

INVESTIGATING THE COURSE DESIGN COMPETENCIES OF PHYSICIAN ASSISTANT  
FACULTY MEMBERS: AN INSTRUMENTAL CASE STUDY

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INVESTIGATING THE COURSE DESIGN COMPETENCIES OF PHYSICIAN ASSISTANT  
FACULTY MEMBERS: AN INSTRUMENTAL CASE STUDY

This study was motivated by the central phenomenon of an education program being highly successful despite having few faculty members formally trained in education and limited instructional design support. This study narrowed in on how the faculty members design their courses. To frame this investigation, I relied on the broad terms used in the ADDIE instructional design model. I conducted interviews and think-aloud protocols with eight faculty participants. The data was coded using key phrases from the ADDIE design model along with other codes that emerged from the data. I conducted member-checking interviews to ensure I captured the participant's responses correctly. I found the faculty at Sullivan University's Physician Assistant program are busy professionals who expertly leverage resources to develop their courses. One of the reasons the program has been so successful is the level of support provided by national PA Education Organizations and the participant's willingness to rely on each other for support. I conclude the study with several suggestions. I challenge other professions to use the support provided to PA programs as a benchmark for the support they provide to their training programs or schools. I also suggest that the ADDIE model is an effective way to investigate faculty members' learning design practice and a practical framework for supporting ongoing professional development.

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**CURRICULUM VITAE**

## **Chapter 1: Introduction and Context**

Medical professionals play an essential role in maintaining the health of their community. Medical professionals address the immediate needs of individuals when they are ill, address community-level health needs, and develop innovations that drive the medical field forward to help all of humanity. To meet these broad goals, the medical community needs personnel serving in various roles to ensure every level of support is provided to the communities they serve. Regardless of the role of a medical professional, the goal is to help maintain the health of the community. Therefore, the proper training of medical professionals is essential. I am honored to support a program that trains medical professionals. I support the faculty of Sullivan University's Physician Assistant (PA) program. I will expand on my role in the program later in this chapter and in Chapter Three. The faculty participants in this study are dedicated, resourceful, and committed to student success. There are many indicators that the program is successful. Nevertheless, educational experiences can always be improved. This research is motivated by the beliefs that PA education matters, high-quality faculty members improve instruction, faculty members are often not trained to design learning experiences, and learning more about PA faculty members' design competencies will help me support these faculty members' professional growth.

Physician Assistants (PAs) are valued members of the medical profession. PAs carry out essential functions in the medical system, which include performing patient examinations, taking medical histories, requesting specific tests, analyzing test results, diagnosing patients, and initiating treatment (Malone, 2022). PAs work in a wide range of medical units, ranging from primary care to surgical units. The PA field is growing, and there is a need for highly qualified PA faculty members (Beltyukova & Graham, 2017). The PA profession has a history of providing flexibility and adaptability to meet the changing needs of the medical field (Glicken, 2008). For example, PAs have recently begun filling inpatient physician shortages within hospital settings (Breuning, 2020). It is important to provide them with the best education possible.

Similar to other medical professions, future PAs are taught by experienced PAs. Learning from experienced professionals is valuable, but PA faculty members often have limited training on designing effective learning experiences. Gordes et al. (2021) reported that only 8.3% of PA faculty hold a doctoral degree in education, and over half of PA faculty members reported entering academia with no additional training in education. Medical education programs continue to rely on and recruit instructional designers to improve instruction (Anderson et al., 2019). While support from instructional designers can be valuable, PA education is set up to be driven by faculty members (Accreditation Review Commission on Education for the Physician Assistant [ARC-PA], 2023).

It is well-established that teachers significantly impact students' learning experience (Hattie, 2013). For this reason alone, it is worth investigating faculty members' current teaching practices and how they approach designing instruction. PA faculty members are also expected to contribute to design decisions at the programmatic level (ARC-PA, 2023). Understanding and then supporting the learning design competencies of the faculty members at Sullivan University will help impact student learning experiences and help ensure faculty members can contribute to programmatic-level design decisions.

To support PA faculty members, it would be beneficial to understand more about their current approaches to designing learning experiences. Understanding current design competencies can help instructional design professionals address areas of need through professional development and build trainings that leverage existing strengths. Relying on existing research would not be sufficient to develop a training plan for the PA faculty. Bennett et al. (2017) concluded design practice is influenced by the content being taught within a program, and little research has been conducted to investigate the design competencies of PA faculty members.

There are more reasons to learn about the PA faculty's design competencies. Zaweski et al. (2019) conducted a literature review and consulted experts across the PA Education field to define new Physician Assistant Educator competencies. These competencies require PA faculty members in America to design effective learning experiences. Researchers investigating design competencies in other fields



have also concluded instructional design staff need a better understanding of faculty members' design competencies (Bennett et al., 2018; Goodyear & Dimitriadis, 2013).

### **My Role in the Program**

I have supported Sullivan's PA program for five years. I was working as an Instructional Support Specialist for the College of Pharmacy when the College of Pharmacy merged with the Physician Assistant Program. At first, there was confusion about my role and what support I could provide to PA faculty members. This confusion was due to my inability to clearly outline my roles to the faculty members. At first, I supported the PA faculty members with various IT issues, LMS management, and facilitated their use of our assessment platform. There were a few times when I directly supported the PA faculty members' course development, but this was not common.

Then, two years ago, I was promoted to the Director of Instructional Design. This was my chance to focus on supporting faculty members' design practices. I did not take full advantage of this opportunity. I found myself still focusing on isolated issues and dealing with daily tasks. This project is part of an effort to push through the surface-level issues and begin to focus on developing learning designers. I no longer want to provide piecemeal support. Rather, I want to fully understand the current design competencies of the PA faculty members so I can begin helping all the faculty members develop their learning design competencies. Rather than imposing a design strategy on the faculty members, I want to learn about their current design competencies. My hope is this will help me be viewed as a supportive and understanding teammate as opposed to an outsider with a plan. In short, I would like to learn more about how I can help Sullivan's PA faculty design the best courses possible.

### **National Level-Organizations that Support PA Education**

Four national organizations have been established to support PA education programs and practicing PAs. The organizations are the Physician Assistant Education Association (PAEA), the Accreditation Review Commission on Education for the PA (ARC-PA), the National Commission on Certification of Physician Assistants (NCCPA), and the American Academy of Physician Associates

(AAPA). Each of these organizations serves a unique purpose which will be highlighted below. The overall purpose of these organizations is to ensure the PA profession continues to thrive. This support includes detailed accreditation standards, programmatic level assessments to help monitor student progress, detailed reports of student progress, guidelines for creating a curriculum, and other supports for PAs at every career stage. These organizations also facilitate communication between PA programs. Relevant findings from this study could be distributed through these support organizations.

The Physician Assistant Education Association's (PAEA) mission is to “Encourage and assist programs to educate competent and compassionate PAs” (Asprey & Barwick, 2017, p. 49). PAEA is the national organization charged with supporting and representing the programs that will train the next generation of PAs. To support this mission, PAEA offers a national education forum, faculty development opportunities, support services for research, a peer-reviewed journal, and other tools to improve PA education (Asprey & Barwick, 2017).

The Accreditation Review Commission on Education for the PA (ARC-PA) is the national program charged with accrediting PA programs. ARC-PA sets and monitors programmatic level standards for every PA program in the United States. The ARC-PA Fifth Edition standards are the current standards for PA programs. ARC-PA standard A2.13 is pertinent to this research project: “Instructional faculty must be: a) qualified through academic preparation and/or experienced to teach assigned subjects and b) knowledgeable in course content and effective in teaching assigned subjects.” (ARC-PA, 2023, p. 9). PA programs must ensure their faculty are effective teachers, which can be a complicated endeavor. Faculty members are expected to design effective courses, possess educational qualifications to deliver proper instruction, evaluate student performance, contribute to the design of the curriculum, and evaluate the overall program (ARC-PA, 2023). These complicated design tasks warrant an effective professional development series, but first, I need to develop a better understanding of the faculty’s current design competencies.

Another relevant PA education association is the National Commission on Certification of Physician Assistants (NCCPA). NCCPA creates and delivers the Physician Assistant National Certifying

Examination<sup>®</sup> (PANCE), the qualifying exam PA students must pass to become practicing PAs. NCCPA collects data on qualifying exam pass rates and provides detailed reports to PA programs. These reports provide detailed feedback on how a school’s graduates performed on each competency outlined by PAEA. To summarize, PA programs are provided with a clear expectation of what they are to teach, a summative assessment for their graduates, and detailed reporting on how students performed on the summative assessment.

The American Academy of Physician Associates (AAPA) is the national society that represents practicing PAs and advocates for the profession. AAPA collaborates with ARC-PA to provide insights into accreditation standards. AAPA also offers resources to support people interested in becoming a PA. These resources include tips for financing PA school, fielding frequently asked questions about the profession, and offering a student membership to the organization.

**Table 1**

*Description of PA National Organizations*

Organization Name (Acronym)	Role
Physician Assistant Education Association (PAEA)	Supports PA programs and faculty
Accreditation Review Commission on Education for the PA (ARC-PA)	Accredits PA programs
National Commission on Certification of Physician Assistants (NCCPA).	Implements the national certifying exam for PA students to enter the PA profession and maintains other certification requirements.
American Academy of Physician Associates (AAPA)	Supports practicing PA, current PA students, prospective PA students and advocates for the profession. AAPA members can provide insights into accreditation standards.

## **Sullivan University's Physician Assistant Program**

Sullivan University's PA program began in 2014. It is an accelerated program that spans two years. Both years of the program follow a year-round quarter-based system. The first year of the program is focused on didactic education. First-year students are primarily on campus and attend classes five days a week. During the first year of coursework, students are enrolled in courses for eleven weeks, followed by a two-week break. The second year of the program focuses on experiential education. In their second year, students cycle through various clinical sites. Each clinical site rotation lasts six weeks. Students complete two rotations or twelve weeks of experiential education and then have a one-week break. Every 12 weeks, students return to campus to debrief, attend lectures, and take assessments. Upon completing the program, students earn a Master of Science degree entitled Physician Assistant.

## **Sullivan's PA Faculty Need On-going Professional Development**

Like other PA programs nationwide, all the PA faculty members at Sullivan University came directly from medical practice (Joyce, 2021). Sullivan's PA Faculty members have attended various professional developments on best teaching practices. These professional developments include PAEA's New Faculty Jump Start, New Faculty Accelerator, or Faculty Skills 101 workshops (Physician Assistant Education Association [PAEA], 2023). I will provide a more detailed accounting of the faculty's training histories in Chapter Three of this report. Regarding formal degrees in education, two out of the 14 PA faculty members hold a degree in education. Given the lack of prior training, faculty need continual professional development focused on essential elements of education. Training is also needed to meet future challenges. It is unclear which design competencies should be addressed first.

## **Effective Faculty are Required to Develop and Maintain Design Competencies**

Other fields see the value of supporting faculty members' design competencies. Van Dijk (2020) conducted a systematic review of 46 frameworks focused on defining what makes an effective faculty member and concluded that effective faculty members possess learning design skills. Chuenjitwongsa et al. (2018) explored existing literature to help define what constitutes an effective medical faculty member

and concluded that “instructional design” was an essential competency for effective faculty members. As knowledge gaps regarding design competencies are found and addressed, this will improve faculty members’ performance.

Higher Education is complex, and institutions of higher learning need a team of problem solvers to address emerging issues. A learning designer can contribute to solving complex issues. These complex problems include increasing student engagement, addressing student failures in a course, ensuring programmatic outcomes are met, and various other issues (Henriksen et al., 2020). These problems are not easily addressed and warrant multiple perspectives. Relying on a few experts may not be enough to resolve every future problem. Colleges or programs need faculty members comfortable with the design process. Henriksen et al. (2020) concluded that supporting faculty members’ design competencies sets them on a growth trajectory toward becoming designers capable of overcoming complex problems. Providing faculty members with trainings on design could help create a team of problem solvers with various skill sets and perspectives that share a common language. To achieve this goal, all faculty members need to develop their design competencies. Bennett et al. (2018) argued empowering faculty members to become designers of learning is a scalable and sustainable solution for developing a faculty capable of dealing with changes and unforeseen challenges. The research team argued that design should be considered an integral and routine part of a faculty member’s teaching practice. Faculty members who are creative problem solvers who reflect on their designs and continually improve their designed solutions will be more capable of meeting future challenges.

### **Sullivan’s PA Program – Strengths**

There are several indicators that Sullivan’s PA program is successful. One measure of a PA program’s overall success is its graduates' performance on the Physician Assistant National Certifying Examination (PANCE). More specifically, programs are measured by their graduates' first-time pass rate on the PANCE assessment. Sullivan’s first-time pass rate has averaged 91% over the last five years (Pasquini, 2022). It is worth noting that the average national first-time pass rate for the PANCE was 95%

over the same period. Sullivan's PA program shows positive results, but there may be room for improvement.

Due to high demand, Sullivan University's PA program is expanding. In previous years, the program would enroll 50 students annually. For a recent matriculating cohort, the class of 2025, the program received 637 applications (Liaison, 2023). The previous five enrollment cycles from 2016 to 2021 also had many applications. The minimum number of applicants in an enrollment cycle was 595, the maximum number of applicants was 938, and the average number of applicants for the five-year period was 742.2. With a large pool of applicants, Sullivan's PA program has been highly selective regarding the students they accept. Typically, students accepted into the program have a history of academic success and score highly on all enrollment criteria. Due to the program's high demand, the university has expanded the cohort size to 65 students. In addition to expanding the cohort size, the college is exploring the possibility of offering a Doctoral Degree. If this plan moves forward, this expansion will add at least one more year of education to the current program for doctoral students. These changes will likely require faculty members to design or redesign new learning experiences for their students.

