject matter expertise to be effective, but is this enough? Adult learning theory recommends that successful adult education must go beyond content knowledge and adhere to andragogy principles. Malcolm Knowles (1970) labeled andragogy the "art and science of helping adults learn," and it is considered critical to effective teaching and learning.

Surgeons are most often the teachers of residents, fellows, and practicing surgeons, given their knowledge, skills, and experience to competently care for patients. However, the fact that surgeons are often not trained in instructional practices as teachers potentially limit their effectiveness as educators. Given the importance of training surgeons and promoting meaningful lifelong learning while increasing human health services overall, this study stresses how essential it is that surgeon educators are provided with foundational knowledge and skills to be effective teachers. The significance of offering faculty development to surgeon educators who instruct residents, fellows, and practicing surgeons across the continuum is discussed in this study.

Background Information

This study focuses on a not-for-profit medical membership association with 90,000 members/individuals. The membership association hosts a premier annual surgical meeting for practicing surgeons, residents, medical students, and surgical team members. Each year, approximately 7,500 surgeons gather to learn from leaders worldwide, featuring over 350 educational sessions (American College of Surgeons, n.d.-d). As sessions are created for the meeting, surgeons are suggested to moderate and speak. Often, names are suggested because the surgeon is an expert in the field. Expertise in their subject matter alone does not make speakers

effective teachers. The majority of clinical teachers lack formal education in education, and faculty development for clinical teachers is hampered by low enrollment, insufficient knowledge transfer, and unreliability (Cantillon et al., 2019).

This study focused on the didactic courses held at this premier annual surgical meeting in 2023. These courses are four to six hours long and are organized and taught by senior-level surgeons (American College of Surgeons, n.d.-c). Each didactic course has a moderator and co-moderator and an average of eight speakers per course for a total of 10 faculty. Faculty in two courses (for a total of 30 invitees) were offered faculty development opportunities, including pre- and postconfidence surveys and various resources to enhance their teaching skills as they prepared for their respective courses.

Statement of the Research Problem

Surgeons' educational background has been focused on science and medical education. They are asked to teach in various didactic settings as they advance in their careers because of their expertise. Surgeons are trained to be healthcare providers and have limited opportunities for faculty development to optimize their role as surgeon educators to residents, fellows, and practicing surgeons across the continuum.

One could argue it is unfair to expect them to be effective in a teaching role. Teaching in a clinical setting is different from teaching in a classroom setting. Also, since the pandemic, there has been a hybrid component to educational offerings that require different teaching skills. Education is necessary for medical proficiency, including teaching patients, trainees, and colleagues (Meyer et al., 2022). It is critical to offer meaningful education with a positive impact on learners. How does faculty development impact surgeons' role as surgeon educators to residents, fellows, and practicing surgeons across the continuum?

Background Information/Context

The term *faculty development* has a variety of meanings in the medical profession. For this study, faculty development encompassed the sense of community, identity as an educator, the value of teaching, and presentation skills. This study explored surgeons' limited resources and the importance of training surgeons to teach.

Faculty Development

Empirical research reinforces the importance and benefit of faculty development for surgical educators. In order to improve surgical education for our residents, it may be helpful to understand the features of effective surgical educators and to cultivate and improve these traits (Dickinson et al., 2021). In many healthcare institutions, faculty development is constrained and underfunded. Surgeons are the only experts qualified to instruct residents, fellows, and practicing surgeons across the continuum because of their expertise and knowledge. "See one, do one, teach one" is the classic surgical teaching approach (Kotsis & Chung, 2013). The authors stated that, when paired with other adult learning concepts, the foundation of the conventional teaching approach remains relevant in surgical training (Kotsis and Chung, 2013). Physicians are given the right and duty to study throughout their careers and to impart what they have learned to others as a result of their profession of choice (Whicker & Nagler, 2020).

The Accreditation Council for Graduate Medical Education (ACGME) Common Program Requirements has a new annual requirement that all faculty must pursue faculty development to enhance their skills as educators (Accreditation Council for Graduate Medical Education, n.d.). There are many changes within the scope of patient care, and being the content expert sharing knowledge is no longer adequate for educating the next generation of physicians. These modifications call on graduate medical education faculty to take on new responsibilities

and carry out their current duties with more expertise, all the while upholding the longstanding goal of training the next generation of doctors (Simpson et al., 2019).

Sense of Community

A community can support a surgeon educator in a variety of ways. There can be a sense of belonging when grouped with people interested in the same things, such as teaching. For instance, some people value their clinician and researcher identities more than their teacher identities because they believed that their communities would support these identities more (Cantillon et al., 2019). We are missing opportunities among medical educators when there is no sense of community. An editorial written by Sklar (2016) in *Academic Medicine* describes various studies on creating a supportive community among medical educators. In one qualitative study provided by Coates et al. (2016), one participant stated:

> Everybody says when they leave the program, they feel re-invigorated, re-energized, and connected with people who love to teach. It is their passion, but not necessarily culturally valued. So, I think that creating the community within the system is the most important [benefit] for these folks. It's really an antidote to burnout. (p. 1699)

Communities can offer inspiration, networking opportunities, and mentorship outside of their academic setting, which might be more collaborative and less threatening. Listservs, X, Linked In, and other social media sites can foster community.

Identity as a Teacher

Faculty development includes professional identity as educators. In the current state of medicine, surgeons have a complex role where patient care is not their only responsibility. They are juggling their dual roles as clinicians and educators while juggling budgets, staffing

challenges, and other administrative issues. Programs for faculty development can be utilized to examine and bolster the professional identities of faculty members (Sklar, 2016).

As they advance in their careers, surgeons—who are lifelong learners—teach in all phases of their careers whether they identify as teachers or not. Whicker and Nagler (2020) argued that doctors are not obligated to practice medicine exclusively using the skills they have acquired from their previous formal education and training. The authors further noted that to become well-rounded doctors in the present period, each person must continue developing as a researcher, leader, and teacher, someone who values their own health just as much as their patients, and in other areas. They educate patients and their families daily about medical diseases and treatments. Medical schools claim to be committed to the teaching purpose, but faculty members frequently struggle to establish and uphold their identities as educators (Steinert, 2001). Everybody's sense of identity is unique, and it might look and feel very different throughout their career.

Value of Teaching

Our society should place a higher value on teaching overall. School teachers are typically among the lowest-paid employees, and it is obvious that they do not teach for the salary they receive. This lack of value for our teachers continues to spread among surgeon educators. Budden and colleagues (2017) performed an empirical investigation of the motivations of teachers. The researchers interviewed 15 top-ranked surgeons at the University of Alberta. The outcomes of the study were as expected, given the purpose of teaching. The following were the top five reasons why highly regarded surgeons taught:

> "(1) a sense of responsibility to teach future physicians (2) an intrinsic enjoyment of teaching (3) the need to maintain and expand one's own knowledge base

> (4) watching students develop into competent practicing physicians and playing a role in their success, and (5) fostering positive lifelong professional relationships with learners." (Budden et al., 2017, p. 188).

The medical profession requires surgeons to be lifelong learners to succeed. Throughout a surgeon's career, medical education goes through different stages. It begins with undergraduate medical education, moves to graduate medical education, and is followed by continuing medical education (CME). To keep their license current, physicians require a certain number of hours each year of CME. The tenets of professional self-regulation and shared accountability between regulatory authorities and physicians are the foundation of the U.S. system for ensuring public confidence in physician competence (McMahon, 2024). All these educational opportunities, voluntary or mandated, are vital to the careers of surgeons, so we must continue to nurture surgeons to be skillful educators.

Presentation Strategies

There is no substitute for a great presentation that resonates with the learner beyond the classroom setting. Strong evidence suggests that students are more engaged with teachers who are more effective (Stephenson et al., 2020). While speaking to learners, several strategies are used to ensure they are engaged, even by experts on the subject. Horiuchi et al. (2022) discussed how speakers can use simple techniques to improve their presentation skills, including telling a story, using body language, and moving around. The authors further noted that effective presentation design is not an intuitive process; it is a skill, a type of art, and an engineering process that takes time and effort. Offering simple, tangible presentation strategies to presenters can increase the speaker's confidence, which offers a better teaching experience for the educator and a better learning experience for the learner.

Surgeons Are Not Trained Educators

Many clinical teachers are picking up their skills on the job in the absence of structured faculty development (Cantillon et al., 2019). Surgeons' educational focus has been on science rather than education and adult learning theory. In the medical student curriculum, medicine and science are the focus of the educational content with limited opportunity for other subjects. Clinical teachers are critical determinants of the quality of clinical learning environments, yet most clinical teachers have not been trained to teach (Cantillon et al., 2019). It is in the best interest to train the surgeons to offer meaningful education positively impacting learners.

Limited Time and Resources for Surgeons

Given all of their various clinical and educational demands, faculty are aware that they must develop new skills and strengthen current competencies as educators to fulfill their changing educational duties (Simpson et al., 2019). Hospitals and healthcare systems must be profitable to continue offering healthcare services. There is inconsistency among healthcare systems and institutions with regard to training resources for surgeons. Sachdeva et al. (2021) noted that surgical faculty find it difficult to promote educational contributions because of the increasing urge to focus on financially rewarding endeavors. Some institutions do not go beyond the occasional, nonclinical lecture on teaching, and other institutions greatly support and encourage surgeons to become educators with faculty development programs.

Synthesis or Summary of the Research Problem

This study showed that faculty development is critical to surgeons as they teach residents, fellows, and practicing surgeons throughout the continuum of their careers. All medical education is based on learning theories, which are supported by educational research and gives

educators a greater understanding of how students learn (Sachdeva et al., 2021). Surgeons, who are trained as healthcare providers, have limited opportunities for faculty development.

Research Purpose and Question

The purpose of the research was to evaluate how faculty development optimizes surgeons' role as surgeon educators to residents, fellows, and practicing surgeons across the continuum. The main research question for this study was as follows: How does faculty development impact surgeons' role as surgeon educators to residents, fellows, and practicing surgeons across the continuum?

Definitions and Assumptions

Andragogy—The art and science of helping adults learn (Knowles, 1970).

Faculty development—Curriculum that has been carefully thought out and designed to equip universities and faculty members for their different tasks, including teaching, research, and administration (Steinert, 2011).

Didactic courses—Longitudinal postgraduate courses focusing on acquiring information and skills using the most effective training and education methods (American College of Surgeons, n.d.-c).

The assumption for this study was that offering faculty development to the surgeons of the didactic courses at the surgical meeting would allow the surgeon educators to offer more meaningful education to the learner.

Significance of the Study

Surgeons are integral to teaching the next generation of residents, fellows, and practicing surgeons across the continuum. As teachers, they need to understand foundational knowledge

and skills to be effective. Offering faculty development that utilizes adult learning theory principles with resources benefits both the learner and the surgeon educator.

Chapter Summary

This introduction explained the importance of providing faculty development to surgeons who teach residents, fellows, and practicing surgeons across the continuum. The literature cited in Chapter 2 will discuss several strategies to improve surgeons' teaching abilities and efficacy, as well as the significance of faculty development. The methodology and techniques discussed in Chapter 3 include opportunities for faculty development, surveys of faculty confidence before and after the didactic courses and participant focus groups. Chapter 4 contains the study's findings and results. Chapter 5 contains the analysis and discussion, answer to the research question, implications for practice, limitations and suggestions for future research.

CHAPTER 2:

LITERATURE REVIEW

Introduction

Surgeons are trained to be healthcare providers. They have limited opportunities for faculty development in instructional practices to optimize their role as surgeon educators to residents, fellows, and practicing surgeons throughout the continuum of their careers. The complexity of surgical patient care, changes in surgical technologies, and the financial and regulatory landscape of surgical care delivery necessitate that surgeons have access to excellent educational opportunities and engagement to support their work and promote job satisfaction and effectiveness (Bass, 2019). The purpose of this study was to showcase the impact of faculty development on surgeon educators and the necessity of such development as it relates to continuous professional development. The study focused on how faculty development can help create a sense of community among surgeon educators, build a strong teacher identity, and improve the perception of the value of teaching and the significance of delivering effective presentations. The study further highlighted that surgeons are not trained educators but subject matter experts, and due to the constraints of their current practice, they have limited time and resources for facilitating faculty development.

The literature review suggested that faculty development is essential and necessary; however, it is not always a top priority for institutions or faculty members themselves. It has been suggested that a culture of valuing and rewarding those who are committed to teaching be established in medical education (Hatem et al., 2011). This chapter presents studies that reinforce that surgeons are trained to be healthcare providers and have limited opportunities for faculty

development in instructional practices to optimize their role as surgeon educators to residents, fellows, and practicing surgeons throughout the continuum of their careers.

Faculty Development

For decades, there has been discussion about the importance of faculty development for physicians (Leslie et al., 2013; Steinert, 2000). More specifically, work has been done to understand the role of faculty development for surgeons (Kahn et al., 2013). Most of the literature highlights faculty development programs that have been offered to surgeons focusing on clinical teaching—at the bedside or in the operating room (Cochran & Dalrymple 2019; Gardner et al., 2019; Peyre et al., 2011). A breadth of surgeon faculty development programs relates to feedback and assessment (Steinemann et al., 2021). However, little literature exists that describes faculty development programs to enhance classroom teaching skills, although they have been identified as important. Deal and colleagues (2018) sought to understand the critical components of faculty development programs for surgeons. Using a modified Delphi methodology, they found that evaluating residents, coaching for teaching, and interoperative teaching were the priorities for surgeon faculty development.

The work by Dickinson et al. (2021) illustrated the role of both intrinsic characteristics and teaching methods that impact the effectiveness of surgeon educators. The authors researched how learning preferences and teaching methods may affect a surgical educator's perceived effectiveness. The study included all general surgery residents and attendings at an urban academic institution (n = 29). The researchers utilized existing validated instruments to determine learning preferences and teaching styles of attendings and measured teaching effectiveness with resident evaluations and faculty self-assessments. Dickinson et al. found that the effectiveness of surgical educators is influenced by their teaching methods. While the study

focused somewhat on the "intrinsic" factor that may play a crucial role in effectiveness as a surgical educator, it also addressed teaching styles, which the authors surmised could be impacted by faculty development. The authors did note the small sample size as a limitation and encouraged future work to delve further into potential relationships between teaching style and effectiveness of education and, ultimately, how this might be addressed with faculty development.

Whicker and Nagler (2020) discussed continuing professional development (CPD) for physicians in a chapter of the *Handbook of Research on the Efficacy of Training Programs and Systems in Medical Education*. There are various terms for CPD, such as "faculty development, professional development, lifelong learning, continuing education, and career development," (p. 357) all referencing the critical need for lifelong learning beyond conventional medical education training programs. The authors maintained that the purpose behind lifelong learning is that the medical educator must build and enhance competence and a career path that is appropriate to the complexity of practicing medicine while promoting and supporting high-quality healthcare. This career path, for many, will include teaching medical students, residents, healthcare team members, and colleagues. Whicker and Nagler (2020) also suggested that there are other benefits and rewards to CPD. These might include individual motivation, self-determination, and meeting regulatory requirements, including state, specialty board, and employer requirements. Their chapter discussed how the importance of staying competent and confident is essential for a practicing physician's psychological well-being and career success, and maintaining competence in all areas can be challenging, making CPD crucial. The authors noted that due to the constantly changing nature of medicine and the various roles that physicians play, extensive CPD or lifelong learning is necessary. Finally, Whicker and Nagler (2020) discussed obstacles and

barriers to lifelong learning, which can include inadequate employer support or lack of accessible, high-quality educational programs. These are issues to consider when building and delivering faculty development to enhance teaching and or any other skill beyond the training provided to care for patients.

The ACGME Common Program Requirements has implemented an annual mandate that obliges all faculty members to engage in faculty development activities to improve their skills as educators (Accreditation Council for Graduate Medical Education, n.d.). The accreditor recognized the importance of well-trained physicians in their role as educators and how this impacts the next generation of physicians. The ACGME program criteria are a fundamental set of guidelines for educating and preparing medical residents and fellows and include a requirement that core faculty participate in training as educators. Under the guidance of faculty who not only teach but also serve as role models of "excellence, compassion, cultural sensitivity, professionalism, and scholarship," (p. 3) postdoctoral fellows learn how to contribute to the best possible patient care during this crucial stage of the continuum of medical-related education. Such interactions are made valuable, relevant, and meaningful by qualified faculty members. The Common Program Requirements also suggest that this type of education trains medical students and graduate students to become specialists who can provide care for patients, their families, and diverse communities. They learn to create and apply new knowledge to their practice and teach future generations of specialists to serve the public. Lastly, the program maintains that the practice patterns established during this education continue to influence faculty member's work for many years while "establishing the foundation for practice-based and lifelong learning" (p. 3).

Steinert (2020) conducted a comprehensive review of all the issues of *Medical Teacher,* a journal on medical education for educators in the healthcare field, from the past 40 years. The author used the search terms: "faculty development, staff development, professional development or in-service training for faculty" (p. 429). The study found a significant rise in publications related to improving faculty development, primarily through teaching enhancement and conventional methods such as workshops, short courses, and other group activities.

In conclusion, faculty development is an essential component of a resident, fellow, and practicing surgeon's career. Deal et al. (2108) aimed to identify the key components of faculty development for surgeons. By improving their teaching abilities, they can impart their knowledge and expertise in a structured and powerful manner. Whicker and Nagler (2020) observed that extensive CPD or lifelong learning is necessary due to the constantly changing nature of medicine and the various roles that physicians play. Faculty development can also cultivate a strong foundation within residents, fellows, and practicing surgeons by fostering a culture of continuous learning.

Sense of Community

Medical educators receive different kinds of community support, and being among people who share your passion for teaching can create a feeling of belonging. An editorial by Sklar (2016) discussed the value of community. Sklar began with three different scenarios, all within a 24-hour period, whereby the author helped his colleagues with various aspects of faculty development. Although there is no clear strategy for advancing a faculty member's career, faculty move from being competent to being experts and engage in activities that lead to the development of new healthcare models, the discovery of novel clinical treatments, and the ability to impact the future careers of health professionals through teaching. Sklar noted that faculty are

frequently left floundering without direction because chairs are pulled in too many directions, especially clinical chairs who are responsible for overseeing clinical operations. Many exceptional professors are not being utilized to their full potential because they serve clinical demands while ignoring their own development and formation of identity. Finally, Sklar stated that we are accountable for helping our students and residents become the best versions of themselves and that we should also be responsible for helping teachers become the best versions of themselves.

Many academic medical centers, hospitals, and specialty societies have established academies. Over the years, their numbers have increased, serving as a haven for educators in the healthcare profession. Gooding et al. (2016) examined the role of medical education academies in the acclaim and professional development of educators. The study's focus was on The Boston Children's Hospital Academy, which was established in 2008. The Academy was accessible to both senior faculty mentors and junior faculty scholars, as well as interprofessional educators. To maintain membership, the member must propose, work on, or act as a project mentor to junior faculty. Four years after the start of the Academy, a survey was sent to all members. Sixty-five members completed the survey. The majority of participants stated that the Academy fostered a sense of community among educators, offered chances for networking and scholarship, shaped their individual identities as educators, and resulted in chief recognition. Members generated an average of 4.4 educational presentations and 1.9 educational publications during their time in the academy (mean period of membership being 2.4 years), and 11 members were promoted to higher positions at the hospital. According to the researchers, a hospital-based academy offers chances for the growth of interprofessional faculty. The authors suggested that further steps should include expanding the number of interprofessional members, disseminating member

accomplishments more widely, better integrating the academy with the hospital's mission (particularly with regard to patient safety and graduate medical education), and conducting additional evaluations of the academy's effects on project completion. Gooding et al. proposed that collectively, these steps will help foster the development of collaborative communities among educational scholars, leading to an improvement in patient safety and quality.

In 2017, The American College of Surgeons (ACS) developed the ACS Academy of Master Surgeon Educators (American College of Surgeons, n.d.-a). The mission of this Academy is to take the lead in fostering the greatest successes possible for surgeons throughout their careers by expanding the science and practice of education across all surgical specialties. The Academy's objectives include identifying major trends in surgical education and training, directing research, encouraging collaboration and innovation, promoting faculty development, and highlighting the critical role of surgical education and training in the evolving healthcare environment. The Academy has published scholarly articles with its members, organized an annual symposium that brings Academy members together to share best practices and discuss important subjects in surgical education and development, and hosted a special session at the Clinical Congress on current and significant surgical education themes. The Academy conducts virtual grand rounds, which are designed to engage participants in spirited debate with authorities on surgical education. The "fireside chat" series consists of casual conversations with legendary figures in surgery and other medical specialties, during which participants can gain knowledge and insight. The Academy's various programs aim to foster a sense of community among its 350 members by providing diverse platforms for interaction and networking.

Academies Collaborative is a community for excellence in health service education sponsored by the Association of American Medical Colleges (Academies Collaborative, n.d.).

Academies Collaborative supports and advocates for teaching academies and comparable institutions to advance and honor the brilliance of educators in the health professions. Its vision is to develop into a national network of academies that foster institutional support for teachers and quality in health professions instruction. Academies Collaborative maintains that the size and quantity of medical and health sciences academies are growing domestically and abroad. Although the exact aims and goals of academies differ, advancing the educational mission of their schools, hospitals, or departments is the main area of mutual interest. According to the Academies Collaborative website, there were only two academies in 2001. The Academies Collaborative now lists more than 80 organizations as members, primarily in the United States. The website further explains that academies serve as a focal point for fostering and establishing learning communities, enhancing the educational climate at their institutions, offering cutting-edge professional development for faculty in teaching and learning, encouraging innovation and education scholarship, and advancing the careers of clinician educators. The Academies Collaborative hosts an annual meeting and produces a quarterly newsletter for all members.

Overall, it is very clear that a sense of community plays a vital role in medical education, providing support and fostering growth among educators in the healthcare profession. Research has shown that competent faculty members can become experts and engage in activities that lead to the development of new healthcare models, the discovery of novel clinical treatments, and the ability to shape the future careers of health professionals through teaching (Sklar, 2016). The benefits of a community for surgeon educators include the development of identity, recognition, networking opportunities, and scholarly publications. The importance of a community of educators highlights the necessity to integrate and expand programs that foster a sense of belonging. Most participants at The Boston Children's Hospital Academy reported that the

academy created a sense of community among educators, provided opportunities for networking and scholarship, and helped shape their individual identities as educators (Gooding et al., 2016). A sense of community can have a positive impact on surgeon educators and their overall growth.

Identity as a Teacher

Cantillon et al. (2019) studied how faculty developers should consider the ability of clinicians to become efficient teachers while working. The study found that this understanding is essential for designing successful workplace-based faculty development programs. The authors did a scoping review of research conducted on the connection between clinical teachers and the clinical settings in which they work. They searched 12 databases for literature from 1960 through June 2017, using primary search terms including but not limited to teacher identity, educator identity, teacher role, educator role, and clinical educator. According to Cantillon and colleagues' research on individualism, how clinicians, researchers, and teachers perceive and reconcile their identities can affect their openness to new teaching practices and participation in faculty development. Finally, the authors noted that clinicians managed to harmonize their roles as both teachers and healthcare providers by striking a balance between the two.

Steinert (2001) illustrated how the identity of a teacher is significant since it can have a substantial impact on career choice and intellectual obligations, as well as offer possibilities for professional growth. The authors noted that the majority of faculty development programs place more of an emphasis on knowledge and skill development than on fostering or enhancing professional identity. They presented tactics to strengthen identity in professional development programs, such as integrating identity and identity formation into current offerings by posing identity-related questions, including identity in longitudinal programs; creating opportunities for networking and community building; encouraging reflection; and utilizing mentorship. Finally,

they discussed how a teacher's identity could be awakened, strengthened, and supported via programs or activities for faculty development. Steinert et al. maintained how identity could be implicitly triggered by identity-related questions incorporated into current faculty development activities, and it can be explicitly promoted through longitudinal programs, networking opportunities, communities of practice, reflection, mentoring, identity workshops, and organizational support.

Triemstra et al. (2021) studied the initial effects and characteristics of how clinical-educators form their professional identities. The study involved a diverse group of individuals from various age groups and specialties in the United States. They maintained that the body of knowledge on the formation of the clinician-educator identity has grown. However, there are still gaps in our knowledge of the early factors that shape an educator's identity, how to maintain it during a career, and how to create successful routes for early clinician-educators. The method used was an intentional sample of medical educators from six universities across the United States who participated in this cross-sectional qualitative study between 2018 and 2019. The study included 12 focus groups for a total of 93 participants. Themes included the value of role models and mentors, an inclination and aptitude for teaching and education, specific entry-level career facilitators in medical education, the transition from layperson to professional, the significance of established training programs, and the value of a supportive academic community. Triemstra et al. concluded that clinicians encountered a range of reasons that affected their initial decision to pursue a career in medical education and the subsequent development of their professional identities as clinician-educators. Finally, the authors recommended that as they mentor and assist their students and faculty, educators and

administrators who are establishing career development programs across the continuum of medical education should take these factors into account.

Value of Teaching

The Accreditation Council for Graduate Medical Education, the Accreditation Council for Continuing Medical Education, the Association of American Medical Colleges, and the American Association of Colleges of Osteopathic Medicine collaborated to create the Clinician Educator Milestones (CEM; Accreditation Council for Graduate Medical Education, n.d.). The goal of the CEM is to establish a set of subcompetencies to support the growth and enhancement of teaching and learning abilities throughout the medical education continuum. The CEM offers a system for evaluating the teaching abilities of academic staff who work in undergraduate, graduate, or CME. Faculty members can utilize these benchmarks to gauge their own effectiveness as teachers or to share comments and evaluations with dependable peers. The end purpose of these milestones is to arm faculty members with resources to support their ongoing professional development as teachers. In the CEM, each subcompetency offers a stand-alone examination of a particular teaching technique or ability and covers a separate area of professional development. With the CEM, educators can focus on specific milestones according to their preferences and needs. The CEM provided a supplemental guide for additional guidance. The supplemental guide can be used to assist in self-assessment or peer assessment and focuses on five competencies:

- Universal Pillars for All Clinician Educators: Demonstrate the commitment to lifelong learning and enhancing one's own behaviors as a clinician educator.