### **Sullivan's PA Program – Challenges**

The instructional design support offered to the PA program may need to improve. The College's Office of Academic Affairs and Assessment (OACA) supports the PA Faculty members' learning design practices. The support team consists of myself, the Senior Director of Instructional Design and Assessment, and a Director of Instructional Effectiveness. We also support a Doctor of Pharmacy Program and an online Pharmacy Technician Program. Our support team also has teaching responsibilities during the academic year. Due to time constraints and limited personnel, PA faculty members design their courses with limited support from instructional design support staff.

PA faculty members at Sullivan University are commonly asked to redesign courses. These faculty members have limited or no formal training in course design. When I began this study, I knew little about the faculty's experience and comfort with learning design. They had already learned a great deal about course design from experience, trial and error, or other sources. There may also have been

areas of weakness or knowledge gaps that instructional design support personnel could help address. The college did not know which topics or design competencies needed to be addressed with the PA faculty members.

Not understanding the faculty members' course design process is a significant issue that needs to be addressed. The instructional support team wants to empower PA faculty members to become effective designers of learning experiences. The team could not assume which topics must be addressed or which design tasks are valued by the PA faculty members. Learning about current design competencies will help set an effective professional development agenda. Exploring this topic will also help my team avoid interfering with any current successes in the program. The need to learn more about the challenges faculty members face when designing a course may be common across PA education. Ideally, this study will generate research instruments and methods applicable to other PA programs.

Sullivan's instructional design support team cannot use existing data to set a professional development agenda. At the national level, the PA education community does not gather data about faculty members' needs pertaining to course design. The Physician Assistant Education Association (PAEA) is missing an opportunity to monitor current faculty needs regarding course design. PAEA surveys PA faculty members annually. As of 2022, there were no questions about course design competencies included in the annual PAEA survey (PAEA, 2024).

Another reason we need to empower PA faculty to be learning designers is to meet future challenges. The program's expansion was listed as a strength earlier in this chapter. However, this expansion also comes with challenges. PA faculty members may need to consider alternative approaches to accommodate larger cohort sizes. Additionally, if the program begins to offer a Ph.D. in Physician Assistant Studies, it will result in additional courses that need to be designed. Faculty will need support to handle this transition. Before deciding what this support will look like, we first had to learn about faculty members' current design competencies.

## **Purpose of the Research**

One of the questions that motivated this study is, “What can instructional design personnel do for their program during periods of success?”. One path toward improving the educational experiences for PA students is to support PA faculty members’ course design competencies. Stark (2000) points out that most efforts to improve teaching focus on the teacher’s role as a ‘classroom actor’ and the teacher’s role as an ‘academic planner’ is often overlooked. While investigating faculty members’ role as an academic planners, Stark (2000) investigated tasks such as selecting learning materials, considering the characteristics of incoming students, and reviewing data from previous course evaluations. This aligns closely with the concept of a learning designer, which I will define in the second chapter of this study. While the PA program is experiencing success, it is an opportune time to develop faculty members’ ability to serve as learning designers. Encouraging and empowering faculty members to approach their teaching as a design practice has several potential benefits. With proper training and support, faculty members can use design competencies to offer a solution for a future design challenge, evaluate their proposed solution, and work iteratively until an acceptable solution is reached.

PA faculty members at Sullivan University face several challenges. These challenges include delivering a tremendous amount of content within an accelerated course, balancing student knowledge acquisition with opportunities to think critically, deciding the best way to present material, and evaluating the performance of a course. By developing the PA faculty’s design competencies, we can help faculty members address these challenges. Again, before developing a series of professional developments, it would be useful to develop a better understanding of the PA faculty members’ current design competencies. The ultimate goal of this research project is to explore PA faculty members’ current design competencies to see if there are ways instructional design personnel can support PA faculty members’ course design practice.



## **Chapter 2: Literature Review**

The academy agrees that examining the learning design practices of faculty members is a promising area of research but is also a frustrating pursuit. In the literature review, I will highlight the benefits of encouraging faculty members to approach their teaching as a design practice in which they utilize key learning design competencies. I will also point out calls for future research into this area. However, there are challenges to exploring a creative pursuit. Unpacking learning design generates several threads of research worth further study. Examining course design competencies requires a clearly defined purpose and an appropriate lens for exploring the phenomenon.

In this literature review, I will briefly review an existing framework developed to organize research into learning design. I will define key terms and concepts that will be the focus of this study. Then, I will review the findings of previous studies into learning design. I will also establish the importance of context in learning design practices. Finally, I will validate my framework and focus for this investigation based on existing research.

### **The McKenney Ecological Framework for Investigating Design Competencies**

One of the few existing frameworks I found in the literature regarding faculty members' course design competencies was the McKenney Ecological Framework (McKenney et al., 2015). The authors describe their framework as "an ecological framework that would support researchers in the study of teachers' design" (McKenney et al., 2015, p. 183). McKenney et al. (2015) conducted a literature review that synthesized research into teacher design competencies, and the team concluded existing research could be organized into three strands: technical, realist, and phenomenological. This framework recognizes the interplay between these three threads and the critical role of contextual considerations (McKenney et al., 2015).

The technical strand of this framework focuses on the “testing and critique of models to support the process of design” (McKenney et al., 2015, p. 185). Other critical areas within the technical strand include design models, design thinking, support tools, and faculty members' criteria for assessing instructional designs (McKenney et al., 2015). The phenomenological strand focuses on the designers' experience and a designer's ability to utilize flexible or artistic design approaches. The third strand of the McKenney et al. framework is the realist strand. This strand focuses on what designers do in the face of real-world considerations (McKenney et al., 2015). The realist strand focuses on pragmatic solutions, practical design work, and finding workable solutions based on personal beliefs.

Using this framework, this study would be best classified under the realist strand of research into learning design practices. The McKenney framework recognizes the interplay between these three threads and the critical role of contextual considerations (McKenney et al., 2015). The participants in this study have not been formally trained in course design but were still required to redesign or design courses. This research provides a robust description of how PA faculty members at Sullivan University find workable solutions to their learning design problems.

I will review additional calls for future research later in this chapter, but there is one request for research into this area worth noting. Razzouk and Shute (2012) call for research into faculty members' design competencies in specific contexts. This study is not intended to be widely generalizable. However, this study examines faculty members' learning design practice within a specific context. To help connect this study to the larger goal of understanding faculty's design competencies at a more global level, I am using the McKenney et al. Ecological Framework to help classify this project for the larger research community.

### **Defining Learning Design**

Upon reviewing the literature investigating faculty members' learning design process, there are several elements incorporated into the term learning designer. Defining design tasks varies across the literature. Van Dijk et al. (2020) defines educational design as “the development of goals, content, structure, activities and material for education and combining these into a coherent whole” (p. 8).

Razzouk and Shute (2012) emphasize the importance of working iteratively in their definition of design thinking as “an analytic and creative process that engages a person in opportunities to experiment, create and prototype models, gather feedback, and redesign” (p. 330). The terminology of design work also changes depending on who is carrying out the design work. Bennett et al. (2015) describe the design work carried out by teachers as ‘learning design’ while ‘instructional design’ is conducted by specialist designers. A learning designer is an educator who conducts a design process to deliver effective learning experiences for their students and works in iterations to improve their design continually.

### **Defining the Focus of This Research**

Given the complexities of design, investigating an educator’s course design process is difficult. A skills assessment falls short of capturing what faculty members value, and an abstract conversation regarding design principles falls short of investigating real-world practices. To further complicate the investigation, the design process is happening within a complex social structure. There are many elements in this process worth exploring. This study aims to explore the faculty members' design competencies. A competency is a combination of knowledge, social skills, attitudes, and values (Kirschner, 2015).

The next challenge is identifying when these competencies would likely be used in practice. After interviewing and surveying over 80 faculty members with experience in designing courses, Stark (2000) concluded there are four levels of course planning, which include “routine maintenance” (ad-hoc changes by faculty), “routine review” (revisions triggered by a systematic review), “major revisions”, and “planning a new course” (p. 420). These four levels of course planning provide scenarios in which participants are likely to utilize their current design competencies. In addition to examining learning design competencies, it will be essential to explore the context in which this design practice is being carried out.

### **Contextual Factors Impact Design Decisions**

Contextual factors are key to understanding a teacher’s learning design practice. Understanding the context or work environment is part of several instructional design frameworks (Dick et al., 2015;

Laurillard, 2012). Bennett et al. (2017) point out that workplace culture strongly influences faculty members' design choices. Stark (2000) reminds us that design is a creative act that must be examined contextually. Goodyear et al. (2009) point out that to move the learning design field forward, there needs to be a better understanding of the context in which design resources and tools are being used. Bennett et al. (2018) point out that if contextual barriers are not identified and removed, there is a reduced chance of faculty members continually improving their learning design competencies. Understanding the contextual factors allows for a much more robust understanding of faculty members' design processes. This is necessary to plan future professional development effectively.

The framework for this research project needs to account for the context in which the PA faculty members make their decisions. The goal of this research project is to help prepare faculty members to meet current and future design challenges. Previous research emphasizes the impact of the work environment or context on design competencies. Therefore, this study will account for contextual factors.

## **Results From Previous Studies**

### ***Faculty Members in Higher Education Often Need Support to Design Effective Courses***

Faculty members commonly need support to design effective courses. After a career supporting educators in higher education, Fink (2013) concluded that course design is the task faculty members are least prepared to carry out. Kim (2019) argues that many faculty members lack the competencies and confidence to design learning experiences. Huizinga et al. (2014) concluded that most teachers are novice designers and need support to sequence lessons or activities effectively. Bickerstaff and Cormier (2015) interviewed 100 faculty members who were asked to teach a new course and concluded faculty members needed additional support to become effective designers. Specifically, faculty needed support to engage in reflective practice. Key elements of reflective practice include evaluating learning materials and working iteratively.

In addition to design being difficult for faculty members in higher education, design practice may be invisible or unknown to teachers (Kim, 2019). Many faculty members may base their current teaching

practice on how they were taught as students (Oleson & Hora, 2014). If this is the case, faculty members would be more familiar with the student-facing practices of a classroom teacher and less familiar with designing learning experiences. PA faculty members may not be familiar with competencies such as analysis and evaluation. These competencies were not visible to them as students.

After conducting semi-structured interviews with 30 faculty members, Bennet et al. (2015) concluded that personal beliefs significantly influence faculty members' design choices, and design supports need to build on faculty members' personal beliefs. Given the tremendous impact context has on design decisions, we cannot assume that the challenges and opportunities of supporting learning designers are the same across disciplines. There is a need to work directly with PA faculty members to learn more about their personal beliefs about what makes an effective course. Faculty members need personalized support.

### ***Focusing on Course Design has Immediate and Long-Term Benefits***

Faculty members benefit from training on instructional design. In a qualitative study, Henriksen et al. (2020) worked with 22 teacher participants to investigate the impact of a course focused on design thinking. The study concluded that instruction on design competencies increased the teachers' empathy and comfort with uncertainty. Garreta-Domingo et al. (2018) facilitated a course on designing learning experiences for 380 educators and surveyed the participants. After the course, several participants mentioned they saw a clear benefit to approaching teaching as a design practice. While there are documented benefits of training focused on design competencies, it is important to understand the participants' current approach to course design before designing training (Bennett et al., 2017).

Preparing faculty members to work as learning designers has several benefits for the program. Goodyear (2015) argues that encouraging faculty members to embrace their role as learning designers can improve the quality of education even in financially difficult times and empower the faculty to drive improvements within the institution. Training faculty members on effective design also helps faculty members create new content for the institution.

### ***Learning Design Needs to Continue to be Investigated***

Researchers who have explored the learning design competencies of faculty members in medical education have called for more research. Cook et al. (2008) conducted a meta-analysis of the literature on internet-based learning in the health profession. The researchers concluded further research into instructional design strategies used within medical education programs was needed. More recently, Straker et al. (2018) presented several examples of PA faculty members incorporating educational technology into their classrooms and provided insights into these experiences. The research team concluded that further research is needed to determine how faculty members in medical education ensure proper alignment between pedagogical approaches and desired learning outcomes. Rather than developing faculty members' design capacity, many medical schools hire instructional designers to support faculty members' course design (Anderson et al., 2019). In my work environment, hiring additional personnel is not an option. I need to support faculty members in their role as learning designers.

There have also been calls for research into faculty members' learning design competencies outside medical education. Dalziel et al. (2015) called for the research community to move past the theoretical models of learning design competencies and explore the actual design work being carried out by faculty members. Goodyear (2005) reached a similar conclusion and pointed out the lack of studies investigating actual design competencies conducted by faculty members. Later, Goodyear (2015) was still unsatisfied with the amount of empirical research focused on understanding educators' approach to learning design and renewed his call for more research into this area. Razzouk and Shute (2012) reach a similar conclusion, "There is considerable empirical work to be done to establish a full understanding of design thinking" (p. 345). Li et al. (2022) point out the educational community needs to know more about what supports educators need to enhance their learning design competencies. There is a clear need for further research into how faculty members use design competencies across various disciplines. The next step is to identify a framework that names specific design competencies to investigate. Below, I will discuss findings from existing literature that informed this decision.