- Educational Theory and Practice: Ensure the optimal development of competent learners through the application of the science of teaching and learning to practice.
- Well-Being: Apply principles of well-being to develop and model a learning environment that supports behaviors which promote personal and learner psychological, emotional, and physical health.
- Diversity, Equity, and Inclusion in the Learning Environment: Acknowledge and address the complex intrapersonal, interpersonal, and systemic influences of diversity, power, privilege, and inequity in all settings so all educators and learners can thrive and succeed.
- Administration: Demonstrate administrative skills relevant to their professional role, program management, and the learning environment that leads to the best health outcomes (Accreditation Council for Graduate Medical Education, 2022, p. 4).

Additionally, the CEM provides a detailed breakdown of competencies, grouping them into pillars and listing milestones for each level. It offers examples for each milestone and level. Finally, the CEM provides a set of resources, which includes references, for the learner to use under each pillar. The Clinician Educator Supplemental Guide is intended to assist educators in assessing their own success and formulating a plan for their professional advancement.

The work by Budden et al. (2017) discussed the driving forces behind the teaching efforts of top surgical instructors. The authors found it remarkable that, so few authors have looked at what motivates doctors and surgeons to educate, given how important it is to the survival of the medical profession. Their study used semi-structured interview transcripts that were analyzed

using a grounded theory methodology. The study reported that there are five basic reasons why surgeons choose to educate. These reasons included: a sense of obligation to mentor aspiring doctors, a genuine love for instructing, the drive to keep learning new things, developing positive and long-lasting professional relationships with learners and seeing students grow into capable practicing doctors. They maintain that there are many questions that still need to be asked and perhaps focusing on surgeons who do not seem to be all that interested in passing along knowledge could yield very useful information. Finally, the authors did note that this discovery has several implications. To begin, the notion that surgeons are unapproachable and disinterested in providing top-notch education to students is an obsolete stereotype. They discussed that when addressing physician burnout, understanding the motivating factors can aid in discussing the problem. They mentioned that doctors who engage in self-reflection could draw from personal experiences to maintain their passion for teaching. They discussed mentoring relationships between junior and senior staff surgeons can encourage early teaching engagement. They mentioned that when highlighting the advantages of teaching to surgeons, professional development programs might also concentrate on these aspects.

In conclusion, there are many accreditation boards and specialty societies that place a high value on surgeon educators. The CEM collaboration reinforces the need for growth and enhancement of teaching across the medical education continuum. How teachers, researchers, and clinicians perceive their identities can influence their openness to new teaching methods and participation in faculty development (Cantillon et al., 2019). Moreover, it is necessary to conduct additional research to determine the true driving force behind a surgeon educator’s desire to teach.

Presentation Strategies

We have all had the experience of enduring a poorly executed or organized presentation that was not designed with the audience's learning needs in mind. The work of Stephenson et al. (2020) discussed the connection between learner participation and teaching efficiency at a CME conference. The authors stated that lectures and other passive educational modalities are frequently used in CME. They maintained the efficiency of these less interesting instructional approaches has, however, been called into question by various research. Outside of CME, research points to a link between engaged learning and better academic results. Stephenson and colleagues' study was held during a sizable CME conference with a didactic format and carried out as a cross-sectional validation study. The researchers used an eight-item learner engagement instrument along with an iterative process involving subject matter experts and a literature review, previously published engagement scales, and conceptual frameworks on engagement. The authors discussed that assessing engagement can be difficult, even though it is a crucial factor in learner retention. They maintained that given the link between student engagement and instructional success, developing more interactive and engaging teaching strategies for CME is advised.

Horiuchi et al. (2022) discussed that a presentation in and of itself merely conveys information, but a successful presentation goes above and beyond to motivate and empower the audience to hear the message. In his article, *The Art of a Scientific Presentation: Tips From Steve Jobs*, he discussed how Steve Jobs' effective presentation skills can be applied to medical education. Horiuchi et al. noted that a successful presentation begins with preparation and describing the purpose of the presentation and the final destination. According to the authors, an effective presentation should have certain features such as an outline, headlines, consistency, and

visual appeal. Major concepts should be limited to four main points. When constructing and delivering a presentation, Horiuchi et al. suggested considering several factors. These include considering word choice and relevancy of numerical data, ensuring familiar context is used, adhering to a 10-minute rule by switching up the cadence, incorporating demonstrations and props such as video clips, and sharing the spotlight with others to enhance the overall delivery.

MedEdPORTAL is a peer-reviewed online journal published by the Association of American Medical Colleges (AAMC) and the American Dental Education Association (Mededportal, n.d.) It is an open-access, MEDLINE-indexed publication covering teaching and learning tools in the health professions. The articles in *MedEdPORTAL* are comprehensive teaching or learning modules that can stand alone and have been reviewed with medical or dental trainees or practitioners. The mission of the journal is as follows:

- Promote the scholarship of innovation in health professions education that addresses critical, clinical, educational, and societal needs
- Foster dissemination and equitable access to high-quality educational resources for content, expertise, and educational approaches that may otherwise not be readily available
- Support author development that creates avenues of access for diverse scholars including trainees and faculty historically excluded from medicine (MedEdPORTAL, n.d.)

This journal is a valuable resource in the healthcare field, as evidenced by its high-impact factor and monthly download count of 9,000 (MedEdPORTAL, n.d.). This volume indicates that healthcare professionals are actively seeking tools to improve their teaching skills. Acquiring

these skills can elevate the effectiveness of surgeon educators and facilitate efficient knowledge dissemination.

Surgeons Are Not Trained Educators

Science has been the primary subject of study for surgeons, not education or adult learning theory. Medical student curricula primarily focus on science and medicine, leaving minimal space for other disciplines. *The Modern Practice of Adult Education; Andragogy versus Pedagogy* by Malcom Knowles (1970) is a timeless piece of literature focused on educating adults. Based on a unique philosophy of andragogy, which is the art and science of assisting adults in learning, as opposed to pedagogy, which is the instruction of children and youth, this book is a guided exploration into the developing technology of adult education. The primary point of the work is that adult learners have distinct differences from young learners in several crucial aspects. Consequently, a fresh approach is necessary to effectively teach adult learners.

Numerous programs have been created to assist members of the medical profession in enhancing their teaching skills. The American College of Surgeons offers ACS Surgeons as Educators, a 6-day course with a strong emphasis on curriculum development, educational leadership and administration, and performance evaluation (American College of Surgeons, n.d.-b).

The Harvard Medical School (Harvard University, n.d.) offers a 6-month program titled "Training to Teach." This program aims to equip medical educators with the latest teaching techniques for clinical and classroom settings, enabling them to effectively train the upcoming generation of healthcare professionals. The program states that the participants will leave the program with the knowledge, abilities, and methods needed to instruct adult learners and medical students in a variety of contexts.

The Harvard Macy Institute (Harvard Macy, n.d.) brings together executives, educators, and healthcare professionals to explore today's most pressing issues and to develop creative solutions that will have a long-term effect on how students are taught and how medicine is practiced. In addition to preparing the participants to lead institutional change, its aim is to help participants discover and use fresh views that might advance their professional development.

The Pritzker School of Medicine (Pritzker University of Chicago, n.d.) offers faculty development workshops. The goals of the workshops are to increase faculty members' understanding of theory-based learning and its real-world applications, enhance the teaching and evaluation abilities of the faculty, and enhance the education of medical residents and students.

The abundance of available programs for training physicians to become teachers is a clear indication of the pressing need for such initiatives. To effectively train the next generation of healthcare professionals, medical educators require a well-designed curriculum.

Limited Time and Resources

Hospitals and healthcare systems are no different from any other corporation, and they are trying to do more with less. Sachdeva et al. (2021) noted that due to growing pressure to concentrate on financially lucrative pursuits, it is challenging to encourage educational contributions. Some organizations incorporate educational activities into wage calculations, while others do it in a less formal way. The authors further suggested a faculty member should be notified annually about how their efforts to further education are reflected in their own pay.

Simpson et al. (2019) discussed that faculty members are aware that they must develop new pedagogical competencies and strengthen their current ones. The author posed the question, given all of their other clinical and educational demands, how are they supposed to fulfill these

increasing educational roles? Simpson and colleagues maintained that being a content specialist who shares expertise is no longer sufficient.

Anderson et al. (2017) discussed what a physician's job description will be like in 2020. At their institution, Aurora Health Care, the authors noticed a disconnect between the "competency" standards for trainees and the actual responsibilities they will fill as clinicians if hired at their sites. They proposed that this is because there are so many learners in the clinical workplace. Through their research, Anderson et al. discovered that even though there have been calls for innovations, skills, milestones, entrustable professional activities, and other reforms, no job description has been developed that specified the performance required of doctors working in practice in 2020. The authors discussed the job description, which incorporated the six objectives listed here:

- A proactive, clinically competent healthcare physician for patients and populations to fulfill the social contract between physician and patient with the highest ethical standards for patients' healthcare.
- Skilled at leading and serving as a member on interprofessional teams.
- Able to communicate superbly with professionalism, engaging patients in trusting team-oriented relationships as the approach to continuous contact with the patient (e.g., the patient recognizes that the team, not the individual physician, has shared responsibility for care).
- Digitally, data, and technologically fluent; skilled at utilizing the electronic health record, person/disease registries, and data displays/dashboards to identify gaps and engage in rapid cycle improvements as individual and team.

- Agile, adaptable, and innovation-driven as health care delivery and physicians' roles will continue to evolve.
- Committed to lifelong learning and self-care (Anderson et al., 2017, p. 419)

Anderson and colleagues (2017) further ensured the performance standards were linked to educational level and in line with employment requirements, not in a siloed manner but rather as a true education continuum. Finally, they noted it was time for every healthcare system, from its top leaders to individual doctors in private practice, to actively take advantage of the nexus between medical education and healthcare in order to optimize value (outcomes/costs).

Meyer et al. (2022) conducted a scoping review on an emerging trend of teaching medical students how to teach. They noted that teaching medical students how to teach can enhance their own learning and lay the groundwork for a career centered on instruction. They maintained that medical schools are working more to give students—especially more senior students—the knowledge and abilities they need to become teachers. They discussed that near-peer teaching programs are a common format for these student-as-teacher programs, but these programs can also take the shape of more rigorous courses that educate students for jobs as resident teachers, patient educators, and clinician-educators.

Duke Department of Medicine offers a Medical Education Leadership Track (Duke University School of Medicine, n.d.). Content specialists oversee this 1-year, longitudinal, interactive program, giving residents and fellows the resources they need to improve their clinical teaching and acquire critical competencies, including active learning techniques and adult learning theory.

In summary, educators in the healthcare field face challenges due to their limited time and resources. Encouraging educational contributions is difficult due to the pressure to pursue

profitable endeavors (Sachdeva et al., 2021). Society has come to realize that it is not enough to train doctors to care for their patients. Merely being an expert in content creation is no longer enough to succeed (Simpson et al., 2019). As faculty members take on more educational responsibilities, it is crucial to enhance and fortify their instructional skills. Medical schools have recognized these challenges and are taking steps to address them by updating their curricula to include courses focused on teaching and instruction.

Synthesis of the Literature Review

The literature on faculty development emphasizes the pivotal role of fostering a sense of community among educators and recognizing a link between a supportive environment and professional growth. In cultivating a strong community, educators not only forge connections but also solidify their identity as teachers, acknowledging the significance of their role in the CME of residents, fellows, and practicing surgeons. The literature underscores that surgeons are not trained teachers and that being a subject matter expert is no longer enough. According to adult learning theory, effective education for adults must not only focus on content knowledge but also adhere to andragogy principles. Andragogy, coined by Malcolm Knowles in 1970, refers to the "art and science of helping adults learn" and is considered essential for successful teaching and learning. Moreover, the literature acknowledges the challenges faced by surgeons with limited time and resources.

Theoretical Framework

This research study is approached from a pragmatism worldview. According to Creswell and Creswell (2023) the major elements of a pragmatism worldview are "consequences of actions, problem-centered, pluralistic, and real-world practice orientated" (p. 7). The research problem for this study is problem-centered and real-world practice orientated as surgeons are

trained to be healthcare providers and have limited opportunities for faculty development in instructional practices to optimize their role as surgeon educators to residents, fellows, and practicing physicians throughout the continuum of their careers.

Chapter Summary

This chapter presented a literature review on faculty development to include a sense of community, identity as a teacher, value of teaching, and presentation strategies. It also reviewed literature reinforcing the idea that surgeons are not trained teachers and that there is limited time and resources for surgeons as it relates to faculty development. The chapter ended with the theoretical framework for the study. Chapter 3 will discuss the methodology and data collection for this action research study.

CHAPTER 3:

RESEARCH METHODOLOGY AND METHODS

Introduction

Surgeons are healthcare providers who have received extensive medical and scientific education training. However, as they progress in their careers, they are often required to teach new healthcare providers in various educational settings to impart their knowledge and experiences gained over the years. Teaching the next generation of healthcare providers is essential for paving the way for further research and implementing innovative surgical techniques. There is minimal faculty development specific to being an effective teacher or educator offered to surgeons during medical school and throughout the continuum of their careers. It is assumed that because surgeons are subject matter experts, they possess the necessary skills to instruct residents, fellows, and practicing surgeons in their respective fields. There may have been a time when content expertise was enough to be considered a good teacher; however, that is no longer adequate (Simpson et al., 2019). Surgeons, as both educators and learners, are disadvantaged without guidance on how to be a good educator. Medical schools promote education goals for the faculty, but the faculty still do not consider themselves to be teachers (Steinert et al., 2020). Surgeons are trained to be healthcare providers and have limited opportunities for faculty development. Skillful physicians must be able to teach patients, trainees, and colleagues (Meyer et al., 2022). Faculty development must be provided to surgeons so they can offer meaningful education, train the next generation of healthcare providers, and help to ensure high-quality patient care.

The purpose of this study was to evaluate how faculty development optimizes surgeons' roles as surgeon educators to residents, fellows, and practicing surgeons across the continuum.

The main research question was as follows: How does faculty development impact surgeons' roles as surgeon educators to residents, fellows, and practicing surgeons across the continuum?

This chapter describes the research methodology used, including context, data collection, and analysis.

Research Methodology

Mixed Methods

This study utilized a mixed methods approach in an attempt to answer the research question posed. Mixed methods research gathers information using both qualitative and quantitative approaches (Creswell & Creswell, 2023). A survey including closed-ended and open-ended questions was used, and quantitative and qualitative data were collected and analyzed. Another crucial step in conducting a survey is using the questions as measurements (Fowler, 2014). The participant survey included questions using a Likert scale and open-ended questions encouraging the participants to reflect on their teaching experience. In addition, a focus group was held for participants to further elaborate on their experiences and corroborate survey findings. Physicians might be able to identify examples from their own practice through reflective processes, which could encourage them to keep teaching (Budden et al., 2017). The focus group was held six weeks after the meeting.

Action Research

The study examined the impact of faculty development activities on the teaching experiences of faculty members in two didactic courses held at a premier annual surgical meeting where surgeons obtain CME. The methodology used for this study was "action research."

Mertler (2020) defined action research as follows:

> Any systematic inquiry conducted by teachers, administrators, counselors, or others with a vested interest in the teaching and learning process or environment for the purpose of gathering information about how their particular schools operate, how they teach, and how their students learn. (p. 309)

Liao and Peng (2023) explored the critical role of faculty development. The author's action research study discussed how faculty developers have worked hard to create and present a wide range of courses or workshops that would better equip faculty members to carry out their teaching responsibilities. Dickinson et al. (2021) used action research for attendings and general surgery residents, asking them to complete evaluations, including learner preferences and teaching styles. The objective was to ascertain the impact of intrinsic learning preferences and teaching styles on the effectiveness of surgical educators.

Research Designs

Grounded theory was used to explore the participants' explanations of their experiences. For more than 60 years and throughout numerous topic areas, grounded theory has been employed in qualitative research. It has made it possible for researchers to "ground" their theories in methodically collected, sampled, coded, categorized, and analyzed data (Botch-Jones et.al., 2022). This sociological method known as grounded theory allows the researcher to develop an abstract, general theory of a process, action, or interaction based on the perspectives of the participants (Creswell & Creswell, 2023). This study focused on the participants' experiences participating in a faculty development program as part of their teaching assignment at a premier annual surgical meeting.

Stough and Lee (2021) used grounded theory to look through highly regarded educational journals to find out which grounded theory approaches are most commonly used by researchers in the field of education. Over the past 20 years, the authors discovered that a variety of grounded theory methodologies have been employed in educational research.

Case studies were used to evaluate the participants' experience with the faculty development resources offered. Case studies are a type of inquiry wherein a researcher provides a detailed analysis of a case—which is typically a program, event, activity, process, or one or more individuals. This type of inquiry is prevalent in many domains, including evaluation (Creswell & Creswell, 2023). In this study, the case studies contained four participants who participated in a focus group six weeks after the meeting. Gerring (2004) stated the most helpful definition of a case study is the in-depth examination of a single unit when the goal is to provide insight into a matter concerning a larger class of units. The single unit that was discussed during the focus group in this study was the impact of the educational resources provided on the participants' teaching experience. Specifically, addressing the following questions: did the resources help improve confidence as an educator? Was there anything about this experience that could benefit future teaching experiences? What aspects of this process were effective, and how did it compare with other faculty development resources or meetings where you have presented?

Research Context

Research Setting

The study setting was a premier annual surgical meeting for surgeons at a large convention center. Each year, this meeting brings together about 7,500 surgeons to learn from leaders worldwide, with over 350 educational sessions (American College of Surgeons, n.d.-d). Faculty members are identified in advance based on session proposals that are submitted,

reviewed, and accepted by a program committee. Sessions vary in length, potential number of learners, and topic areas and include a description and learning objectives. Faculty are mostly surgeons presenting topics of interest and areas in which they are experts. There is ongoing communication with faculty members beforehand to help prepare them for the sessions, although this communication is mainly logistical and administrative. Communications include the time and location of the session, the expected number of learners, the conflict of interest form, and directions for uploading the presentation.

Participant Recruitment

For this study, 30 surgeon faculty members who spoke at two didactic courses held at the premier annual surgical meeting were invited to participate. These didactic courses have an extra fee in addition to the meeting registration fee and are either four or six hours in length. These didactic courses use best practices in training and education methods to help surgeons acquire information and skills (American College of Surgeons, n.d.-c). Of the invitees, 29 were from the United States and one was from Sweden. All speakers were subject matter experts in their respective specialties, practicing surgeons, and surgeon educators within their institutions.

All potential participants received an email outlining the study and requesting participation. Three follow-up emails were sent to those potential participants who did not initially respond, continuing to seek their participation. Surgeon speakers who did not respond after the third email attempt were not pursued further for study participation.

Included in the email message was verbiage that participation was optional and that surgeons had the choice to decline or withdraw from the study at any point without facing any penalties. There was no waiting period between informing the participant of the study and obtaining consent. At the bottom of the email was a link to informed consent. The informed

consent agreements were collected and stored on a REDCap platform (Project REDCap, n.d.). The REDCap platform was accessible only by the researcher and the researcher's assistant and was password protected.

Research Participants

The participants in this research study were surgeons assigned to teach in two didactic courses. The courses selected for this study, Annual Update in Emergency General Surgery and Annual Update in Surgical Critical Care, are among the most popular and are offered annually due to their popularity and positive attendee feedback. Since the faculty was not randomly selected, this was considered a convenience sample. Creswell & Creswell (2023) defined a convenience sample as respondents selected according to their accessibility and ease. Of the 30 surgeon faculty invited to participate, 10 responded and were accepted as research participants. All participants who agreed to participate were accepted into the study. There were six men and four women, all from the United States. There was an average of 18 years of experience; the age range fell between 30 and 60 years old; 44% of the participants delivered more than six to 10 lectures each year

Researcher Positionality

The researcher is an assistant director of a not-for-profit medical membership association and is considered a practitioner researcher. Herr and Anderson (2015) defined "the term practitioner researcher places the insider/practitioner at the center of the research" (p. 3). The researcher's primary responsibility includes overseeing and managing a team of individuals who support the development, implementation, and evaluation of the premier annual surgical meeting, which includes over 350 sessions and 7,500 surgeon attendees. The researcher's role includes identifying and working closely with faculty from institutions around the

world to plan for educational sessions at the annual meeting. The researcher holds a master's degree in health law from Loyola University School of Law and is pursuing a doctorate in education at Bradley University.

The person who assisted with the clerical task has experience with surveys and data collection from previous positions but is not formally involved with this study or in the planning and implementation of this premier annual surgical meeting. The assistant holds a master's degree in public health. This individual assisted with the clerical tasks of creating the surveys, collecting the informed consent in REDCap, and helping to manage the data.

Data Collection

A convergent mixed methods design, as defined by Creswell and Creswell (2023), was used for this study:

> The researcher converges or merges quantitative and qualitative data to provide a comprehensive analysis of the research problem. In this design, the investigator typically collects both forms of data at roughly the same time and then integrates the information in the interpretation of the overall results. (p. 16)

The researcher utilized Fowler's (2014) research survey methods to customize a survey. Once the study participants were identified and their informed consent was completed, a preconfidence survey, including both close-ended questions using a Likert scale and open-ended questions, was distributed. The survey was developed to collect data related to multiple variables, including demographics, that would allow for a pre–post comparison and qualitative data to understand the participant's individual teaching experiences. The survey prompted participants to reflect on their teaching practices and identify areas for improvement that might enhance their upcoming teaching session and the ultimate educational impact on learners.

Three 1-hour educational planning meetings were offered to all surgeon speakers for both courses, regardless of their participation in the study. These planning meetings provided guidance and support to the surgeon speakers as they prepared to present and facilitate discussions in their course. The topics for these sessions included administrative and logistical requirements (e.g., attendance numbers, audio-visual needs, room setup), and identification of precourse materials (if applicable). The initial meetings presented information clarifying the role of the surgeon speaker, offered presentation strategies, provided opportunities to utilize various teaching formats, and included a discussion on how to engage their learners during the course. Meetings held closer to the course were designed to support the speakers and help ensure they felt comfortable and confident with their presentation and facilitation plans, revisit opportunities to engage their learners, and make the course as informative and effective as possible. Recordings of the meetings were provided for those unable to attend. Faculty of one of courses did not follow the suggested meeting schedule and instead had a hour-long planning meeting followed by a 30-minute check-in meeting held two weeks before the course to provide support and assistance and answer any last-minute questions related to making the course a success.

One month before the premier annual surgical meeting, study participants received educational resources to develop or enhance their presentation based on expert instruction best practices. The resources provided practical presentation strategies, including creating an impactful and engaging slide deck, and guidelines on how to build a connection with learners during the course. After the courses were held, a postconfidence survey was sent to all study participants. Specifically, the survey also collected feedback on the entire planning process, focusing on the faculty meetings' relevance and the presentation resources' usefulness. A portion of the postconfidence survey included repeat questions from the preconfidence survey. This

allowed for a comparison and helped determine whether the faculty development offered was effective (Leslie et al., 2013).

In addition to collecting data from the surveys, a 45-minute virtual focus group was held six weeks after the course to debrief further on the educational interventions' impact on the participants' teaching experience. Additional feedback from a focus group can be used to inform future faculty development offerings (Steinert, 2001). Four of the 10 study participants attended the virtual focus group. The discussion was semistructured, and the pre-and postconfidence survey results and attendee evaluations were shared during the focus group and all responses were anonymous. There was an open discussion on what was useful to participants in their role as faculty for the course, whether anything they learned would be helpful in the future, and what could have improved this educational intervention. The meeting was recorded and transcribed using Otter.ai (Otter.ai, n.d.).

Data Analysis

The first phase of data analysis involved downloading the pre- and postsurvey results from the REDCap platform, the primary data collection tool. The survey responses were de-identified, and data were analyzed in aggregate. This initial analysis provided a broad understanding of the participants' perspectives and allowed for an initial assessment of any observable trends or patterns.

Following the initial analysis, a deeper exploration of the data was undertaken, focusing on specific demographic points, such as years of practice, age bracket, frequency of lectures delivered annually, completion of formal training in adult education and faculty development, and level of confidence in presenting in a didactic setting. The comparative analysis for this study aimed to evaluate any changes in participants' confidence levels before and after the

intervention, providing valuable insights into the effectiveness of the faculty development materials.

Segmenting survey data by demographic variables identified potential similarities and differences across subgroups. Halperin et al. (2021) evaluated data by demographic variables to study anxiety and depression during COVID-19 within medical students. They found that 30.6% of medical students said they had anxiety and 24.3% had depression. The median score was higher among women. Halperin et al. emphasized the importance of segmenting survey data.

Data analysis for this study was intended to assess the impact of the faculty development materials offered to the participants by comparing pre- and postconfidence surveys. Kim and Lee (2020) confirmed the efficacy of a simulation-based teaching program for nursing students who responded to mass casualty crises through pre–post comparison. Their study discovered that in the event of a mass casualty, the nurses likely undertriaged and did not provide the correct level of care for the patients.

In addition to quantitative analysis, a qualitative examination of the data was conducted to identify underlying themes and insights. Mertler (2020) defined triangulation mixed methods research design as "where both quantitative and qualitative data are collected at about the same time and are given equal emphasis" (p. 315). Through a systematic review of open-ended survey responses and analysis of the transcript from the focus group, key themes and patterns were explored to triangulate survey data and offer a deeper understanding of participants' experiences, perceptions, and challenges related to faculty development. This methodological triangulation, utilizing multiple data collection and analysis methods, further enhanced the findings related to the impact of faculty development on surgeons' roles as faculty.

Findings from the data analysis resulted in valuable findings and were intended to identify further opportunities for research and exploration into the impact of faculty development for surgeons in their role as faculty.