## **The ADDIE Design Model as a Framework for Investigating Learning Design**

There are several instructional design models and approaches that faculty may use to design their courses. These models could help answer which competencies a learning designer should possess. However, the participants in this study have not been formally trained in designing learning experiences. Given this lack of training, predicting the design approaches of the faculty participants is difficult. Baldwin et al. (2018) conducted interviews with 14 faculty members who design online courses and concluded instructors rarely use formal instructional design models. If the participants have been learning by trial and error, their design work may or may not align closely with known instructional design models. Participants may also use unexpected terminology to express design concepts. For this study, the key factor in choosing a model to frame this investigation was breadth. The framework needed to be broad to accommodate the possibility of widely different design approaches.

The need for a broad framework is represented in previous studies. For example, Goodyear et al. (2009) conducted a study with one university educator to explore her design choices (as cited in Kali et al., 2011). The research team concluded that she made design choices based on pedagogies that seemed to be antithetical. At times, she favored exploratory learning, and at other times, she favored direct instruction. The research team reasoned that their participant's design logic was not based on a certain model or theory but on "knowledge-in-pieces" (Kali et al., 2011, p. 140). Ertmer and Newby (1993) also recognize the complexity of design by arguing the best designs will likely pull from multiple theories and be contextually specific. A narrowly defined design process will not capture all participants' approaches to designing learning.

There has been research that suggests the ADDIE design model may be an appropriate framework for investigating faculty members' learning design competencies. Baldwin et al. (2018) found faculty members with a limited background in learning design carried out design tasks that aligned with the terminology associated with the ADDIE model. In addition to ADDIE possibly aligning with current design processes of the participants, there is another reason to utilize ADDIE as a framework. Other

researchers have used the ADDIE model to investigate design competencies and organize their findings (Hoogveld, 2002; Lee & Jang, 2014).

ADDIE is an appropriate framework for this study because it provides an appropriate breadth capable of handling unexpected answers from the participants. Research also tells us novice learning designers' course design may closely align with the ADDIE model. ADDIE has also been used as a framework in previous research into learning design. ADDIE is a broad framework that potentially aligns with the participants' current learning design practice and has been used in prior research. ADDIE is an appropriate framework for this study.

This study will rely on the competencies outlined in the ADDIE design model (Branch, 2009). The terms from the ADDIE model were selected for their breadth. A more prescriptive model, such as the Dick and Carey model of design (2015), may be too narrow to capture the design process of educators not trained to use that model. It is unclear whether faculty follow a set sequence or if they will follow specific subitems for each phase of the design process. It is difficult to predict the process used by novice designers. The broad and flexible ADDIE model will serve as an appropriate framework for investigating the design competencies of novice designers.

This study will include the following competencies from the ADDIE model: analysis, design, development, implement, evaluate (Branch, 2009). Many competencies discussed elsewhere in the instructional design literature can be situated under the umbrella terms provided by the ADDIE model (Schott & Seel, 2015). I am not concerned about how closely the faculty participants adhere to any one model. Rather, I want to learn about their current design competencies. My thoughts align with Kirschner (2015) who compares expert teachers to top chefs who integrate different ingredients, techniques, and tools to develop the best possible product. The emphasis is on supporting the design competency, not ensuring adherence to one particular design process. Below, I will further explain why each competency has been included in this study and the specific topics that will be investigated under each competency.

### ***Previous Research Pertaining to the Analysis Competency***



The research community recognizes that learning designers must be able to analyze learners' needs. Kirschner (2015) concluded learning designers must analyze the learners and situational factors to design effective instruction. Vermunt and Verloop (1999) reached a similar conclusion and argued teachers needed to be able to diagnose students' learning and thinking strategies. Brown et al. (2020) investigated the analysis competency in their study examining a training session for new teachers focused on supporting their design competencies. The inclusion of this competency speaks to its perceived value. Other education professionals who have authored a design process, such as Dick et al. (2015), have highlighted the importance of analyzing learners and included it in their design models.

Analysis is also worth exploring as it may be an area where additional support is needed. Novice learning designers often fail to spend enough time analyzing the instructional problem and move quickly to developing a solution (Ertmer et al., 2008). The analysis competency is even difficult for professionals who have received formal training in education. Hoogveld (2002) worked with ten teacher trainers and found that pre-service teachers often failed to analyze their students' needs or current performance levels before designing instruction (as cited by Kali et al., 2011). Existing research demonstrates faculty members may struggle with the analysis phase. This study will focus on the participants' approach to analyzing learners and auditing available resources (Branch, 2009).

### ***Previous Research Pertaining to the Design Competency***

Branch (2009) defines the design phase as verifying the desired learner performance and choosing effective assessment strategies. This competency is important because the design phase is where designers set the path for student success and the criteria to measure it. Choosing an effective assessment strategy is a complex task and requires a great deal of planning. This study will focus on capturing participants' approach to setting and assessing a goal, maintaining instructional alignment, and what instructional practices/products are most valued by the participants.

Setting and assessing a goal requires a tremendous amount of planning. The designer must set the goal and then align the rest of her learning design to meet that goal. Branch (2009) describes ensuring that

objectives, instruction, and assessment align as establishing the “Line of Sight” for the rest of the project. This “Line of Sight” reflects an emphasis within the existing literature on ensuring objectives, instruction, and assessment occur at the same depth of knowledge. Cohen (1987) defined “instructional alignment” as aligning curriculum and assessment. Biggs (1996) modified this term to “constructive alignment” to reflect the use of constructivist principles during the design of a learning experience. Focusing on constructive alignment throughout the design process is an established best practice. Investigating how participants maintain constructive alignment in their course designs will allow participants to explain their process for aligning objectives, instruction, and assessments.

It will also be valuable to learn more about the sequence participants use to develop and set the goals for their course. Some participants may first establish goals, then plan instruction, and finally develop an assessment. However, some participants may prefer the backward design model outlined by Wiggins et al. (2005). In this approach, designers are encouraged to start with the end in mind. The sequence in which the faculty participants set goals and plan instruction matters because it may signal a need to provide training on backward design principles. Backward design is effective but may not be an intuitive approach to designing a course (Wiggins et al., 2005).

The design competency encompasses several tasks worth considering. Martin et al. (2019) interviewed award-winning faculty members regarding the roles and competencies of a teacher designer. All eight participants in the study mentioned several tasks they incorporated into their design process. These tasks include engaging students in active learning opportunities, visualizing a course design schema that supports the goals of the course, and ensuring the course is ADA-compliant. Bennett et al. (2018) point out that problematizing learning opportunities, building in student choice, and designing around contextual constraints are other important considerations when designing a course. Designing a learning plan that incorporates these components may be difficult for the participants in this study. The participants in this study teach in an accelerated curriculum and have limited training in education principles. It is important to learn which elements the participants are including in their courses to provide necessary support. It will also help define which key elements are not included in courses.

Educational design is a broad term, and it is defined differently across existing literature. Goodyear (2005) defines educational design as "...the set of practices involved in constructing representations of how to support learning in particular cases" (p. 82). Goodyear's definition seems to be pulling in multiple competencies from the ADDIE design model. As a reminder, Branch's (2009) interpretation of design focuses on setting desired learner performance and choosing effective assessment strategies. However, Goodyear's definition is an excellent reminder to be open to unexpected approaches of how the participants arrive at a plan to support learning. The main goal of exploring the design competency is to examine how participants represent a plan to support student learning.

### ***Previous Research Pertaining to the Develop Competency***

The existing literature highlights two common paths for faculty members to develop learning materials. Typically, faculty members create or repurpose instructional materials. These two approaches each come with pros and cons. These are two different skill sets that require different support from instructional design support staff. Below, I will point out a few insights into both approaches from the existing literature.

Creating instructional materials is a creative pursuit. Huizinga et al. (2014) point out that supporting a creative pursuit is a difficult endeavor, given its open nature. The difficulty of supporting this creative pursuit is made more difficult if the faculty members also lack confidence in their ability to create new materials. Kim (2019) conducted a literature review and concluded that few teachers have confidence in their abilities to design learning materials.

Faculty members may prefer finding existing instructional materials. Kumar et al. (2019) interviewed eight award-winning online instructors and found these faculty members often repurposed existing materials. In the Kumar et al. (2019) study, the participants' key criteria were authenticity and relevancy. Branch (2009) argues educators should select learning materials that support active learning, allow learners to interact with peers and experts, provide practice opportunities, give feedback, and help students transfer their learning to new situations. Halupa (2019) does not provide specific criteria but does

remind us selecting effective instructional materials is the responsibility of the faculty member and the instructional designer. Specifically, this team must decide if the materials present content at an appropriate depth of knowledge.

I have worked with the participants in this study for several years, and I know they have explored ways to develop more active learning opportunities for their students. DeWitt (2019), a PA faculty member at a different program, provided several issues to consider when developing an active learning strategy. Based on her personal experience as a faculty member, she advises faculty members to avoid spending an excessive amount of time planning active learning strategies, to develop strategies that align with their personal teaching style, and to have a contingency plan. As I explore the participants' development competency, I will be interested to see if these suggestions are already being followed.

### ***Previous Research Pertaining to the Implement Competency***

The implementation phase has several key elements worth exploring. Branch (2009) describes this competency as everything required to “prepare the learning environment and engage the students” (p. 132). At Sullivan University's PA program, implementation requires the designer to prepare guest lecturers and students for learning. Specific elements worthy of inclusion based on Branch's description of the implementation phase include how participants prepare guest lectures to teach in their course, how participants plan for students who may need additional support, and what efforts are made to engage students.

PA faculty members at Sullivan University are charged with preparing guest lecturers to deliver content in their courses. It is unknown how the participants in this study are preparing the guest lecturer to implement the instruction.-Branch (2009) provides several topics that can be covered in these train-the-trainer sessions, such as practicing relevant instructional strategies, practicing with learning resources, preparing the lecturer to handle challenges, and reviewing the overarching goals of the instruction (Branch, 2009).

I will also explore how participants plan for students who may struggle with the content covered in their course. Bennett et al. (2018) include the following tasks in the role of teacher designer: making adaptive changes while teaching, including choices for students, and problematizing learning opportunities. Of these tasks, ‘including choices for students’ is pertinent to this study. Participants may be using built-in decision points to help students struggling with the material. Participants may also build in ‘problematized learning opportunities’ for high-performing students. While I will not be able to dive deeply into all the tasks defined by Bennet et al. (2018), I will be able to investigate how participants ensure their plans can accommodate these tasks.

Martin and Kumar (2019) point out that award-winning faculty members carry out several tasks during the implementation of the course. A few tasks relevant to the implementation competency include helping students manage time, responding to students’ questions, and using formative assessments (Martin & Kumar, 2019). The focus of this research is on how participants are designing a course. This study explores ways participants develop plans that will facilitate these tasks when the course runs.

### ***Previous Research Pertaining to the Evaluation Competency***

Evaluation plays a critical role in course design, and this competency has been researched previously. Branch (2009) states the purpose of the evaluation phase is to “assess the quality of the instructional products and process” (p. 151). Evaluating one’s ideas is imperative to working iteratively. A learning designer should find areas to improve for the next generation of their course. Evaluation is essential to educators’ continual improvement (Norton & Hathaway, 2015). Key topics that will be researched under the evaluation competency include if courses are being evaluated by the participants, which systems or models are being used to evaluate courses, and how the results of the evaluation process are used to improve the design of the course.

While evaluation is a crucial aspect of design work, many teacher designers may struggle with or overlook this competency. Li et al. (2022) argue that there has not been enough attention paid to how learning designers evaluate their courses. They argue the lack of support and tools to encourage teachers

to reflect on their designs is a contributing factor to why design science has not become commonplace in education. After conducting a qualitative study with six teachers and six facilitators, Huizinga et al. (2014) point out that teachers typically do not initiate an evaluation plan independently. Furthermore, the researchers concluded when educators are motivated to try to evaluate their learning designs, they often lack the skills to conduct an evaluation.

There are several possible approaches to evaluation for the participants to choose from. There are calls in the literature encouraging faculty members to utilize Learning Analytics to investigate and inform their learning design (McKenney & Mor, 2015). Ferguson (2012) defines learning analytics as “the measurement, collection, analysis, and reporting of data about learners and their contexts, for purposes of understanding optimizing learning and the environments in which it occurs” (as cited in McKenney & Mor, 2015, p. 267). McKenney & Mor (2015) call on educators around the world to focus on evaluation and data collection to become “citizen scientists” capable of contributing to a larger conversation about what works in education. Faculty members with limited formal training in education will likely need support collecting and analyzing the data needed to meet this goal.

Branch (2009) more modestly suggests that faculty members can rely on Kirkpatrick’s Four Levels of Evaluation (2016) to develop their ability to evaluate their learning designs. This would require faculty designers to capture the reactions of students, the learning outcomes, behavioral changes, and the overall results of the learning design (Kirkpatrick & Kirkpatrick, 2016). There are many resources, including a textbook, to help support teacher designers as they work Kirkpatrick’s four levels of evaluation.

Bowyer and Chambers (2017) highlight several other evaluation methods available to learning designers, including the Web-Based Learning Environment Instrument (WEBLEI), the Hexagonal E-Learning Assessment Model (HELAM), the E-Learning Framework, several rubric style evaluations, and even put forth their own model of evaluation. There are plenty of methods and models to help evaluate learning designs. However, given the complexities of the models and the abundance of options,

instructional design support staff will likely need to help faculty designers find an evaluation system that meets their specific needs.

The evaluation process only matters if the data is being used to improve the next iteration of the course. The participants in this study receive data from two instruments, course evaluations and faculty evaluations. There may be additional sources of data that I am unaware of as well. It is also unknown which data is valued by faculty members and their process for making changes to their course based on these data sources. A key aspect of learning design is working iteratively (Branch, 2009). The goal is to learn more about how participants use evaluation practices to improve their course designs.

### **Research Questions**

After reflecting on the existing literature, it was clear that my research questions had to be open-ended. Course design is a creative pursuit, and I needed to allow participants to explain their design process in their own words. After thoughtful consideration, I chose to investigate the following research questions.

1. How are Physician Assistant (PA) faculty members at Sullivan University designing their courses?
  - a. How is the work environment or context influencing Physician Assistant (PA) faculty members as they design their courses?
2. What support do the PA faculty members at Sullivan University need to help their course design practices?

## Chapter 3: Methods

### Study Design

This study examines the learning design practices of Sullivan University's PA faculty. This requires understanding the faculty participants' experiences with designing courses, their understanding of the design process, and a rich description of the context in which they make their design choices. This requires examining participants' instructional design choices without limiting possible responses. Given these requirements, a qualitative design is warranted.

The participants of this study all work within the bounded system of Sullivan University's PA program. The results from this study are not intended to be widely generalizable. When I was planning this study, there were unknown contextual factors. To provide a detailed description of the learning design competencies of faculty participants within a bounded system. Given these conditions, I used a case study methodology to answer my research questions (Creswell & Guetterman, 2019). More specifically, I will use an instrumental case study. Even though this study is not meant to be generalizable, there have been calls for research into faculty members' learning design practices working in various disciplinary backgrounds (Bennett et al., 2017). I describe this study as an instrumental case study in the hopes that the findings may provide insights into the more significant questions of how faculty members across different disciplines design their courses (Creswell & Guetterman, 2019). This case study will consist of semi-structured interviews and a think-aloud protocol to investigate the design competencies of the participants. Ideally, this will help identify strengths to build on and areas of concern to address.

Given that design is a creative pursuit, the participants' approach was hard to predict and capture. To help structure this study, I investigated participants' design competencies at the four levels of course design defined by Stark (2000). These levels include routine maintenance, routine review, major revisions, and planning a new course. I expected a wide range of responses since I was investigating a creative pursuit carried out by participants who were not uniformly trained. I chose a broad conceptual framework to ensure all responses could be categorized. I used the ADDIE framework outlined above to guide and shape my investigation into each level of course design.



## **Role of the Researcher**

As with any research, it is important to consider the researcher's role within the context of the study. I have worked in education for almost twenty years. For most of my career, I was a technology teacher in an elementary school setting and supported other teachers' use of educational technology. During those years, I developed a deep and lasting respect for anyone willing to teach others. Teachers give their time and energy to improve the lives of others. The teachers I have worked with intertwine their personal identity with their profession. I view teaching as deeply personal and emotionally challenging. When a student struggles, it is easy for teachers to view it as a personal failure. For these reasons, I find it uncomfortable to criticize an educator's approach to designing learning experiences. I much prefer offering immediate support or suggestions.

This background is pertinent to this study because outside of research projects, I hesitate to point out a fellow educator's areas of need. I have worked with the participants in this study for years. I deeply respect the participants in this study and do not want any of this research to be perceived as disparaging of their work. Throughout this study, I remained cognizant of my bias to portray the participants' teaching practice, specifically their course design competencies, favorably. I focused on answering the research questions in an honest and forthright fashion. If I report any findings that are considered negative, I will collaborate with the participants later to address these concerns.

I am also personally invested in the success of Sullivan's PA program. One of my motivations for conducting this study is to help ensure the program remains successful. I would like to see the program remain successful for professional and personal reasons. Professionally, I would like the program to be successful to maintain employment and to publish articles highlighting our successful initiatives. I also want the program to succeed on a personal level. I am friendly with the participants in this study and want to see them succeed. Also, Sullivan's PA alumni and experiential students serve in the local community. A Sullivan's PA alumnus once treated my wife during one of her medical appointments. Given that alumni from the program are treating my family members, I want to ensure the program has done

everything possible to prepare students for success. In short, I want Sullivan’s PA program to be successful.

Even with this personal background, I reported on areas of concern during this research. I want to identify areas that can be addressed to support my colleagues’ learning design practice and help the program succeed. The best way to do this is to provide an accurate report of the PA faculty members’ learning design competencies. As with all qualitative research, my previous experiences and motivations will impact this study. However, I will follow best practices and provide accurate data.

**Participants**

This study explores the learning design competencies of faculty members at Sullivan University. Therefore, I used homogeneous sampling to recruit faculty members who all worked for Sullivan’s PA program (Creswell & Guetterman, 2019). I recruited faculty members who would likely be tasked with designing or redesigning a course. ARC-PA requires faculty members who are classified as principal faculty members to contribute to the design of the curriculum of the program (ARC-PA, 2023). Principal faculty members are defined as “working at least 50% FTE with primary academic responsibility” (ARC-PA, 2023, p. 24). Including the program director, ten of the fourteen faculty members at Sullivan University’s PA program meet these criteria. I sent a recruitment email to all ten principal faculty members, and eight faculty members agreed to participate in this study. Table 2 provides an overview of the principal faculty members who participated in this study. To keep the participant’s identity confidential, I have used pseudonyms to identify the participants in this study.

**Table 2**

*Participants in this Study*

Alias	Education degrees / Trainings Attended	Years of Teaching in the Program
Taylor	<ul style="list-style-type: none"> <li>• Doctorate in PA Education</li> <li>• PAEA’s Faculty 101 Workshop</li> <li>• PAEA’ Program Director Workshop</li> <li>• PAEA’s Education Forum</li> </ul>	7 years

Patsy	<ul style="list-style-type: none"> <li>• Doctorate in PA Education</li> <li>• PAEA's New Faculty Jump Start</li> <li>• PAEA's Faculty 101 Workshop</li> </ul>	10 years
Dolly	<ul style="list-style-type: none"> <li>• PAEA's Faculty 101 Workshop</li> </ul>	3 years
Faith	<ul style="list-style-type: none"> <li>• PAEA's Faculty 101 Workshop</li> <li>• PAEA's New Faculty Jump Start</li> <li>• Clinical Faculty Training</li> <li>• Remediation Training Session</li> </ul>	8 years
Crystal	<ul style="list-style-type: none"> <li>• PAEA's Faculty 101 Workshop</li> </ul>	2 years
Tammy	<ul style="list-style-type: none"> <li>• PAEA's New Faculty Jump Start</li> </ul>	3 years
Loretta	<ul style="list-style-type: none"> <li>• PAEA Clinical Coordinator 101</li> <li>• PAEA Clinical Coordinator 201</li> </ul>	6 years
Carrie	<ul style="list-style-type: none"> <li>• PAEA's New Faculty Jump Start</li> </ul>	10 years

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### Data Collection Procedures

I began recruiting participants for this study by sending an initial recruitment email and the Study Information Sheet to the principal PA faculty members at Sullivan University (see Appendices A and B). I scheduled one hour with every faculty member who agreed to participate. I conducted a semi-structured interview and a think-aloud protocol during this hour. Between these two instruments, every phase of course design, as defined by Stark (2000), was investigated. Table 3 highlights which instrument targets which level of course design.

**Table 3**

*Instruments Used to Investigate Four Levels of Course Design*

Level of course design being investigated (Stark, 2000)	Instrument	Example questions or scenarios
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Routine maintenance	Semi-structured interviews	See Appendix C
Routine review	Semi-structure interviews	See Appendix C
Major revisions	Think-aloud protocol (Scenario 1)	See Appendix D
Planning a new course	Think-aloud protocol (Scenario 2)	See Appendix D

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### ***Semi-Structured Interviews***

I collected data using semi-structured interviews to learn more about how the participants approach the routine maintenance and routine review of their courses. Semi-structured interviews allowed participants to explain their design process without being limited by the researcher's perspective (Creswell & Guetterman, 2019). Semi-structured interviews have been used by other researchers to capture participants' experience with learning design (Bennett et al, 2017; Ertmer et al., 2008; Baldwin, et al, 2018). To examine the importance of contextual factors in the design process, the semi-structured interview will include questions focused on the participants' work environment. The flexible semi-structured interviews helped account for the open-ended nature of course design and allowed me to explore unique contextual factors adequately.

I am also in an opportune position to conduct semi-structured interviews with the participants. I have worked with many of the participants for several years and have enjoyed a positive working relationship with them. This helped the participants feel comfortable with sharing their opinions and freely sharing their thoughts. This makes them ideal participants for semi-structured interviews (Creswell & Guetterman, 2019).

### ***A Think-Aloud Protocol***

I chose to include a think-aloud protocol to capture the participants' thought processes when they significantly redesign a course and when they design an entirely new course. A think-aloud protocol is a theoretically sound instrument that captures a participant's thinking while carrying out a task (Charters,

2003). A think-aloud protocol enabled me to capture the steps the participants followed in their design process. Emphasizing certain design steps or omitting expected steps highlighted which design competencies are valued by the participants. Think-aloud protocols have been used previously to capture educators' learning design competencies (Ertmer et al., 2008).

The think-aloud protocol began with an exercise borrowed from previous research (Ertmer et al., 2008). There was a brief warmup exercise to allow participants to practice the think-aloud process. Participants were asked to think through how they would estimate how many windows are in their house (Ertmer et al., 2008). After this warm up, I gave the participant feedback on their ability to keep talking as they worked through their process. The most common feedback was to encourage participants to continue to say anything that came to mind. Next, the participants worked through two design scenarios. The first scenario asked participants to make substantial modifications to an existing course. The second scenario centered around developing a brand-new course. For each scenario, participants were given a one-page prompt (see Appendix D) and asked to discuss the steps they would follow during their design. Participants were provided with poster-size sticky notes in case they chose to create any visual representations of their ideas or processes. The goal of the think-aloud protocol was to capture faculty members' approach to redesigning and designing a course.

## **Analysis of Data**

### ***Overall Plan for Analyzing the Data***

I utilized several references to develop my approach to analyzing the data. Overall, my analysis is a slightly modified version of thematic analysis. I describe my approach as a thematic analysis because the goal was “to provide a rich thematic description of [my] entire data set, so that the reader gets a sense of the predominant or important themes” (Braun & Clark, 2006, p. 83). Braun and Clark (2006) encourage researchers using thematic analysis to answer a few important questions. I will answer these key questions here and provide more detail as I run through the narrative of how I analyzed the data. The first question to address is to define the

type of thematic analysis used. Inductive and deductive reasoning were used at different points during this analysis, so this question is difficult to answer. I did use the ADDIE design model to help organize and make sense of my codes. Braun and Clarke (2006) describe fitting existing codes into a “coding frame” as a theoretical thematic analysis (p. 83). The next question to answer is to specify if the coding procedure focused on the semantic or latent level of understanding. I focused my interpretation of the data at the semantic level instead of the latent level. I did not read into or make assumptions about what the participants said. While I did not make assumptions about the participants’ statements, I did find patterns and implications across the whole data set, which I will share in Chapter Four. The final question Braun and Clark (2006) encourage researchers to address is to clarify the epistemology the analysis is based on. This analysis is based on a realist epistemology, as I assumed a direct connection between the participants’ language and their meaning (Braun and Clark, 2006).

I did make a slight alteration to the thematic analysis process defined by Braun and Clarke (2006). I chose to conclude my analysis with assertions as opposed to general themes. Braun and Clarke describe a theme as “patterns (themes) within data. It minimally organizes and describes your data set in (rich) detail.” (p. 79). Saldaña (2021) defines themes as “researcher interpretations and constructions about the ideas inherent in patterns of action” (pp. 368-369). While minimally organized data or interpretations of patterns can be helpful to other researchers as prompts for future research or broader discussions, this was not the intention of my study. The goals of this study were to provide a rich description of the design competencies of the participants and to use that information to support the participants’ learning design practice. To accomplish this goal, I chose to report my findings as clearly as possible in the form of assertions.

Saldaña defines an assertion as the “construction of credible and trustworthy observational summary statements based on confirming and disconfirming evidence in the qualitative data corpus” (p. 371). Another way to distinguish between themes and assertions is by positioning the terms into a sequence. Saldaña (2021) describes a qualitative coding analysis sequence as follows: codes lead to categories, categories lead to themes, and themes lead to assertions. My goal was to generate assertions that were understandable and useful to busy professionals. After reading Erikson (1985), I began to see the themes generated from my analysis as “key linkages” within the data that could be used to develop assertions (p. 102). My analysis concludes with seven assertions regarding the design competencies of the PA faculty members at Sullivan University. I have provided examples of how my coding progressed from codes to categories to themes to assertions in Table 4. This table will demonstrate my process for moving from codes to assertions.