Research Ethics and Institutional Review Board Compliance

This research study was conducted in cooperation with Bradley University's Department of Education, Counseling, and Leadership. The researcher obtained approval from Bradley University's Committee on the Use of Human Subjects in Research, and the study was considered an exempt review.

Chapter Summary

This chapter covered the research methods and techniques used to address the research question: How does faculty development impact surgeons' roles as surgeon educators to residents, fellows, and practicing surgeons across the continuum? It also described the data collection approach, analysis, and research background. In Chapter 4, the study results will be reported and discussed to answer the research question.

CHAPTER 4:

FINDINGS AND RESULTS

Introduction

This chapter presents the findings and results from a mixed methods study to answer the research question: How does faculty development impact surgeons' roles as educators for residents, fellows, and practicing surgeons across the continuum?

The outcomes of the pre- and postsurvey, including closed and open-ended responses, as well as additional findings and understanding from the focus group, are presented in this chapter. The study involved a multiple case study based on 10 participants, each contributing unique perspectives. Nine completed the presurvey, five completed the postsurvey, and four participated in a follow-up focus group. The insights gathered from these four participants' experiences will be discussed as a case study, providing valuable insights to address the research question further.

Findings and Results

Demographics

The presurvey collected relevant demographic data for nine participants. The questions included years in practice, age bracket, formal educator training, and the number of educational lectures presented each year.

Years in Practice

The majority of participants responded that they were in the 21 to 30 years of practice category. Of the nine participants who completed the presurvey, two have been in practice for five to 10 years, three have been in practice for 11 to 20 years, and four have been in practice for 21 to 30 years. None of the participants had less than five years or more than 30 years of

practice. Age brackets reported aligned with years in practice and thus were not reported or elaborated further.

Formal Training in Adult Education

Participants had varying experiences in adult education. Two participants have a master's degree in education, one of which also reported involvement in an outside organization's educational program—Surgeons as Educators; one noted participation in a local educator course in curriculum development; and five participants took part in faculty development specifically targeted for teaching in a didactic setting. The faculty development programs listed were academic meeting sessions or workshops at participants' institutions. The majority of participants had no formal training in adult education.

Educational Lectures per Year. The educational lectures per year, as shown in Table 1, Number of Lectures per Year by Participants, demonstrate that the majority of participants, 44%, deliver between six and 10 lectures per year, with a range in the number of lectures presented per year across all participants.

Table 1

Number of Lectures per Year by Participants

Number of lectures per year	Number of participants	Percentage
Fewer than 5	2	22.2
6–10	4	44.4
11–20	1	11.1
More than 20	2	22.2

Presurvey Results

The presurvey data illustrate confidence levels in the components of one's role as a faculty member. As shown in Table 2, the Presurvey Results of Confidence Levels Related to

Presentations indicate that most participants reported being very confident in organizing and preparing presentations. In contrast, only two participants reported being very confident in gathering feedback on teaching. Those components, with the largest number of participants reporting no confidence, were adapting teaching to accommodate different learners and gathering feedback on teaching. Those who reported their confidence level as "somewhat" or "very" confident on the presurvey also reported the greatest number of years in practice: 21 to 30 years. Comparisons between data reported before and after the faculty development and education resources provided are reported later in this chapter.

Table 2

Presurvey Results of Confidence Levels Related to Presentations

	Very Confident	Somewhat Confident	Not Confident
Organizing and preparing for the presentation	7	2	0
Utilizing a variety of methodologies for content delivery	4	4	1
Adapting teaching to accommodate different learners	4	3	2
Assessing learners	3	5	1
Providing formative feedback to learners	4	5	0
Gathering feedback on training	2	5	2

Pre- and Postsurvey Comparison

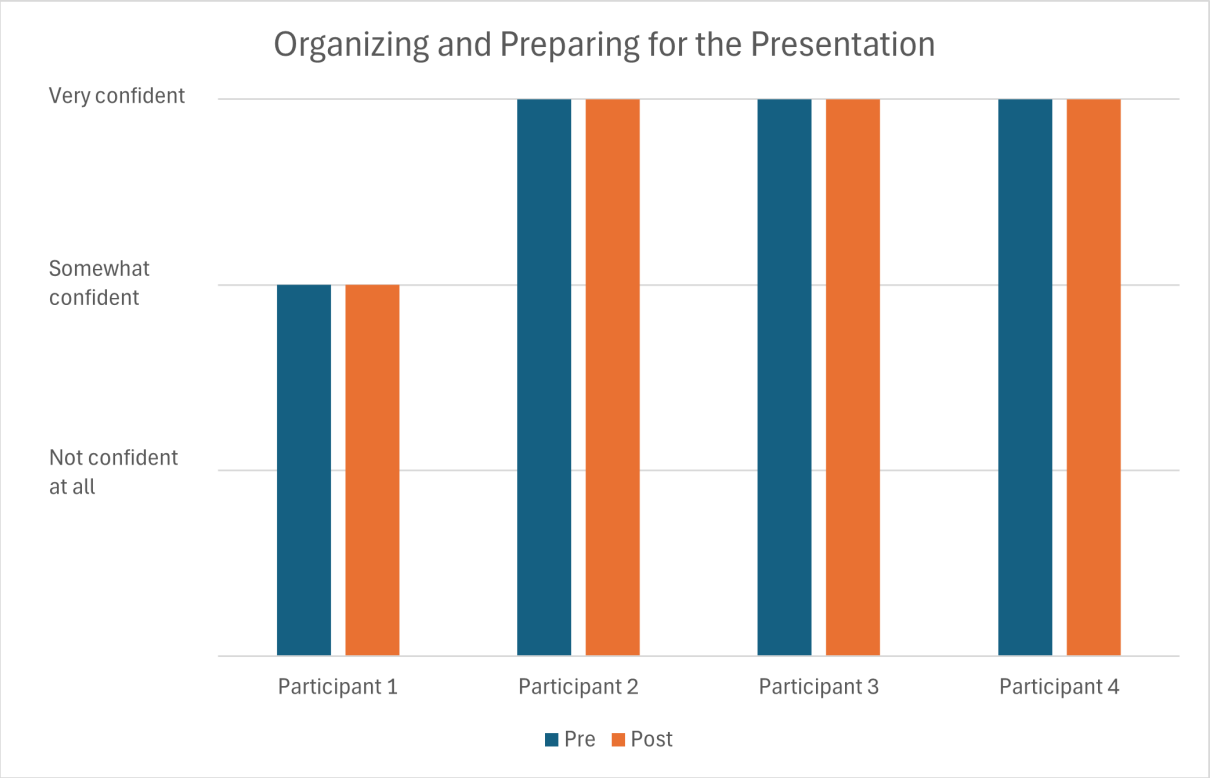
The pre- and postsurvey included identical close-ended questions to assess the impact of the faculty development and educational resources provided to participants. The questions focused on organization and preparation for presentations, methodologies for content delivery, accommodating different learners, assessing learners, providing feedback to learners, and gathering feedback on teaching. Pre–post comparisons for each of these data points are included in Figures 1 through 6. This includes results from four participants—those individuals who

completed both the pre-and postsurveys. See Appendix C for the preconfidence survey and Appendix D for the postconfidence survey.

The majority of the participants were “very confident” in organizing and preparing for presentations, with only one participant reporting being “somewhat confident.” As shown in Figure 1, Organizing and Preparing for the Presentation, there was no change in confidence level for this component of teaching following the faculty development and educational resources provided.

Figure 1

Organizing and Preparing for the Presentation

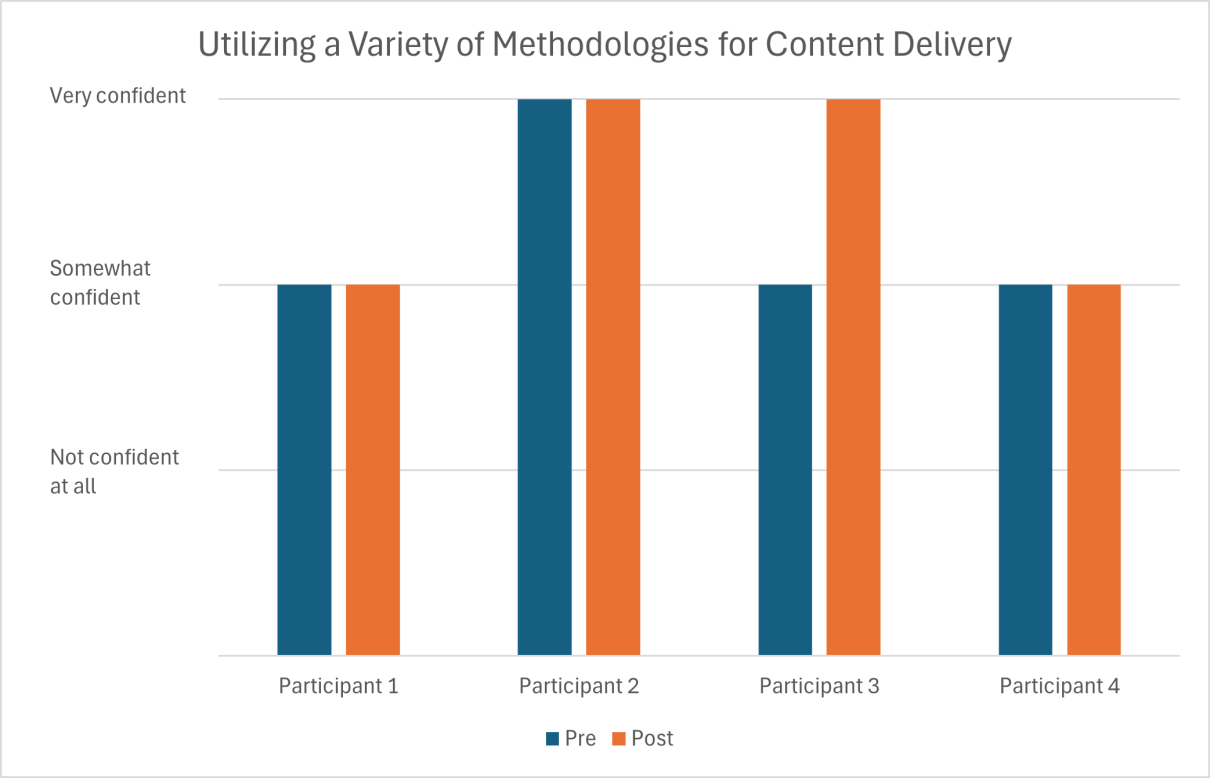


Following the faculty development and educational resources provided, and unlike Figure 1, Organizing and Preparing for the Presentation, a variance in responses was noted, as shown in Figure 2, Utilizing a Variety of Methodologies for Content Delivery. One participant’s

confidence level improved from “somewhat confident” to “very confident” in utilizing a variety of methodologies for content delivery. The majority of the participants did not report a change in confidence. Two participants reported being “somewhat confident” both before and after the faculty development and educational resources, while one participant reported being “very confident” both before and after receiving the same resources. This will be discussed in the analysis and discussion section.

Figure 2

Utilizing a Variety of Methodologies for Content Delivery

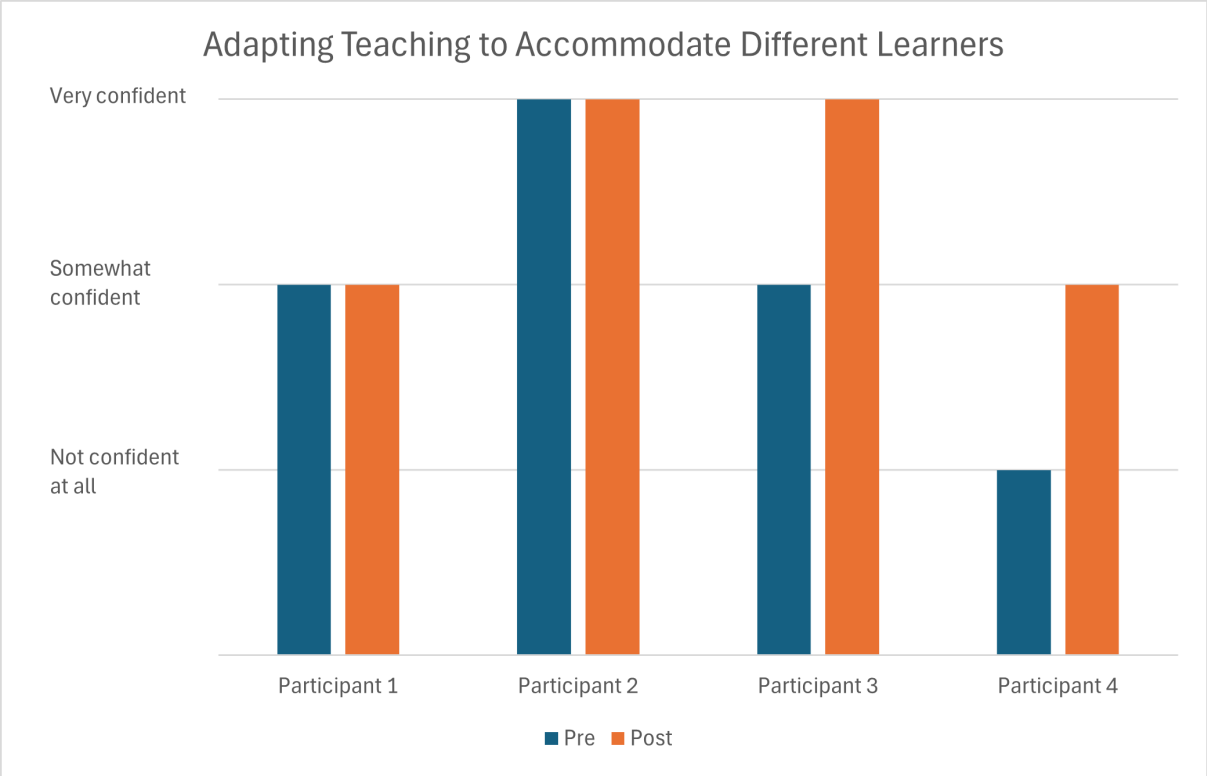


The confidence level in accommodating different types of learners improved following the faculty development and educational resources provided for two of the participants. As shown in Figure 3, Adapting Teaching to Accommodate Different Learners, one participant significantly improved in confidence from being “somewhat confident” to “very confident,”

while another participant progressed from having “no confidence at all” to being “somewhat confident.” Two participants reported no change in their confidence levels. One of these participants was “somewhat confident” both before and after the faculty development and educational resources were provided, while the other was “very confident” both before and after receiving the same resources, similar to the phenomenon described earlier.