**Table 4**

*Example Analysis: How I Moved From Codes to Assertions*

Codes	Categories	Themes	Assertions
<ul style="list-style-type: none"> <li>• National Orgs as Support</li> <li>• National Orgs define breadth</li> <li>• Busy – Accelerated Program</li> </ul>	<ul style="list-style-type: none"> <li>• Analyze</li> <li>• Design</li> <li>• Develop</li> <li>• Evaluate</li> <li>• Contextual Factors</li> </ul>	<ul style="list-style-type: none"> <li>• These codes were so prevalent I elevated the concept to an assertion.</li> </ul>	<p>PA faculty members at Sullivan University are busy professionals who benefit from supports provided by national PA education organizations during every phase of course design.</p>
<ul style="list-style-type: none"> <li>• Comradery – Positive Interactions</li> <li>• National Orgs as Support</li> <li>• Analyzing Resources</li> </ul>	<ul style="list-style-type: none"> <li>• Analyze</li> </ul>	<ul style="list-style-type: none"> <li>• The faculty are resourceful problem solvers.</li> <li>• The faculty rely on each other for support.</li> <li>• National orgs provide support.</li> </ul>	<p>PA faculty members at Sullivan University are resourceful professionals who rely on resources provided by national PA education organizations and support from their peers.</p>

- |  |   |   |  |
|--|---|---|--|
| <ul style="list-style-type: none"> <li>• Approach to setting and assessing a goal</li> <li>• Breadth of coverage</li> <li>• End in mind</li> <li>• Extension of didactic year to clinical year</li> <li>• National orgs define breadth of topics</li> <li>• Create new materials</li> <li>• Criteria used to assess learning materials</li> <li>• Find existing resources</li> </ul> | <ul style="list-style-type: none"> <li>• Design</li> </ul>    | <ul style="list-style-type: none"> <li>• Having faculty teach in both years of the program supports instructional alignment.</li> <li>• The national orgs. define the topics to be taught.</li> <li>• National orgs provide support.</li> </ul>   | <p>PA faculty members at Sullivan University emphasize covering a breadth of topics defined and assessed by National PA education organizations. Faculty members teaching the same topics in both years of the program supports an emerging emphasis on instructional alignment.</p>             |
| <ul style="list-style-type: none"> <li>• Building in accommodations support</li> <li>• Logistics – Schedules and Bookings</li> <li>• Working with guest lecturers</li> <li>• Busy – Accelerated Program</li> <li>• Expanded Cohort Size</li> <li>• Concern with fairness to students</li> </ul>  | <ul style="list-style-type: none"> <li>• Develop</li> </ul>   | <ul style="list-style-type: none"> <li>• Faculty members are busy.</li> <li>• The faculty are resourceful problem solvers.</li> <li>• Faculty still prefer creating their own slide decks.</li> <li>• The course content consistently changes.</li> <li>• Faculty members are willing to create or find materials.</li> </ul> | <p>PA faculty members at Sullivan University create and modify learning materials to meet the ever-changing requirements of their courses. Instructional design support personnel should be aware the faculty members still prefer making their own slide decks.</p>                             |
| <ul style="list-style-type: none"> <li>• Building in accommodations support</li> <li>• Logistics – Schedules and Bookings</li> <li>• Working with guest lecturers</li> <li>• Busy – Accelerated Program</li> <li>• Expanded Cohort Size</li> <li>• Concern with fairness to students</li> </ul>  | <ul style="list-style-type: none"> <li>• Implement</li> </ul> | <ul style="list-style-type: none"> <li>• Faculty members are busy.</li> <li>• Faculty are supporting their own guest lecturers.</li> <li>• There are several tasks involved in implementing a PA course.</li> </ul>   | <p>PA faculty members at Sullivan University support struggling students, schedule outside professionals to support learning activities, and carryout other time intensive tasks during the implementation of a course. Any professional developments must account for their busy schedules.</p> |



<ul style="list-style-type: none"> <li>• Documenting evaluation process</li> <li>• Evaluation leading to change</li> <li>• Student survey data</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate</li> </ul>	<ul style="list-style-type: none"> <li>• The evaluation process is not being documented</li> <li>• The course evaluation process is valued.</li> <li>• There may be an overreliance on student survey data.</li> </ul>	<p>PA Faculty members at Sullivan University value the course evaluation process and consistently evaluate their courses. The program may need to make the evaluation and documentation process more uniform.</p>
<ul style="list-style-type: none"> <li>• Needs</li> </ul>	<ul style="list-style-type: none"> <li>• Needs</li> </ul>	<ul style="list-style-type: none"> <li>• The faculty want to incorporate active learning strategies.</li> <li>• Faculty members enjoy learning from other faculty members.</li> <li>• Faculty members are busy.</li> <li>• Faculty want to make changes, but do not know where to start.</li> </ul>	<p>PA Faculty members at Sullivan University expressed interest in attending trainings focused on principles of course design, strategies for incorporating active learning strategies into the classroom, and sessions that allow faculty to learn from other faculty members.</p>

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***A Brief Narrative on the Process of Coding the Data***

I relied on the transcription service TranscribeMe! to transcribe the audio recordings of the interviews and think-aloud protocols (TranscribeMe!). Initially, I opted to utilize their AI-powered transcription service, but was displeased with the results, so I opted for a higher tier of the transcription service. After the second round of transcriptions, I read all of the transcripts to confirm they were accurate and to develop early impressions of the data. When I was confident in the accuracy of the transcripts, I moved on to analyzing the data.

The analysis began with a preliminary exploratory analysis. I reread the transcripts several more times to familiarize myself with the text (Creswell & Guetterman, 2019; Braun & Clark, 2006). I developed a general sense of the data and began to develop a few notes or memos on my interpretation of

the data (Creswell & Guetterman, 2019). Overall, this was an iterative process in which I continued to refine codes based on emerging data from across all eight interviews and think-aloud protocols.

As I read through these pages several times, I realized I needed a quick reference guide to find data points across the participants' data sets. Therefore, I created a summary document for each participant (see Appendix E). These summaries included the question I posed to a participant, followed by a few bullet points to capture the highlights of her answer. These summary documents were used as support for the researcher and were not coded. The verbatim transcripts are the documents I coded and used as evidence throughout this study. As an aside, these summary documents also proved helpful during the member check-in interviews.

During this round of open coding I was open to any possibility and let the data drive the coding process (Braun & Clark, 2006; Merriam & Tisdell, 2016). I coded all the transcripts using these initial codes electronically with NVivo (Version 14). The preliminary round of open coding resulted in 94 codes. Given this large number of codes, I chose to use categories to help make sense of my initial coding and to help me think through how to consolidate my codes (Saldaña, 2021). I used the competencies defined by the ADDIE model, contextual factors, and participant needs as categories. These categories allowed me to collapse, connect, and reduce my 96 initial codes down to 42 codes. I will provide a brief example of how I consolidated codes. I organized codes relating to iterative design under the evaluation theme since Branch (2009) puts evidence of iterative practice in the evaluation competency. This helped me begin to see which codes could be combined. Table 5 provides a summary and example of the categories used in this study. Table 6 highlights the combined codes used during my second round of coding.

**Table 5**

*A Description of Each Category Used to Organize the Codes Generated from Open Coding*

Category	Description	Sample Evidence Under the Category
Analyze	Pertaining to the analysis competency of course design. Specifically, a participant's approach to analyzing incoming learners and auditing	"For patient history and physical exam, specifically, I like to know their background, where they've been. I came into the program with a lot of patient

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	available resources.	history or patient contact hours” (Tammy, interview, p. 4)
Design	Pertaining to the design competency of course design. Specifically, a participant’s approach to setting and assessing course goals, instructional alignment, valued instructional practices.	“I would kind of look at those lectures and then also look at the PAEA general surgery, EOR exam topics and kind of, I guess, compare and contrast to make sure we're covering all of those topics within the course.” (Dolly, interview, p. 1)
Develop	Pertaining to the develop competency of course design. Specifically, a participant’s approach to finding or creating learning materials and the criteria used to assess the quality of these items.	“Most definitely 100% will do my own PowerPoint. And those kinds of things, I don't use SlideShare or typically don't use another person's lecture. I've found over the years that sometimes it's more difficult to revise the lecture to make it what I'm wanting than it's just easier to create my own.” (Faith, interview, p. 5)
Implement	Pertaining to the implementation competency of course design. Specifically, a participant’s approach to preparing guest lecturers and how they plan for students who may struggle with course content.	“I think I'd start with the facilitators first. Okay. Yeah. Make sure I have the facilitator involvement because that could be the most time consuming thing, communicating back and forth with them just to make sure that they understand the expectations and the time commitment and everything” (Crystal, think-aloud, p. 9)
Evaluate	Pertaining to the evaluation competency of course design. Specifically, a participant’s approach to systems or models of course evaluation or how the evaluation process drives redesign.	“Well, we do evaluations at the end of every course. So we always get that regular feedback from the students.” (Loretta, interview, p. 2)
Context	Pertaining to the environment in which the design work is being carried out. Specifically, characteristics of Sullivan’s PA program that would likely impact design competencies.	“And so there are things that you want to do, but there's just not enough time, especially with being an accelerated program.” (Patsy, interview, p. 4)
Needs	Pertaining to support or training that Sullivan university could provide to help enhance the learning design competencies of Sullivan’s PA faculty.	“So there are things that I think are helpful. I mean, I guess just more of that in areas where someone who knows more about education than I do would be able to say, "Oh, we don't have this resource. You know I don't know what I don't know." (Carrie, interview, p. 5)

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**Table 6***Codes Used After Consolidating the Open Codes*

Name	Sources	References
Analyze*	8	147
Analyzing learners	7	30
Auditing available resources	8	41
Contextual Factors*	8	120
Busy - Accelerated Program	6	12
Comradery - Positive interactions	3	4
Course Credit Hours	2	2
Desire to treat students 'fairly'	6	9
Director as support	3	6
Expanded Cohort Size	3	3
National Org as Support	8	30
OACA as support	4	5
Peer to peer support	5	11
Program to program support	4	6
Real life vs book knowledge	2	2
Sequence of courses	2	2
Design*	8	239
Approach to setting and assessing a goal	6	15
Appropriate Sequence of Topics	4	6
Breadth of Coverage	1	2
End in mind	3	6
Extension of didactic year to clinical year	2	4
Instructional Alignment	4	6
Manage Cognitive Load	1	1
Managing Granularity	3	4
National Orgs define breadth	5	11
Stepwise Approach	5	7
Valued instructional practices and products	5	11
Develop*	8	70
Create new materials	4	9
Criteria used to assess learning materials	3	5
Find existing materials	5	14
Evaluate*	8	169
Documenting Eval Process	6	14
Evaluation leading to change	8	31
Prefer Statistical Data	1	2
Student survey data	8	20
Implement*	8	79
Building in accommodations supports	5	10
Logistics - Schedules and Bookings	4	4
Working with guest lecturers	7	19
Needs*	8	22

Using these categories helped organize my codes. This helped me begin to make connections and to start developing themes. To think through moving from codes sorted into categories to themes, I

created a table. Each row of the table is a question or scenario posed to a participant during the interview or think-aloud protocol. Each column is one of the seven categories I defined above. I included a brief description of the participant’s response within the appropriate cell. This table was a visualization to help me think through the process. Figure 1 is a screenshot that captures a portion of this table. I continued to code the transcripts using NVivo (Version 14). Only the official transcripts were coded.

**Figure 1**

*Screenshot of the Category Table Used to Generate Themes*

	A	B	C	D	E
1	Participant	Question	Analyze •Approach to analyzing learners •Auditing available resources	Design •Approach to setting and assessing a goal •Aligning objectives, instruction, and assessment (instructional alignment) •What instructional practices/products are most valued by the participants	Develop •Are participants finding or creating their own materials •What criteria are participants using to select or create materials
2	Faith	In Broad terms, how do you approach designing a course?		•Start with the end in mind, why am I doing this •Support - National org - Arc-PA and AAPA to set student objectives	
3	Faith	How did you go about coming up with the learning materials for it (the course)?	•I will check to see what lectures they have received in their didactic year •I looked at AAPA, NCCPA, PAEA to see if they had existing materials.	• Students have a better understanding of schema of concepts (like coding) after they have been on rotations or in the real world. I will bring in these real world connections. • For the billing lesson I wanted worksheets that would simulate coding for PAs in the real world. I would then be able to ‘audit’ them like we do in practice. One competency focused on social measures and outcomes, so I wanted to create volunteer opportunities for our students similar to the PharmD program. (very hands on)	• I focus on meeting all of the competencies. I look for existing resources. •Look to modify resources, id a textbook, ensure practice opportunities •Personalized learning - develop a certification assignment where students presented on the state they plan on being certified in

***Moving From Themes to Assertions***

After creating codes, organizing the codes by category, consolidating codes, and developing themes, I was ready to develop assertions. Erikson (1985) suggests that to begin to develop an assertion based on qualitative data, it is necessary to find “key linkages” across the data (p. 102). Erickson (1985) suggests, “The task of pattern analysis is to discover and test those linkages that make the largest possible number of connections to items of data in the corpus” (p. 104). I used this criterion when developing the assertions for this study. One of the goals of Chapter Four is to provide enough evidence to demonstrate the plausibility of these assertions by

providing a general description that will summarize key pieces of evidence across participants and instruments (Erikson, 1985).

Creating my assertions was an iterative process. Erikson (1985) encourages researchers to search for disconfirming evidence or discrepant cases to test their assertions continually. There were several assertions that I needed to modify after a rigorous testing process. For example, I had to modify the assertion about the analysis design competency. Initially, my assertion focused on participants working together to design a course synchronously. While this does occur, after a review of the data, it was more appropriate to broaden the assertion to include the fact participants benefit from artifacts created by their peers, specifically course syllabi. I also had to modify an assertion to more accurately represent the importance of an issue. Initially, one of my assertions mentioned the PA faculty relies on resources from National PA Education Organizations. After reviewing the evidence, this contextual factor needed to be its own assertion, given its importance. I will discuss evidence in Chapter Four that highlights the important role national organizations play in the participants' course design process.

### **Validating Findings**

I have taken measures to validate the findings of this study. After the interviews and think-aloud protocols were conducted and the data analyzed, I conducted member-checking interviews with the participants (Creswell & Guetterman, 2019). The summaries of each participant's responses to the interview and think-aloud protocols were immensely helpful during these member-checking interviews (Appendix E). The participants could follow along with the summary outline as I reviewed my findings. These follow-up interviews also allowed me to clarify any areas of confusion.