Figure 3

Adapting Teaching to Accommodate Different Learners

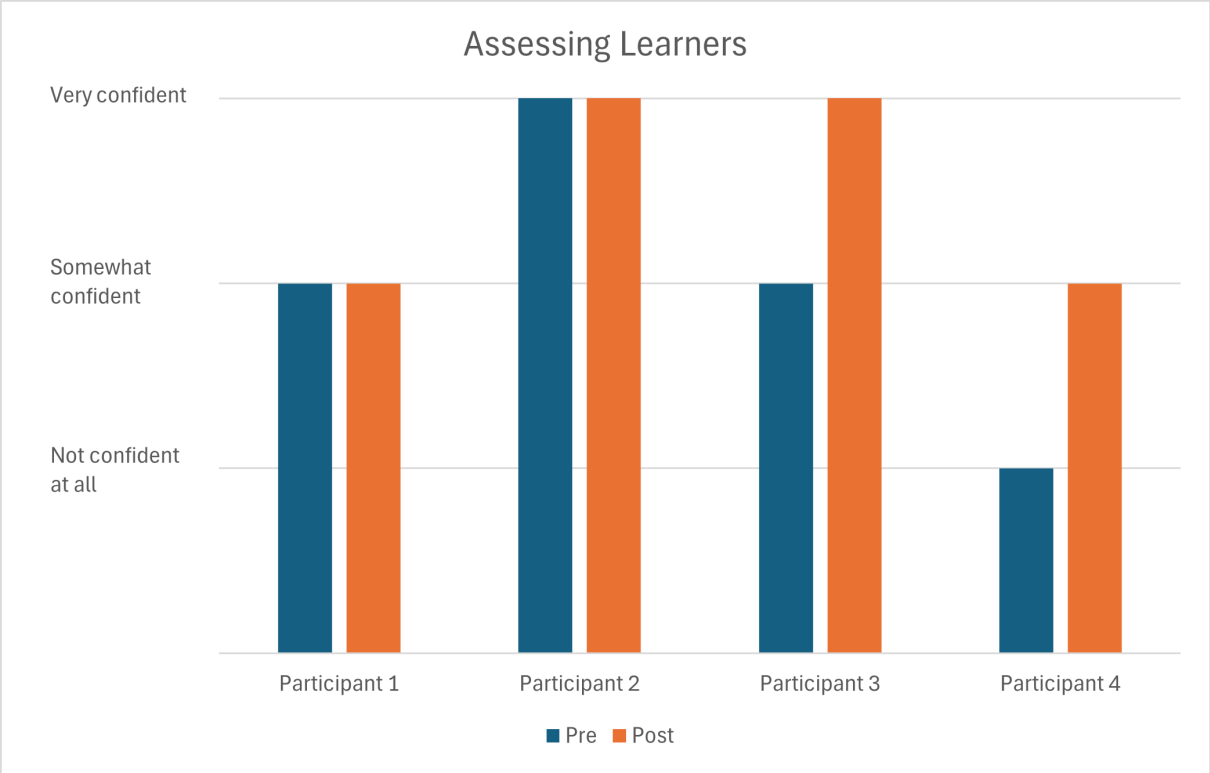


The confidence level in assessing learners, as shown in Figure 4, Assessing Learners, improved for two participants following the faculty development and educational resources provided. One participant moved from “somewhat confident” to “very confident,” and one participant reported “not confident” in the presurvey and “somewhat confident” in the postsurvey. The results of the two participants showed no change in confidence for assessing

learners. Similar to findings displayed in Figure 2, Utilizing a Variety of Methodologies for Content Delivery, and Figure 3, Adapting Teaching to Accommodate Different Learners, one of these participants was "somewhat confident" both before and after the faculty development and educational resources were provided, while the other was "very confident" both before and after receiving the same resources.

Figure 4

Assessing Learners

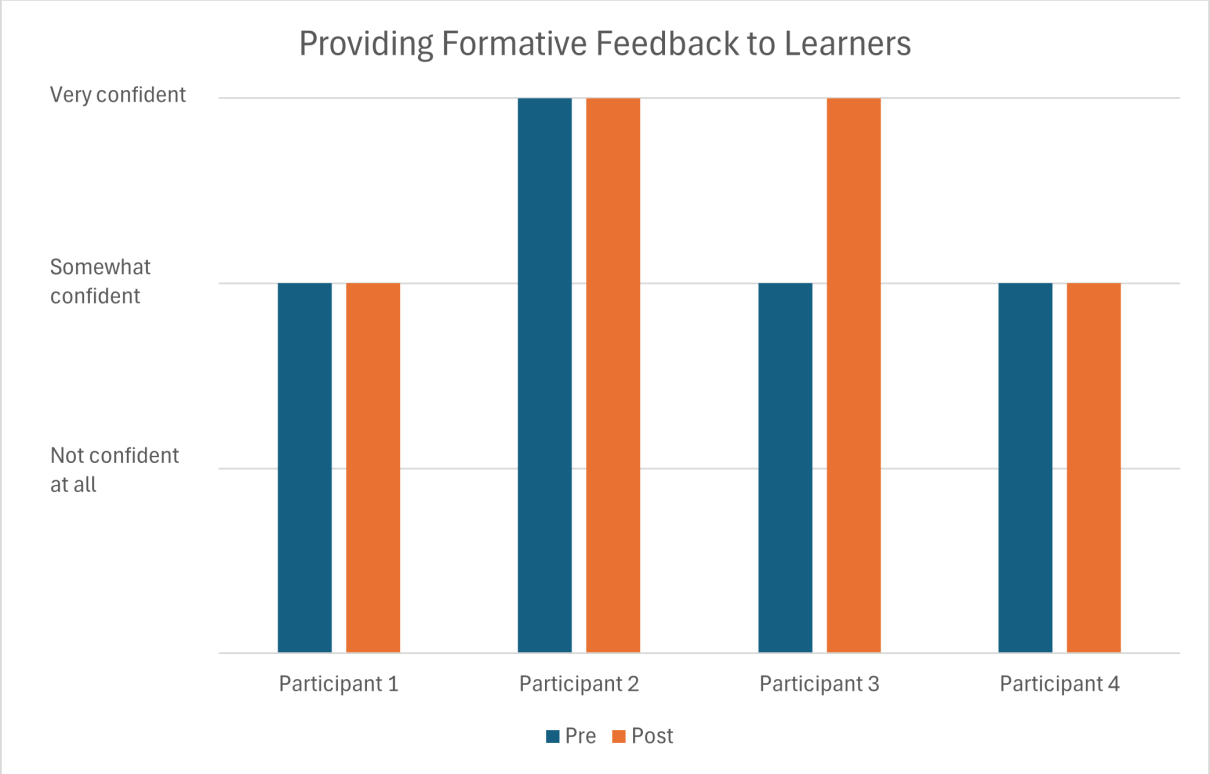


The majority of the participants did not report a change in confidence in providing feedback to learners following the faculty development and educational resources provided. These results are displayed in Figure 5, Providing Formative Feedback to Learners. One participant did move from "somewhat confident" to "very confident." Similar to the earlier findings, two of these participants were "somewhat confident" both before and after the faculty

development and educational resources were provided, while the other participant was "very confident" both before and after receiving the same resources.

Figure 5

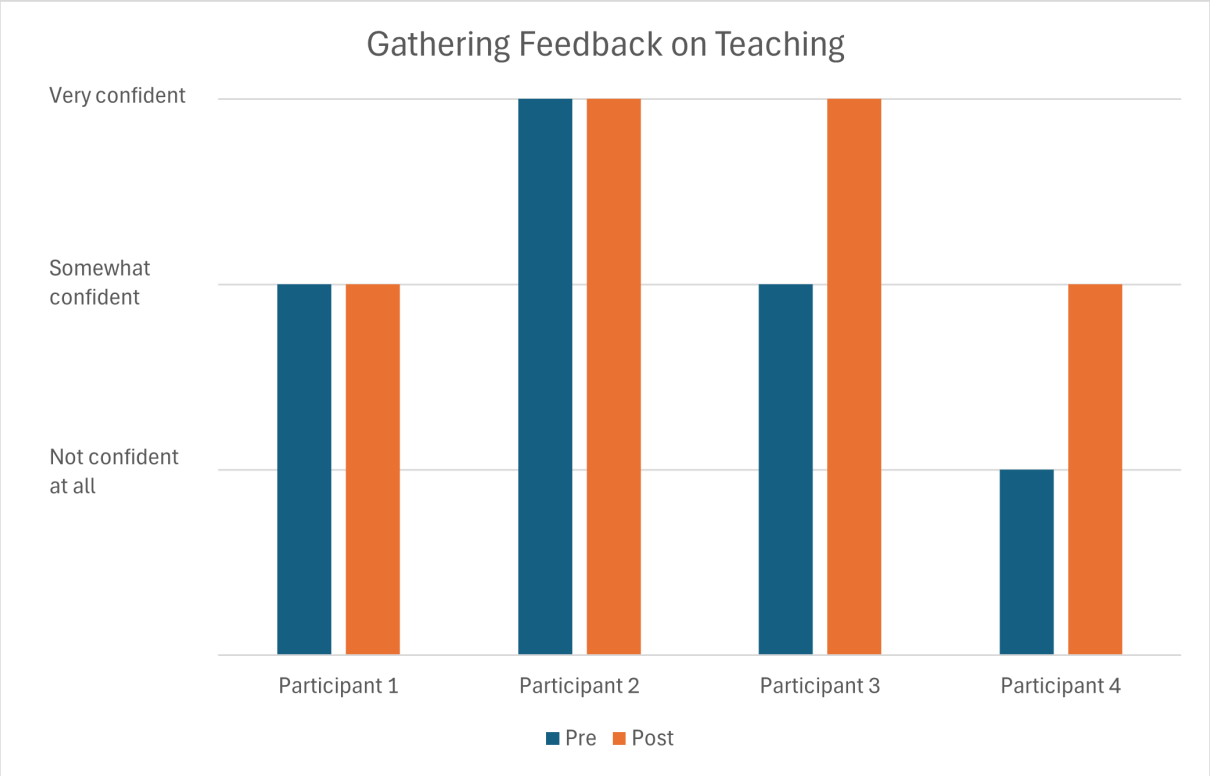
Providing Formative Feedback to Learners



As shown in Figure 6, Gathering Feedback on Teaching, two participants noted a change in confidence level from the pre- to postsurvey for gathering feedback on teaching; one from "somewhat" to "very confident" and the other from "not confident at all" to "somewhat confident." Two participants did not report any change in their confidence levels; one remained at "somewhat confident" and one at "very confident."

Figure 6

Gathering Feedback on Teaching



Postsurvey Results

The results shed light on the extent to which preplanning meetings impacted participants' sense of community as educators, their teacher identity, and the reinforcement of the value of teaching. In all three areas, the results are varied regarding the impact of the preplanning meetings, ranging from no impact to some impact.

Sense of Community as an Educator

One of five participants reported that the preplanning faculty meeting provided a sense of community. Two participants responded that it somewhat provided a sense of community, and two participants responded that the preplanning faculty meeting did not at all provide a sense of community.

Sense of Teacher Identity

The data showed that the preplanning faculty meeting had a minimal impact on participants' sense of teacher identity. One participant responded that the preplanning faculty meeting was very helpful. Two participants responded that it was somewhat helpful, and two participants responded that it was not at all helpful. For those who reported that it was helpful or somewhat helpful, one participant elaborated that the meeting reminded them of their role in the education process and helped provide a clear plan for the course they were teaching.