I was also able to validate my findings through triangulation. This study includes eight participants and two research instruments. The research questions of this study focused on Sullivan's PA faculty members as a group. I was able to triangulate results across participants. The assertions of this

study are all supported by evidence from multiple participants within the study. I will detail this supporting evidence in Chapter Four. This study included an interview protocol and a think-aloud protocol. I was able to triangulate data between interviews, which provided more structure for the participants, and data collected using the think-aloud protocol, which was open-ended. Except for my assertion regarding the PA faculty members' training needs, every assertion in this study is based on data collected from the semi-structured interviews and the think-aloud protocol. The think-aloud protocol was not intended to capture faculty training needs, so I remain confident in my assertion regarding the training needs of faculty members.

This research was also supported by a dissertation committee, specifically my dissertation chair Dr. Anne Leftwich, who served as a sounding board and an outside expert. Working with an outside expert was beneficial for several reasons. In particular, it was helpful to have an outside expert during the development of the assertions of this study. Erikson (1985) encourages qualitative researchers to test and retest their assertions against the data they have collected. Working through this testing process with an experienced researcher was helpful. Having an outside auditor helped me remember to define assertions about the participants' design competencies that incorporated as many data points as possible. This strategy again aligns with Erikson's (1985) suggestion that validity is improved when assertions account for patterns across multiple events.

## Chapter 4 Results and Discussions

In the following chapter, I will report how PA faculty members at Sullivan University use their course design competencies to design and redesign courses. Designing a course is a complex process with lots of areas worthy of study. As a reminder, I have listed the research questions for this study below.

1. How are Physician Assistant (PA) faculty members at Sullivan University designing their courses?
  - a. How is the work environment or context influencing Physician Assistant (PA) faculty members as they design their courses?
2. What support do the PA faculty members at Sullivan University need to help their course design practices?

The participants all had unique approaches to designing a course. To answer the research questions at the group level, I will report on commonalities I found between participants' approaches to analysis, design, development, implementation, and evaluation. The data presented has been collected from interviews and think-aloud protocols conducted with eight participants. For a summary of an individual's responses to the interview questions and think-aloud protocols, I have included a summary of these responses by participant in Appendix E. I have presented my findings at the group level as assertions, summarized in Table 7.

**Table 7**

*Research Questions Connected to Assertions of this Study*

Research Question	Assertion
1. How are Physician Assistant (PA) faculty members at Sullivan University designing their courses? Analysis	PA faculty members at Sullivan University are resourceful professionals who rely on resources provided by national PA education organizations and support from their peers.
Design	PA faculty members at Sullivan University emphasize covering a breadth of topics defined and assessed by National PA education



	organizations. Faculty members teaching the same topics in both years of the program supports an emerging emphasis on instructional alignment.
Develop	PA faculty members at Sullivan University create and modify learning materials to meet the ever-changing requirements of their courses. Instructional design support personnel should be aware the faculty members still prefer making their own slide decks.
Implement	PA faculty members at Sullivan University support struggling students, schedule outside professionals to support learning activities, and carryout other time intensive tasks during the implementation of a course. Any professional developments must account for their busy schedules.
Evaluate	PA Faculty members at Sullivan University value the course evaluation process and consistently evaluate their courses. The program may need to make the evaluation and documentation process more uniform.
a. How is the work environment or context influencing Physician Assistant (PA) faculty members as they design their courses?	PA faculty members at Sullivan University are busy professionals and National PA Education Organizations have created a supportive context where novice learning designers can create effective courses.
2) What support do the PA faculty members at Sullivan University need to help their course design practices?	PA Faculty members at Sullivan University expressed interest in attending trainings focused on principles of course design, strategies for incorporating active learning strategies into the classroom, and sessions that allow faculty to learn from other faculty members.

### **The Impact of Context on the Participants' Course Design**

Assertion: PA faculty members at Sullivan University are busy professionals and National PA Education Organizations have created a supportive context where novice learning designers can create effective courses.

To fully understand the learning design competencies of the PA faculty members at Sullivan University, it is important to understand two contextual factors. First, the participants of this study are busy professionals. Second, acknowledging the support and guidance provided by PA National

organizations is necessary to understand the faculty's design learning practice. Throughout this chapter, there will be several references to support provided by national-level PA education organizations.

### ***PA Faculty Members at Sullivan University are Busy Professionals***

All participants in this study (n=8) reported maintaining busy schedules. Sullivan's PA program is year-round. During the member checking interviews, every participant confirmed they coordinate at least one course every quarter. To review the amount of work that goes into coordinating a course, please see the implementation section of this chapter. Also, every participant serves on at least one committee within the college. Most participants (n=7) dedicate one day a week to a practice site where they continue to practice as a PA. Taylor described how a busy schedule impacts faculty members' course design, "[I] think a lot of people get bogged down and hurry up and do their planning because they have to get it done" (interview, p. 2). The impact of a hectic schedule is also reflected in Tammy's response to my question about how long it would take her to design a course:

If it was my only thing that I needed to be working on, like I didn't have another course coming up. I wasn't chair of any committees or had any outside work that I needed to do. I would think, in order to put a good effort into it, I would say at least, and I didn't need to create any lectures. Sorry, there's a lot of must meet. So if I had no other workload expectations and I was not giving these lectures and I was not creating all of the exams at the beginning of the course. I would say that I feel confident that I could get that done within two to three weeks. (think-aloud, p. 7).

The faculty members working within Sullivan's PA program are busy professionals. Time is a luxury. Efforts to improve course design practices will need to accommodate their schedules. In chapter 5 of this study, I will list a few specific ideas to save the faculty members time to allow them to participate in professional development. In a broad sense, the program should be aware that an hour-long training session should be paired with an initiative or system that saves the participating faculty members an hour. Having worked with the participants in this study, I know them to be dedicated professionals willing to dedicate time to improving their teaching. However, this positive attitude should not be taken for granted. Part of my role will be to develop systems that can result in saving time for faculty members.

***PA Faculty Members Utilize Support from National PA Education Organizations***

The Physician Assistant faculty at Sullivan University rely heavily on national-level PA education organizations as they design their courses. Throughout the interviews and think-aloud protocols, participants provided several examples of utilizing these supports. For a quick summary of direct references to national-level organizations, please see Table 8.

**Table 8**

*Participant References to National PA Education Organizations Sorted by ADDIE Competency*

	Analysis	Design	Development	Implement	Evaluate
Taylor		NCCPA			ARC-PA
Faith		AAPA	PAEA	PAEA	ARC-PA
Loretta	PAEA	ARC-PA			
Carrie		ARC-PA			AAPA
Dolly		NCCPA; PAEA			
Patsy	PAEA	ARC-PA; NCCPA		NCCPA	PAEA
Tammy		AAPA; ARC-PA; NCCPA; PAEA			AAPA; PAEA
Crystal		NCCPA; PAEA			PAEA

*Note.* National Commission on Certification of Physician Assistants (NCCPA); Accreditation Review Commission on Education for the Physician Assistant (ARC-PA); American Academy of Physician Associates (AAPA); Physician Assistant Education Association (PAEA)

Of note, every participant (n=8) mentioned utilizing resources from at least one national-level organization to support their design competency as defined under the ADDIE model. Seven of the eight participants discussed using resources from national-level organizations to set their course objectives. This illustrates the pivotal role national organizations play in Sullivan University’s PA program. It is difficult to separate the design competencies of the participants in this study from the support provided by national-level organizations. The national-level organizations set the breadth of topics students need to know and later provide multiple assessments to monitor students’ progress toward mastering these topics. The participants also utilize data from assessments created by national-level assessments to evaluate their courses. The participants also use resources provided by national organizations to monitor changes in national-level standards for practicing PAs. National organizations help define learning outcomes,

provide data to assess the effectiveness of courses, and clarify the expectations of a practicing PA. I compare this level of support to a slalom skier being kept on the right path by following a predefined path and then utilizing a system of gates to ensure they remain on the path.

It may warrant a future study to fully understand how Sullivan's PA program has come to rely on these national-level supports. Patsy gave an introductory explanation of how these resources became so intermeshed with Sullivan's PA program. During our interview, I asked Patsy how she sets course-level outcomes. Early in her career, a member of the leadership team connected her to national-level support:

Instructional goals. I'll be honest, Ben. Those were handed down to me long ago. And when I very first came on, it was said, These are set. Don't change these. You could do anything else you want with your course, but don't change these. But knowing what I know now, those come from our accrediting body, so from ARC-PA. So we have to go in and make sure that we are teaching to what they say we have to teach (Patsy, interview, p. 3-4)

The program's leadership team has valued support materials from the national-level organization since its inception. This appreciation of the resources has been passed down through the generations of leadership. During her career, Patsy quickly moved into a leadership role and has continued to rely on resources developed by ARC-PA. Leadership valuing national-level resources is noteworthy because this may have led the program to explore other resources provided by national-level organizations. The participants in this found resources that help them with every design competency as defined by the ADDIE design model. I will highlight faculty members' use of these resources throughout this chapter.

### **Overview of the Course Design Competencies of the Participants**

Faculty members at Sullivan University's PA Program primarily redesign courses. I found no evidence that a PA faculty member would be asked to design a new course independently. While the faculty members' design process is focused on altering existing content, it still requires creativity. Trying to capture a creative process is difficult. To answer this research question, I have broken the action of 'designing a course' into the five competencies defined by the ADDIE design model.

## *Analysis*

PA faculty members at Sullivan University are resourceful professionals who rely on resources provided by national PA education organizations and support from their peers.

Branch (2009) identifies assessing available human resources as a major component of the analysis phase. Sullivan's PA faculty members are resourceful individuals. PA faculty members at Sullivan University seek out the expertise of colleagues when designing courses. They also seek out resources provided by national organizations.

Another component of the analysis phase is analyzing the needs of incoming learners. Within Sullivan's PA program, there is an assumption that students are uniformly prepared for success. Given the rigorous admissions standards discussed previously, this assumption may be justifiable. In this section, I will highlight how the participants currently analyze their incoming learners.

**Analysis – Peer-to-Peer Support as a Resource.** Every participant (n = 8) described a time when they benefited from the expertise of a colleague. Before highlighting examples of peer-to-peer support, it is important to note a contextual factor of the program that makes this possible. Sullivan's PA program has established a friendly and collaborative work environment. This camaraderie is made possible by a friendly work environment where everyone feels respected. Patsy described the work environment as "family-oriented" and said she feels comfortable dropping by a colleague's office with course design questions (Patsy, interview, p. 3). The friendly and open environment has allowed course design to be perceived as a group activity in which other people and resources can be brought into the process as needed. This mindset has allowed the program to reap the benefits of having seasoned faculty members.

Taylor described how peer support has improved as key faculty members have become more experienced:

That's the great thing about our program is we have so many faculty who have actually stuck around and been around for a while that we can all help each other pretty well, so I would probably go to a colleague first. [Patsy] obviously, Director of Didactic Education, has a ton of

experience running didactic year and courses in didactic year, and [Carrie] as well has been around for whatever, and she's got a little bit of different background and perspective. (Taylor, interview, p. 3)

Support from peers comes through two main sources. The participants in this study benefited from conversations with their colleagues, and they also benefited from artifacts produced by their colleagues, specifically previous course syllabi. Below I will provide examples of how information passes through these two main sources.

Many participants described the benefits of having conversations with peers during their course design process. Dolly discussed how she benefits from the expertise of her peers during our interview: “Yeah, the most resources I feel like I use are my peers. Just asking questions, especially being newer to being a faculty member. Kind of what has helped in the past” (interview, p. 4). Loretta described a colleague’s support when she was taking over the coordination responsibilities of a course:

She was very eager to meet with me and kind of hand it off, and as I was eager to meet with her to get the information because I knew there was a lot of stuff that I needed to know. (Loretta, interview, p. 2)

Loretta described using the program director as a resource when she outlined her approach for redesigning a course during the think-aloud protocol:

So what I would do initially is well, have a discussion with the program director about exactly what areas need serious attention because I'm very kind of detailed and want to know, I just don't want to go in there and revamp the whole class because there probably are some things that are working well. So first, get some better direction. (Loretta, think-aloud, p. 6)

During our interview, Tammy discussed which resources she relies on if she struggles with a design decision:

So, I would probably go to my supervisor. So it would be the didactic coordinator if it was in didactic year. So that would be [Patsy]. If it was in clinical year, I would probably go to the clinical coordinator, which is [Faith]. (Tammy, interview, p. 4)

Tammy also described how she would rely on colleagues during think-aloud protocols:

So I would probably ask other people in the program who have also been asked to create a new course to see what resources they are currently using, whether we have some available to us that I could use as kind of like a starting point. (Tammy, think-aloud, p. 8)

The participants in this study also benefit from peers during the evaluation phase of the design cycle. For example, Carrie discussed how she reviews student course evaluations: “You know, I’ll talk to my colleagues too and see what they think” (Carrie, interview, p. 2). The participants in this study have identified their peers as useful resources for every phase of the course design process.

Faith provided an excellent summary of the participants’ stance on peer-to-peer support “And so teamwork always is an appropriate way to address course development and looking at your internal resources” (Faith, interview, p. 2). While I will report on individual faculty members’ design competencies to fully address this study’s research questions, the participants’ learning design practice should be viewed as a communal activity.

In addition to conversations with peers, the participants also described how they benefit from artifacts created by peers. The most common resource mentioned by the participants was previous course syllabi. This finding is not groundbreaking. It makes sense to refer to previous syllabi when redesigning a course. However, this finding does remind the instructional design support staff charged with supporting the PA program that previous syllabi need to be easily accessible. Also, altering the syllabus template may be an effective way to drive future improvements since the syllabus will likely be referenced when redesigning a course. Below, I will highlight a few quotes that explain how PA faculty members are using previous course syllabi to help their redesign efforts.

Taylor views the syllabus as a helpful jumping-off point:

So the first thing I would do is look at an existing syllabus or the one in which the course last ran, just to see what are the main elements of the course as far as what we have previously set in the past for instructional objectives, assignments, how we assess in the course otherwise or how we

have in the past, just to get familiar with what the flow of the course was in the past and what things I really need to emphasize efforts on when designing that course. (Taylor, interview, p. 1)

Dolly described the benefits of previous syllabi during the think-aloud protocol focused on re-designing a course:

I guess the first thing I would probably do is go to the Blackboard master course and then also to pull the syllabus for the course. And then kind of just see what the makeup of the course was by looking at what the objectives were and then also how they were assessed on those objectives. Meaning, I guess, what all were the topics? And then how many exams did they have? How many quizzes did they have? (Dolly, think-aloud, p. 7)

Loretta mentioned using previous syllabi created by her colleagues to help reevaluate the course's sequence during the think-aloud protocol focused on redesigning a course (Loretta, think-aloud). Crystal also stated that she relies on previous syllabi created by her colleagues: "Also, I would obviously look at the syllabus" (think-aloud, p. 9). Faith mentioned reviewing previous syllabi to understand the sequence and key topics of the course (think-aloud). Tammy also stated she would rely on previous course syllabi to help with the redesign process (think-aloud, p. 7). Utilizing previous syllabi was mentioned enough that it justifies efforts to store and organize all course syllabi.

**Analysis - Support from National Organizations.** A key aspect of the analysis phase is to locate possible resources to help with the design process (Branch, 2009). Several PA national organizations have collected and curated resources to help PA faculty members design or redesign courses. If a participant in this study needed additional resources to help with a course design decision, they would likely turn to a national organization for support.

PAEA provides a discussion board where PA programs across the country can share ideas. Loretta described how she benefits from this resource. She stated, "I get a broad idea of, okay, these are what other programs are doing. And then we're going to make our own unique one for our program" (interview, p. 3). Patsy also mentioned utilizing PAEA's discussion board during our interview:



I'm first going to go to colleagues that have more experience than I do or have had experience with that course and say, "What has gone well, what has not gone well," or, "I'm considering this. Have you ever done something like this before? Did it work?" The other place that I might go to is our PAEA, our education association. They basically have a great big forum where you can say, "Hey, I'm teaching anatomy. I'm stuck on what to do with the thorax. What have you done?" But really, that's just more colleague feedback. (Patsy, interview, p. 3)

This discussion board has helped normalize contacting other PA programs for Patsy. She expressed being comfortable with reaching out directly to colleagues at other programs during the think-aloud protocols:

So I'm probably also going to talk to other program directors of DMSc's or PhD, whatever. I'm going to look at their sites, but I'm also going to talk to them is what I'm trying to say. I'm going to pull from our master's level evidence based medicine course and talk to that course coordinator to see what they thought the difference could and should be between a master's level and a doctoral level course. (Patsy, think-aloud, p. 10)

**Analysis - Analyzing Incoming Learners.** Analyzing the potential needs of incoming learners is not currently a priority for Sullivan's PA program. Currently, remediation efforts are retroactive. Most participants (n=7) do not consider possible support for struggling students during the design of their courses. Again, this may be justified given the caliber of students admitted into the program.

When asked if she designs built-in support for students in her course, Patsy provided an excellent description of one of the barriers participants face when trying to plan for the needs of potentially struggling students:

I would love to say yes. When I'm designing the course, no. If the student struggles in the interim of the course, will I meet with that student and support that student? Yes. But unfortunately, it does not play a role in the course design itself. And I think honestly, that's due to the accelerated nature of the program. (Patsy, interview, p. 6)

Rather than developing a support system before a course runs, Patsy manages the needs of struggling students while implementing her courses.

Carrie provided an exception to the approach of handling the needs of struggling students retroactively. She will incorporate low-stakes assessments into the design of her course. I consider this practice to be an effort to support students who may struggle with the content in her course. She also meets with struggling students during the implementation of her courses. Carrie described how she uses the low-stakes quizzes and individual student meetings as follows:

I feel like the quizzes are helpful for those students, and that's kind of a safe way for them to test themselves. And if they are totally lost on those, they probably ought to come see me. In our program, after the first assessment, anybody who fails is remediated for every single exam. So we have some programmatic things in place to sort of catch people before they get too far down the road and they're struggling. I will meet with them, set them up with a tutor. (interview, p. 5)

Even with low-stakes formative quizzes in place, Carrie feels pressure to respond to student questions promptly: “And I always try to answer those promptly because I know that they have a lot going on” (interview, p. 5).

### ***Design***

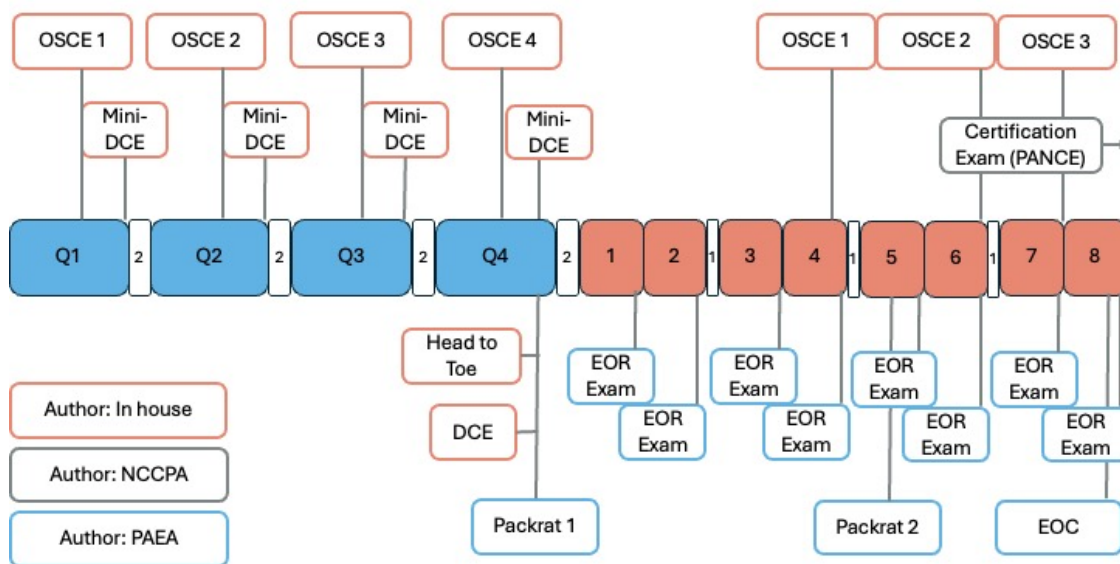
Assertion: PA faculty members at Sullivan University emphasize covering a breadth of topics defined and assessed by National PA education organizations. Faculty members teaching the same topics in both years of the program supports an emerging emphasis on instructional alignment.

Branch (2009) states, “The purpose of the Design phase is to verify the desired performance and appropriate testing methods” (p. 59). As discussed above, Sullivan University’s PA program relies heavily on the support provided by national organizations. This continues through the design phase. The faculty members at Sullivan University leverage standards and blueprints of assessments provided by National PA education organizations to clearly define students’ expected performance. They also use assessments created by national organizations to assess the expected performance.

**Design – Setting and Assessing Learning Outcomes.** National organizations have created several assessments. These assessments include eight End-of-Rotation Assessments focused on specific areas of practice, a summative curricular assessment known as the PACKRAT, and an End of Curriculum Assessment. The PA faculty has also created thirteen programmatic assessments to supplement these assessments. Ultimately, students will take twenty-three programmatic level assessments that cover objectives defined by National PA education organizations during their two years in the program. The national organizations provide blueprints for these assessments. Most participants in this study (n=7) referenced using the blueprints or topic lists of these exams to set course-level objectives. There is a focus on adequately covering a breadth of topics to prepare students for these exams. Again, the number and frequency of programmatic assessments are analogous to gates keeping a slalom skier on the correct path. For an overview of these assessments, please see Figure 2. Note the blue rectangles represent the 11-week quarters of the first year, and the orange boxes represent the 6-week clinical rotations of the second year.

**Figure 2**

*Timeline of Programmatic Assessments in Sullivan University’s PA Program*



*Note.* An Objective Structured Clinical Examination or OSCE provides students with a clinical scenario. Students are assessed by a faculty member or standardized patient on their ability to handle the scenario. The Didactic Compressive Exam or DCE exam covers materials from all the courses in the didactic year.

The mini-DCEs cover content from a specific quarter. The Head-to-Toe Exam is a performance assessment in which students perform a head-to-toe exam on a mock patient.

The program has also assigned faculty members to teach the same content in the first and second years of the program. This has helped participants maintain instructional alignment. The faculty needs to ensure instruction in the first year prepares students to be successful during their clinical rotations.

The program relies on national organizations for other resources besides assessments. I will cover how the participants utilize other national resources below. As a reminder, the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) defines the accreditation standards for a PA program, the American Academy of Physician Associates (AAPA) defines the competencies for new PA graduates, the Physician Assistant Education Association (PAEA) defines student task areas, and the National Commission on Certification of Physician Assistants (NCCPA) defines topics that will be assessed on the certification assessment or the PANCE assessment.

**Design Support –ARC-PA.** Loretta uses resources provided by ARC-PA to help define her course learning outcomes:

ARC-PA sets standards, and so they basically have-it's just a document which has the physician assistant student must be able to blah, blah, blah. And the program must instruct students in X, Y, Z. So that's kind of our template that we look to. (interview, p. 1)

Loretta went on to state, “the ARC-PA standards are kind of our blueprint for the curriculum design and instruction.” (interview, p. 1) Later in the interview, Loretta provided an example of using the standards set forth by ARC-PA to develop rubrics or, in other words, define an appropriate assessment method:

And again, it goes back to the ARC-PA standards, What do we have to cover? And what do we have to assess on, so making sure that that is what we're truly assessing the student on? And then, looking at it even more kind of under a microscope, that specific assessment, Okay, this specific assessment, I want to make sure that the students understand how to do a mental health examination on this assessment. (interview, p. 3)

Loretta also mentioned relying on ARC-PA standards if she was asked to develop a new course during the think-aloud protocol:

So this is where I would go back to first start out with our ARC-PA standards because there are standards in there that say or I believe that talk about - well, I don't want to misquote - if you design a new course or if you are creating a new course, I think there are some guidelines for that. So first revisiting the ARC-PA standards and make sure whatever I'm doing is still in line with that. (think-aloud protocol, p. 7)

Patsy also mentioned how she uses resources from ARC-PA to set her course learning outcomes: I mean, one of the-- it's good and bad things about ARC-PA is they're just painfully vague, and I think they do that so that you can be creative in your delivery, in your development, in your instruction, but also hold you to a standard to say, at bare minimum, this is what you have to do, but the way you do it is up to you. (interview, p. 4)

While Patsy describes the ARC-PA standards as vague she still views them as a useful resource to draft course learning outcomes.

Carrie also looks to ARC-PA to define her course learning outcomes. She described the process as “the accrediting body posts a blueprint with all of these different topics that have to be covered or addressed at some point of the curriculum” (interview, p. 2). While it is not surprising the leadership of the program is aware of the standards set forth by the accrediting body, it is interesting how many participants use resources from ARC-PA in their learning design process.

**Design Support - PAEA.** PAEA is another national organization faculty members rely on to help set course-level learning outcomes. Specifically, the End-of-Rotation Exam blueprints are useful to Sullivan's PA faculty members. Faculty members use these blueprints to connect classroom instruction in the first year to experiential learning in the second year of the program. This helps PA faculty members think through the ultimate goal of their courses. Using these EOR blueprints has encouraged Sullivan's PA faculty members to maintain instructional alignment. The courses they plan for first-year students need to be taught at an appropriate depth of knowledge to ensure success on these second-year exams.

Dolly refers to the End of Rotation (EOR) topic list released by PAEA to define the learning outcomes for her didactic year course. The EOR exams will be taken in the second year of the program. She described her thought process for choosing her course objectives as follows:

I guess just thinking how the student can continue being successful when they get to clinical year. Because a lot of clinical year is working on the basis of the knowledge that they get in didactic year, but then also they're getting taught clinical skills as well. So trying to parse out-- so yes, a student is in their clinical year, but sometimes they're still having to rely on book knowledge.