Reinforce the Value of Teaching

The preplanning faculty meetings had a minimal impact on the participants' value of teaching. One participant responded that the preplanning faculty meeting did reinforce the value of teaching. Two participants responded that it somewhat reinforced the value of teaching, and two participants responded that it did not provide any reinforcement of the value of teaching. One of the participants reported that, as the study was conducted in real-time, it underscored the importance of the course and its value in enhancing the learner's education.

Case Study/Focus Group Findings

The virtual focus group was held six weeks after the meeting, during which the faculty presented. Four of the 10 participants took part in the focus group, and two of these participants also completed the pre- and postsurveys. The primary purpose of the discussion during the focus group was to assess the impact of the faculty development and educational resources provided on the teaching experience of the participants. Specifically, did the faculty development and education resources improve participants' confidence as educators? Were there elements of this experience that could benefit future teaching experiences? What aspects of this process were effective, and how did they compare to other faculty development, education resources, or

meetings? Based on the discussions, three themes emerged in the qualitative data: (1) the different needs of different learners, (2) the impact of faculty development on building a community, and (3) the importance of faculty development.

Participant A

Participant A did not complete the presurvey, which contained the demographic information, but did complete the postsurvey and was engaged during the focus group. The participant did mention that they were "very seasoned" and had given many talks per year, so they were an experienced presenter.

Regarding the different needs of different learners, Participant A stated that the faculty development and educational resources provided were not helpful to them but might be to others with less professional experience. They stated, "Some of the tools that you have talked about may be more relevant early in someone's journey."

Participant A reported that faculty development did not impact the building of a community but did note there might be occasions when it would provide a sense of community. They reported, "If you have sessions where the people are truly desperate for one another, and they do not have any preexisting sense of community, those meetings may have tremendous value in establishing that." This participant explained that they were familiar with most of the speakers in the session from previous speaking engagements, so there was already a sense of community, not as a result of the faculty development as part of this study

Finally, the participant did not find a benefit in the faculty development and educational resources provided. They stated, "If there's some deliverable that I have arrived at that meeting, or there is something that is really unanticipated, it's unique, and without it, I cannot do what I've been asked to do. That's really valuable."

Participant B

Participant B reported being in practice for more than 21 years and presenting six to 10 lectures annually, some of which are international. This participant completed the pre- and postsurvey.

Participant B stated that the faculty development and educational resources provided were not helpful, but development and resources did cause them to pause to think about how they mentor others. They shared that at this stage of their career, “It’s almost a component of that real-time in-person coaching that works extraordinarily well.” They further reported that they have colleagues who could benefit from these types of resources. They suggested that these individuals are not open to coaching, but they are open to feedback that will improve their presentation(s). They stated that for those who give many presentations a year, one must review a lot of material and “dig to find a gem.”

Participant C

Participant C has been in practice for over 21 years and presents 11 to 20 lectures annually. This participant completed the presurvey.

Regarding the different needs of different learners, Participant C noted that it is a challenge to identify one resource that will meet the needs of everyone in a faculty development program. This is mostly a result of faculty development participants being at different stages of their careers and thus having different interests and needs. They noted, “They’ve [faculty] been at it for 20 to 30 years or so, to find something that’s equally valuable . . . [for faculty] within the first five years and people are 25 years . . . gets tricky.”

Participant C shared that the preplanning virtual meetings were a great idea, but a new concept and not on anyone’s radar. They further shared, “In-person meetings are better to

provide a sense of community. Virtual meetings are not the same. “Regarding the importance of faculty development, this participant suggested that time is a barrier, even though they thought the concept was important. They further stated, “If the meeting is worth it, people will say great; if it’s not worth it, they’ll say like, you know, I would rather do something else with my time.”

Participant D

Participant D has been in practice for over 21 years and presents more than 20 lectures annually. They completed both the pre- and postsurvey. They also mentioned that this is the first time they have been asked to present at this type of course at this meeting.

This participant reported finding value (especially in the preplanning meetings) in the faculty development and educational resources and its impact on building a community of educators. They reported, “Starting with the briefing before when we met as a group and laid out expectations, that’s not typical. So, I appreciated the structure and organization and feeling like I was participating in a real uptown course that was well organized, and I better have my game face on.”

Regarding the importance of faculty development, this participant reported that not all of the faculty development and educational resources provided were helpful. However, they would pass along to colleagues and other faculty who will teach with them in the future, “I thought that two papers were helpful. I wished I had had time, more time to digest them.”

Chapter Summary

This chapter discussed the findings and results of the research study. Chapter 5 will conclude with the analysis and discussion, answer to the research question, study’s limitations, and future research questions.

CHAPTER 5:

DISCUSSION

Introduction

This study emerged from years of participating in the selection process for session moderators at a premier annual surgical meeting. During committee discussions, when determining the best moderator for a particular session, the researcher witnessed a recurring pattern—session moderators were frequently chosen based on how many surgeries they performed rather than their ability to educate. The justification often followed the same comment: “They perform the most of these procedures in the country.” While surgical expertise is undoubtedly important, the theory that the surgeon who performs the greatest number of particular surgeries is also a great educator remains unchallenged. Over time, this raised a fundamental question: Just because a surgeon is a subject matter expert and performs a significant number of specific surgeries, does that necessarily mean they possess strong teaching competencies?

This realization prompted a deeper exploration of the intersection between faculty development and surgical education. While subject matter expertise is important, the ability to effectively communicate, mentor, and provide structured and tailored learning experiences is equally vital for developing the next generation of surgeons.

Analysis and Discussion

The results and conclusions of the quantitative and qualitative data combined with this discussion to find a response to this study’s research question: How does faculty development optimize a surgeon’s role as an educator to residents, fellows, and practicing surgeons across the continuum?

Faculty Development

It could be presumed that the more years in practice, the greater one's confidence would be overall. This is, in fact, what was found in the presurvey results as reported in Chapter 4. With the exception of one participant, all individuals with 21 to 30 years of practice reported "somewhat" or "very" confident on the presurvey for all of the components of teaching. There could be a number of reasons for this level of confidence among surgeons who have been in practice longer. One reason could be that they have more opportunities to present as they build a solid reputation within their field. As Whicker and Nagler (2020) discussed, extrinsic and intrinsic motivation exists for clinicians to continue growing throughout their careers—not just in the area of patient care, but also as teachers, researchers, and leaders. Thus, for those who have been in practice for extended periods of time and continued to develop, even if not directly related to their role as a teacher, this growth is likely transferable to other areas of their professional identity. An even simpler explanation related to the data collected in this study is that those who have presented more often (self-reported) are also more confident presenting. Thus, more experience and repetition result in more comfort and confidence.

The importance of this finding is that faculty development should be tailored to meet the needs of those participating. This means those with extensive experience may have different needs and desires to grow as a teacher than those newer to their careers. Feedback from participants in the focus group exemplified this with comments that the faculty development provided might have been more useful for those earlier in their careers.

As noted in Chapter 4 and as can be seen from Figures 1 through 6, those with more practice experience were more confident in all components of teaching evaluated. This finding clarified the need for a different format or content of faculty development for those more

experienced. More specifically, given that those with extensive practice experience were found to be confident in presenting, this group may not benefit from faculty development related to preparing to present and instead might benefit from other faculty development resources. Similarly, it could be surmised that those with fewer years in practice could benefit from faculty development related to preparation for presentation.

These findings confirm the need for a thorough needs assessment prior to developing and delivering faculty development. If the goal is to improve one's confidence in a component of teaching, the questions are what faculty development is needed, in what areas are participants less confident, and what faculty development will improve their confidence in this area (Sirianni et al., 2021). By analyzing the results of a needs assessment, targeted faculty development and educational resources could be provided that directly address the faculty's needs, leading to increased confidence.

Finally, it is critical that faculty development is considered valuable—especially if it will require time or money. Clearly, time is precious for busy surgeons, and thus, faculty development must be efficient and effective. It is, after all, on top of many other necessary tasks, including staying current on patient care guidelines and best practices. Therefore, faculty development must be perceived as a good use of time with a positive outcome. It should be structured to align with the demanding schedule of a surgeon, emphasizing high-impact learning with focused topics and clearly defined objectives that justify their time.

Sense of Community

The goal of the preplanning meetings was to provide the faculty with a sense of community. Steinert (2019) recommended broadening the scope of faculty development to include communities of practice, bringing together those with a common interest or common

challenge. Three of the five participants who completed the postsurvey reported that the preplanning meetings provided or somewhat provided a sense of community. In individual remarks about their particular needs and experience, Participant C acknowledged the importance of preplanning meetings and shared that in-person meetings would have been more effective in creating a stronger bond than virtual meetings. Thus, it seems the preplanning meetings could be helpful not just in preparing for one's teaching but also in learning from and supporting fellow faculty members. Others have suggested training new faculty members can benefit from a Community of Practice. This community allows for sharing best practices and co-creating practical solutions (de Carvalho-Filho et al., 2020). Similarly, Hoyt et al. (2020) reported that bringing individuals together for faculty development helps solidify organizational learning, especially related to "pedagogical shifts towards engagement-style teaching and active learning."

Participant A reported that the faculty members already knew each other, so there was already a sense of community, and the preplanning meetings were not needed. They further stated that if the faculty did not know each other, collective preplanning meetings would have been helpful. This, together with the feedback from Participant C that "time constraints" require them to be selective with their time, suggests that any preplanning meeting or attempt to promote a sense of community should be thoughtfully planned to make the most of the time, allowing for participants to learn from and support one another as part of the faculty development. The varying responses suggested that more interactive and engaging methods could be explored to enhance the sense of community in the preplanning meetings, which may promote development as an educator. While in-person learning may be preferred, as Participant C reported, this is more challenging when convening with participants from across the country and with the adoption of online teaching and learning following the pandemic (Gardner, 2020). Thus, bringing individuals

together for faculty development virtually may require additional thoughtful planning to make it a good use of time and effective.

Sense of Identity

The postsurvey included a question related to the impact of the faculty meetings on identity formation as a teacher. Their interaction with other faculty members reinforced their identity as a teacher, and the meetings provided a clear objective and plan, including what their role is as teachers. The literature supports this as Sklar (2016) discussed that faculty development would benefit from professional identity formation that would enable faculty activities to be divided into research, teaching, administration, clinical care, or some combination of these areas. This would acknowledge that scholarship can be a part of any of these areas and that faculty identities are flexible, allowing for different combinations of activities by faculty members at different times and with different priorities for experiences to enhance those identities. Sklar (2016) further stated that by putting identity at the core of faculty development, it also becomes possible to see each faculty member's professional identity developing over time. Given that a physician's role as a teacher is likely second to their patient care role, opportunities to support and reinforce the role as a teacher may be an important part of faculty development.

Value of Teaching

Steinert (2001) asserted the need for faculty development to emphasize the value of teaching. This includes participants embracing their identities as teachers and being supported by the institutions and faculty development offerings. The author maintained that this, in turn, helps to achieve excellence in teaching and learning. Three of the study participants found that the preplanning faculty meetings did reinforce the value of teaching. One participant elaborated and noted that the organization of the program and emphasis on the importance of quality teaching

"compelled [them] to prep even more than normal." Thus, simply participating in a discussion focused on enhancing one's skills as an educator and presenter reinforced the importance and value of teaching.

The findings related to the impact on the value of teaching could inform what faculty development might be most effective. As Steinert (2001) suggested, instead of focusing on knowledge and skill acquisition, the focus should be on "awakening or strengthening one's professional identity." As has been referenced previously, this may need to vary based on one's years in practice and or previous training (or not) as an educator. As one participant shared during the focus group, the faculty development did not change their performance as an instructor but might have if they were earlier in their career. Thus, for the more experienced professional, faculty development might be less about providing tools for teaching but instead reinforcing the importance of teaching and the critical role of the educator. As another participant noted during the focus group, the conversation "gave them pause" to consider the importance of their teaching while teaching and mentoring others. Thus, perhaps effective faculty development, especially for those further in their career, is simply refocusing on the value of teaching and learning and their role in the process.

An unexpected finding from this research was the focus on the content and format of faculty development and what is most effective. There are numerous components of teaching, and each may require different forms of faculty development. For example, providing guidance and coaching, including the delivery of constructive feedback, may be best performed in person. As case study Participant B shared, at this point in their career, in-person coaching works best for them. Participant A shared the same opinion. Cilliers et al. (2022) offered that while there may be benefits to virtual coaching, the benefits of in-person interaction might be difficult to

replicate. Given participants' responses and the literature, it makes sense that faculty development, including coaching, would be most efficient in person.

As another example, the ACGME collaborated with other associations to create the CEM (Accreditation Council for Graduate Medical Education, n.d.). The ultimate goal of the CEM was to provide faculty members with resources to support their ongoing professional development as teachers. These resources are available to all who access the ACGME website reinforcing the importance of professional development.

In responses to some pre- and postquestions, participants noted the need for references, just-in-time learning, tools, and the like. This may come in the format of online modules that provide a more interactive learning experience with quizzes and short videos. In addition, a list of resources with links to journal articles could be provided to be referenced as needed, similar to what was provided for these participants. Thus, this form of faculty development may not require being in person but instead provide resources to review and opportunities for individuals to engage with content at a time and location convenient for them. Participant D reported that even though they wish they had more time to review, they found value in the literature provided as part of their faculty development.