(Dolly, interview, p. 2)

PAEA's EOR topics list provides Dolly with an end goal as she plans her didactic courses. Relying on the EOR topic list she can identify the 'book knowledge' necessary for students to know before they are ready to practice clinical skills during their surgery rotation. Crystal also leveraged PAEA's topic lists to design the outcomes for her courses:

PAEA, which is Physician Assistant Education Association, they create this topic list because they don't tell us what's going to be on the EORs, the end of rotation exams. But they do make this fabulous list of the topics that they highly suggest that the students study. So I took that list, and then it itself is split into gynecology and obstetrics already. (interview, p. 1)

**Design Support – NCCPA.** Patsy uses resources from NCCPA’s blueprint for the PANCE assessment to define the learning outcomes of her courses:

Well, the first thing that needs to be done is you need to understand what your course will-- the content that will be covered. Working in PA education, I then go to our NCCPA blueprint and look at the topics that will be covered. (interview, p. 1)

Later in the interview, Patsy explained why covering the topics on the PANCE blueprint was so important to her:

Things that will be covered on the PANCE so that my students will be prepared to take that qualifying exam at the end of their career or end of their academic career. And I think just making sure you check all of those boxes. Plus, you need to make sure that things are covered that are common everyday types of things that you'll encounter working as a PA. So content, I think, is most important to begin with. (Patsy, interview, p. 1)

**Design Support – AAPA.** Faith was the only participant who mentioned utilizing resources from AAPA to help set course objectives. Faith primarily works with students in the second year of the program and is focused on preparing them for practice. She described how she relies on guidance from a AAPA:

What I did was I took those six, seven competencies and determined where there may be deficits in our curriculum. And tried to make sure that I was building upon those competencies for the new grad. So that's what I did is I took the competencies from the AAPA and those were basically going to be my objectives. The students were going to be able to examine and investigate certain different items that would build upon that competency (Faith, Interview, p. 1).

**Covering Content Defined by Multiple Organizations.** Above, I discussed a few examples of how participants rely on resources from one specific national organization. In practice, participants rely on resources from multiple organizations. For example, during the think-aloud protocol, Patsy described how she tries to design a course by merging the resources provided by two national organizations and previous syllabi:

I'm going to read the current syllabi for all courses. I'm going to compare that to the NCCPA blueprint and ARC-PA standards. Make sure I'm getting everything that needs to be in there. (think-aloud protocol, p. 8)

During the think-aloud protocol focused on redesigning a course, Dolly referenced using PAEA's topic to help establish an appropriate breadth of topics. She also mentioned relying on the PANCE, the certification exam created by NCCPA, as an appropriate measure to assess her objectives:

I would compare what the instructional objectives were to the PANCE women's health section just to make sure that all of those topics that are on how to get prepared for the PANCE are in the instructional objectives. And then I would also look at the PAEA EOR women's health topic list for what the students could get tested on in clinical year and just make sure all of those topics were covered as well. (Dolly, think-aloud, p. 7)

Tammy also relies on multiple national-level PA education organizations to define the topics in her courses. During the interview, Tammy mentioned using resources from four national organizations. While describing how she chooses which topics to cover in her courses: "So we rely on our accreditation standards, what competencies we need to meet, what task areas these students need to learn, and what content areas based off what the PANCE tells us" (interview, p. 1).

Crystal references multiple national organizations and her own experience as a practicing PA to define the topics that will be covered in her course:

So I created my instructional objectives first. That was like the first step that I did. And then once I created that list from the PAEA outline, I also took the PANCE blueprint, which had additional topics in it, but was also lacking some topics that I found on the PAEA topic list. So I basically



kind of made a Venn diagram and put all the topics that I could find on this list together. And then if I found I also looked through the instructional objectives from the previous Women's Health course, didactic course. And if I saw something on there that I thought was relevant that we should teach that wasn't on either of those other two resources, I would add that to the list too. (interview, p.1)

This Venn diagram approach of setting course learning outcomes may be useful to other PA faculty members and warrants further investigation. Other participants in this study mentioned wanting to include practical aspects of being a PA into their courses. The Venn diagram approach would allow a faculty member to benefit from multiple national-level resources while incorporating their own professional judgment.

**Design Support - Program Structure Benefits Learning Design.** Sullivan's PA program made a concerted effort to connect the learning experiences in the program's first and second years. One of the strategies they used to accomplish this goal is to have faculty members teach in both years of the program. Dolly's approach to deciding on course-level learning outcomes highlights the benefits of having faculty members teach in both years of the program. To decide the topics to present in her didactic year course, she considers what will set students up for a successful clinical experience:

So I think a lot of our core rotations that we have in clinical year, we also have a course in didactic year that kind of match up. So like we have pediatrics that will match up with their pediatric clinical rotation, women's health, women's health rotation, so on and so forth. (Dolly, interview, p. 2)

Crystal described the benefits of having one faculty member teach the same topic in both years of the program:

We all have a clinical site, we're all clinical course coordinators. So we all coordinate a clinical course. Yeah and then we all coordinate didactic courses. And a lot of times they correspond. So [Samantha] does psych for PA1s and Psych for the clinical students. And then I do Women's

Health for both. [Tammy] does peds for both. And then so on and so forth. [Taylor] right now temporarily is doing ER and ER. You know so it kind of matches up pretty well. (interview, p.2)

Crystal went on to explain why faculty members within the program use programmatic assessments that occur during the second year of the program to set course learning outcomes in their first-year courses:

So the purpose I think the purpose for that specific course is to get the students prepared for their general surgery rotation in clinical year. So I think a lot of our core rotations that we have in clinical year, we also have a course in didactic year that kind of match up. So like we have pediatrics that will match up with their pediatric clinical rotation, women's health, women's health rotation, so on and so forth. (interview, p. 2)

Connecting a didactic course with an experiential experience helps faculty members decide what essential material students need to be effective PAs. The connection between the years in the program is an area of strength that can be built upon. This connection helps faculty members see why teaching and assessing at the proper depth of knowledge matters. This can lead to meaningful conversations regarding instructional alignment.

### ***Develop***

Assertion: PA faculty members at Sullivan University create and modify learning materials to meet the ever-changing requirements of their courses. Instructional design support personnel should be aware the faculty members still prefer making their own slide decks.

Branch (2009) includes “learning resources” and “educational media” as the products of the development stage (p. 83). This competency is linked to how the content for a course is created. During the interviews and the think-aloud protocols, every participant (n=8) described situations where they have created materials for their course. Every participant (n=8) also mentioned a willingness to find and modify existing resources. I also found there is a constant demand on faculty to create or modify new materials for their courses. As the medical profession changes, the PA program’s content must also change. This results in a near-constant need to create or modify learning materials. Interestingly, despite

this constant demand for new materials, several participants mentioned they still prefer making their own slide decks.

**Develop - Participants Need to Make Consistent Updates to Their Learning Materials.** The medical profession is continually changing. Therefore, the programs that prepare PAs also need to change continually. Crystal provided an example of how quickly learning materials can become outdated:

Now I am thinking about possibly revamping that book that I mentioned that is because I did have student feedback about abortion. A lot of the information about abortion in that book was very outdated, especially with the recent political changes. (Crystal, interview, p. 4)

During our interview, Crystal provided another example of the required maintenance of learning materials:

So I made a PowerPoint about just racial inequity in women's health, which is a huge topic. And basically put actual data. I kind of modified it from a slide that or a slide deck that [Sally] had previously, but it was very outdated. All the data was very old. And then there were a few other things that I thought were important to add. (Interview, p. 4)

Dolly also discussed being cognizant of presenting the most current information possible:

I use AccessMedicine a lot, and their current book. So they have a current book kind of for all specialties, and then they have a current book that's just medical diagnosis and treatment, and that's updated every year. And so I would just make sure that the topics that were on that PAEA topic list that I was covering, and then that I was also making sure that the most current information was up-to-date. (Dolly, interview, p. 1)

The courses in this program run only once an academic year and in the medical profession a lot can change in a year. Dolly must ensure the learning materials are current every time the course runs. This approach illustrates the ceaseless nature of the participants' development schedule.

Tammy also faces the challenge of developing or altering content to keep up with the changes occurring in PA practice:

So, if it's something that I'm lecturing on, if I've lectured on it in the past, I'll pull up that lecture, make sure I'm teaching them the most up-to-date, using up-to-date and access medicine. So the textbook that we require, and making sure that everything's up to date. For the most part, I've created my own. I have used some previous resources from the previous course coordinator and just adapted it to make it more my own with credit to the previous creator. (interview, p. 5)

In addition to changes within the medical profession, there are other reasons participants feel obligated to make changes to their content. One reason to continually develop new learning materials is to prevent academic dishonesty. New learning materials prevent students from sharing content with peers in the cohort behind them. Crystal updates existing course materials to prevent students from sharing assessments with incoming students. This can result in a tremendous amount of work:

So one of the very difficult things is going to be taking 65 cases that they used in 2023. And then making 65 different cases, you know coming up with 65 different diagnoses for 2024 because we don't want them sharing those cases that they've written already. So that's going to be the first thing that I that would be the first thing that I would do. (think-aloud, p. 9)

Another reason course materials are consistently created or altered is to keep up with changes to pedagogy. Throughout my conversations with the PA faculty members, there was an emphasis on incorporating active learning strategies. Taylor mentioned she will develop materials to align with new teaching strategies:

I very much understand death by PowerPoint. And so even though that is a majority of our teaching, I will still try to incorporate things that kind of grab people again or bring them back to me or try to reinitiate their attention. (interview, p. 5)

During the think-aloud protocol focused on developing a new course Taylor described developing course content to support instruction that is not solely lectured-based:

I think you have to be able to first provide the students with information on how they can even develop this graduate project and the resources they will need to be able to do so. And I think you

could do that through many different formats, some lectures, maybe some modules like practicing navigating through some of these resources to find things. (think-aloud, p. 8)

Tammy also mentioned wanting to develop course materials that were more student-centric or active, “So where can I get them out of that death by lecture, typical pedagogy, and incorporate more active learning styles?” (think-aloud, p. 7). Carrie has also had to develop new learning materials as she moves towards active learning strategies and presenting smaller chunks of information to meet her students’ needs: “I’ve noticed that the attention spans are really small. They’re just used to what’s it called? TikTok. Yeah And so things need to be packaged” (interview, p. 4).

Faith also deals with consistent changes. One example of consistent change is the background of the students. Students come into the program from all around the country. From a practical standpoint, this can be difficult because each state has different licensing requirements. Faith developed a project where students research the licensing requirements in their home state and then create a brief presentation on the process. She summarized this strategy as follows, “Well, every state is different. So this was going to be a let’s flip it. You teach me” (Faith, interview, p. 3). Students’ backgrounds and course content will consistently change. Faith relies on existing resources and creates her own content to meet these changing needs.

**Develop - Participants Will Create and Modify Existing Resources.** During my conversations with the participants in this study, it became clear having the time and space to creatively approach developing materials is a luxury. Despite being pressed for time, the participants still wanted to put out the best product possible. I will highlight evidence below that supports my assertion that the participants are busy professionals who will modify or create learning materials.

Taylor explained her decision to modify resources as opposed to using them as is:

If it’s something I’m delivering, it’s a product that has my name on it, and I still want it to be good. So most of the time, I will make my own learning material, but I have taken prior-made learning materials and made them own. Adapted them. (interview, p. 5)

Loretta mentioned a surprising reason why she will modify existing resources. She feels she lacks creativity: “Let's say I'm less creative in that aspect, that I usually kind of draw from various sources” (interview, p. 5). Therefore, she will reuse existing materials. She does modify these materials as needed:

I have typically found existing materials, and I try to make them unique, though, to my situation.

I don't think they're just cookie-cutter, and you can just plug them right in. I want to make sure that they're relevant to my students and what my students are taught. (Loretta, interview, p. 5)

Dolly is reluctant to develop her own content. During the interview, she stated, “I always go and use or go to find resources” (Dolly, interview, p. 5). Dolly did later describe a time where she created her learning materials and I will include that quote in the next section.

Carrie also modifies resources for her courses. In her early days of working as a faculty member, she was more likely to use existing resources to help her manage the amount of work she was facing.

So I will I mean, when I first started, I inherited learning objectives and PowerPoints that someone else had used and tried to make them work for me because I teach a lot of content, and I was just wrapping my mind around it and sort of using whatever resources were there. (interview, p. 2)

Carrie also described her approach for developing content during the think-aloud protocol focused on redesigning a course:

And then once I figure that out, I'm going to look for practical resources like a text because everybody needs some sort of a text or some sort of an online resource that kind of guides their learning. I would also look for resources like if we decided that we needed a cadaver lab, like how am I going to get that and coordinate that? (think-aloud, p. 6)

This approach shows Carrie's willingness to use existing resources and speaks to her practical approach.

Carrie seems to triage a course during the development stage. She decides which materials are essential to run the course. She then secures those materials first. She does not become overly concerned with one particular week of the course. Rather, she looks at the course as a whole when deciding which materials to secure first.

Faith, who primarily supports the clinical year of the program, also finds existing content for her course. She incorporates assessments into her courses that have already been created and require no further modification. Faith utilizes the end-of-rotation assessments provided by PAEA. PAEA creates these assessments, provides a delivery platform for the assessments, and provides reporting on student performance. Faith described using these assessments as follows:

And then we are lucky on the clinical side and that we use the end-of-rotation exams from PAEA, which are the 120-question content-specific areas for family medicine, internal medicine So that's how we do that. I don't have a lot of say in those exam questions. Yeah, because that's a panel.  
(interview, p. 5)

Patsy's modification of learning materials centers around existing textbooks. She will identify an appropriate book list and then build out materials to support the content presented in the textbooks. Patsy described this approach while discussing how she would re-design an underperforming course:

Oh, I have to evaluate the book list, and I'm also going to look at those books and see if any of those have good - oh, man, now you've got my brain running - activities and just content for the lectures. And then do I need to change the book list? Do I need to slash the booklist? Do I need to-- what do I need to do with it? (Patsy, think-aloud protocol, p. 8)

Participants in this study are also willing to create their own learning materials for their course. Despite the constant demand to update materials and hectic schedules, the participants were willing to create learning materials. This finding justifies reviewing best practices for creating learning materials during future professional development sessions.

During the think-aloud protocol, Loretta described a scenario where she would be willing to create her learning materials:

Because students will ask all those questions. How long does it need to be? How many references do I need to have? So if it's a project where they