Regardless of the content or format of faculty development, what appears to be most important is the emphasis on the value of teaching.

Answers to Study's Research Question

To answer the research question presented, how does faculty development impact surgeons' roles as educators for residents, fellows, and practicing surgeons across the continuum, the results and findings of this study suggested faculty development does optimize one's role as an educator when the training provided is highly relevant, deemed valuable, and tailored to one's

specific needs, considering where the educator is in their career, at a minimum. The findings made it apparent that a needs assessment is critical to inform the faculty development content and delivery to achieve be most effective. This approach would prevent faculty development from being perceived as a waste of time or not valuable. Convening participants together, and ideally in person, can be useful to promote a sense of community, especially when the gatherings are interactive and engaging. Regardless of where one is in their career, the mere offering of faculty development can reinforce the importance of teaching for participants. Also, faculty development provides opportunities to support and strengthen surgeons' roles as educators, regardless of their experience or competence in this role, which is critical at every stage of their careers. The value of teaching evolves together with what might be effective faculty development. This includes the number of years a surgeon has been in practice. In-person coaching may be most effective for those who are further along in their careers.

Key insights emerged from the focus group discussions, years in practice influence views on faculty development. Seasoned surgeons offered that while the provided resources and meetings were valuable, they would have been especially beneficial earlier in their careers. This finding highlighted the importance of offering tailored faculty development at different career stages, informed by a needs assessment to ensure surgeons receive useful and impactful faculty development that aligns with their needs.

Findings from the study can inform successful faculty development programs and help ensure that surgeons can continue to grow as both surgeons and educators.

Implications for Practice

This research's first implication for practice suggests that providing appropriate faculty development for surgeon educators can enhance knowledge transfer and skill acquisition for residents, fellows, and practicing surgeon learners. Faculty development programs provide surgeons with effective teaching methodologies, improving their ability to educate residents, fellows, and practicing surgeons, provided that these methods align with their needs at specific stages in their careers. As Sirianni et al. (2021) discussed, if the objective is to increase confidence in one's role as a teacher, the questions are what kind of faculty development is required, where do participants lack confidence, and what kind of faculty development will boost their confidence in that area. Faculty development is not a one-size-fits-all approach; rather, it must address the evolving needs of surgeons as they progress through their careers. While the faculty development needs may differ at different stages, the goal remains the same. With effective faculty development, competent surgeon educators help grow competent surgeons, ultimately enhancing patient outcomes.

The second implication for practice from this study is the confirmation that increased engagement in lifelong learning for surgeon educators is beneficial for the teacher, learner, and, ultimately, the patient. Whicker and Nagler (2020) surmised that given the constantly changing nature of medicine and the various roles physicians play, extensive continuous professional development or lifelong learning is necessary. The authors noted that staying competent and confident is essential for a practicing physician's psychological well-being and career success. Faculty development encourages surgeons to view education as an integral part of their professional identity, fostering continuous learning and improvement while demonstrating to the next generation of surgeons the importance of lifelong learning.

The third implication for practice from this study is the importance of helping surgeon employers recognize the value of faculty development. Ideally, this leads to a more balanced workload of clinical responsibilities and the supported teaching of residents, fellows, and practicing surgeons. As Gooding et al. (2016) discussed, a hospital-based academy can offer chances for the growth of interprofessional faculty. By acknowledging the significant role of faculty development, institutions can create an environment where teaching and mentorship are prioritized alongside clinical care, ensuring that surgeons have the support and resources needed to excel as practitioners and educators.

Limitations

There were a number of limitations to this study. The first limitation was the low number of participants overall. The study was open to 30 faculty members, yet only 10 participated. With 10 participants, it was challenging to maintain momentum and interaction among them. This may have impacted the overall depth and continuity of discussions, assuming that a larger number of participants would have allowed for more learning from each other. In addition, the small number makes it more difficult to generalize about a larger population (of surgeons in a teaching role).

A second limitation was the low response rate in the postsurvey. This resulted in lost opportunities for comparing the pre- and postsurvey responses and assessing the impact of the educational intervention. Additionally, the four participants who completed both the pre- and postsurvey were not the same participants who attended the virtual focus group, further limiting the quality of the data analysis. Only two participants completed the pre- and postsurvey and attended the virtual focus group. So, while the study provided some answers to the research

question, these missing qualitative and quantitative data points make it difficult to fully understand the impact of the faculty development provided.

Furthermore, with only 10 participants and minimal continuity between those who engaged in different aspects of the study, there were limited opportunities for participants to build on each other's insights. While the virtual focus group discussion was rich and enlightening, its impact would have been stronger if some participants had engaged in all study components—completing the pre- and postsurvey, participating in the planning meetings, and attending the virtual focus group. Greater engagement across multiple phases would have allowed for a more comprehensive understanding of faculty experiences and perceptions, strengthening the study's findings and answering the research question.

Suggestions for Future Research

A key insight gained from this study is that surgeons require tailored faculty development rather than a one-size-fits-all approach. This was especially clear regarding where the surgeon is in their career. Those surgeons newer to teaching have very different faculty development needs than those with years of experience. A competency-based faculty development curriculum, based on a surgeon's needs assessment results, would ensure alignment between the faculty's specific learning needs and the training provided. This approach would likely be better received by surgeon educators as, if tailored appropriately, the faculty development would directly address individual needs. With limited time, surgeons are highly selective about how they spend time on professional development. They are more likely to participate in faculty development programs if they perceive them as valuable and relevant to their roles. Therefore, ensuring that faculty development is thoughtful and meaningful is essential for successful engagement and impact.

Thus, it is recommended that additional research be conducted on identifying effective tailored faculty development and then evaluating its impact.

More specifically, this study could be replicated by focusing on surgeons in the earlier stages of their teaching careers rather than those in practice for many years. Offering faculty development to surgeons just beginning to teach could have a greater long-term impact, as they would be introduced to best practices in education early on in their careers. By integrating faculty development at the start of their teaching journey, these surgeons would likely be better equipped with the necessary skills to become effective educators, benefiting both their learners and the broader surgical education community.

Faculty development participation could be a required component when replicating this study using the same repeat courses. Analyzing previous course evaluations and comparing them with the new data collected from the learners after the faculty development was implemented will help determine if the educational experience of learners (or participants in these sessions) improved overall as a result of the instructors engaging in faculty development.

Additional research could also be conducted following these participants (or different participants) over the short and long term to understand the longitudinal impact of this education intervention. Did surgeons, in their teaching role, continue to use what they learned? Did they pursue additional faculty development? Did learners' assessments improve over time? Did the participants continue to utilize or reference the resources provided?

Finally, while participants in this study were offered modules, scholarly literature, and focus groups as a form of faculty development, further research should be conducted on what other resources would be most helpful. It would be important to consider both content and delivery or format. It was clear that each participant had a different preference for what they

accessed and what was useful. Thus, further exploration of the types of faculty development should be explored.

Conclusion

I am truly inspired by the dedication of surgeon educators to training the next generation of surgeons. Despite the demands on their time and the constraints of limited resources, their unwavering commitment to educating residents, fellows, and practicing surgeons reflects their passion for advancing surgical excellence and improving patient outcomes, as well as their commitment to lifelong learning.

This commitment is encouraging, and with high-quality faculty development programs—thoughtfully designed to align with surgeons' needs and demanding schedules—surgeon educators will find the time to enhance their teaching skills. By creating flexible, relevant, and competency-based faculty development opportunities, surgeons can be empowered to become even more effective educators without adding undue burden to their already busy schedules. By fostering lifelong learners through effective faculty development, surgeon educators will continue to shape and inspire the next generation of surgeons.

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APPENDIX A:

INVITATION TO PARTICIPATE

Dear XXXX,

In pursuit of my doctorate in education from Bradley University, I am conducting a research study on how faculty development impact surgeons' role as surgeon educators to residents, fellows and practicing surgeons across the continuum. I plan to gather information and collect data from two didactic courses, *Annual Update in Emergency General Surgery* and *Annual Update in Surgical Critical Care*, both held at Clinical Congress, October 22-25 in Boston, MA.

As faculty for the above courses, I am inviting you to participate in this study. The time commitment will be approximately five hours over a six-month period. This study consists of a pre- and postconfidence survey, (3) 1-hour planning meetings, and (1) 1-hour debriefing meeting all held on Zoom, and reviewing resources materials in preparation for your respective presentation.

Your participation is voluntary, and you may choose to discontinue participation at any time and there are no consequences for discontinuing participation. All data will be anonymous and analyzed, and presented in aggregate. The American College of Surgeons has authorized permission for this study.

Link to Informed Consent

Your time and feedback are greatly appreciated as we work together to support surgical education. Please reach out with any questions.

Thank you for your consideration.

M. Jane Burns, MJHL
Researcher's title
Researcher's place of employment
Doctor of Education Student, Bradley University
Researcher's email
Researcher's mobile number

APPENDIX B:

INFORMED CONSENT

The Impact of Faculty Development on Surgeons' Role as Educators to Residents, Fellows and Practicing Surgeons Across the Continuum.

You are invited to participate in a research study. The purpose of this study is to discover how faculty development impact surgeons' role as surgeon educators to practicing surgeons across the continuum**.** This study consists of a pre- and postconfidence survey, (4) meetings held via Zoom, and reviewing resources materials in preparation for your respective presentation. Your participation in this study will take approximately five hours over a six-month period (July 2023–December 2023). All surveys will be anonymous, you may skip specific questions and there will be no link to your name and the research record. Taking part in this study is voluntary. You may choose not to take part or may leave the study at any time. The American College of Surgeons has authorized permission for this study.

Questions about this study may be directed to the student PI researcher in charge of this study, M. Jane Burns at (312) 213-2562 or m.burns2@mail.bradley.edu or the faculty advisor: Dr.T. Scott Estes at (309) 677-3197. If you have general questions about being a research participant, you may contact the Committee on the Use of Human Subjects office at (309) 677-3877.

You are voluntarily making a decision to participate in this study. Your submission of the consent form means that you have read and understand the information presented and have decided to participate. Your participation also means that all of your questions have been answered to your satisfaction. If you think of any additional questions, you should contact the researcher(s).

I agree button

APPENDIX C:

PRECONFIDENCE SURVEY

How many years have you been in practice?

- Less than 5 years
- 5-10 years
- 11-20 years
- 21-30 years
- More than 30 years

What is your age bracket?

- 30-40 years old
- 41-50 years old
- 51-60 years old
- 61-70 years old
- 71 years old and above

Have you completed formal training in adult education, such as below? (Check all that apply)

- Masters's Degree in Education **- 2**
- Harvard Macy Program - **0**
- ACS Surgeons as Educators – **1**
- ACS Certificate in Applied Surgical Education Leadership (CASEL) -**0**
- ASE Surgical Education and Leadership Fellowship (SERF)
- Other: open text box – **1 Local development**

Aside from formal training as above, have you ever participated in faculty development specifically targeted for teaching in a didactic setting? **– 5 yes**

If so, please list and describe:

On average, how many educational lectures (in a didactic setting) do you present in a year?

- 0-5
- 6-10
- 11-20
- More than 20 – **2**

All of you are very confident or somewhat confident

Share your confidence in the following areas as they relate to presenting in didactic settings:

	Not confident at all 1	Somewhat confident 2	Very Confident 3
Organizing and preparing for the presentation			
Utilizing a variety of methodologies for content delivery			
Adapting teaching to accommodate different learners			
Assessing learners			
Providing formative feedback to learners			
Gathering feedback on teaching			

Please share an example of how you have used innovative techniques or technology to enhance teaching and learning experiences in a didactic setting.

Think about a time when you encountered a particularly challenging concept to teach. How did you approach it to ensure the learners understood it?

What challenges or barriers prevent you from enhancing your teaching skills?

APPENDIX D:

POSTCONFIDENCE SURVEY

To what extent did the presentation resources help you in your presentation?

- Very helpful
- Somewhat helpful
- Not at all helpful

What items did you find most helpful?

Was there something missing in the resources that might have been helpful to you in preparing for your presentation?

Following the *Session Title* and review of the resources, share your confidence in the following areas as they relate to presenting in didactic settings:

	Not confident at all 1	Somewhat confident 2	Very Confident 3
Organizing and preparing for the presentation			
Utilizing a variety of methodologies for content delivery			

Adapting teaching to accommodate different learners			
Assessing learners			
Providing formative feedback to learners			
Gathering feedback on teaching			

To what extent did the preplanning faculty meetings improve the sense of community as an educator?

- Very helpful
- Somewhat helpful
- Not at all helpful

Please elaborate:

To what extent did the preplanning faculty meetings enhance your sense of teacher identity?

- Very helpful
- Somewhat helpful
- Not at all helpful

Please elaborate:

To what extent did the preplanning faculty meetings reinforce the value of teaching?

- Very helpful
- Somewhat helpful
- Not at all helpful

Please elaborate: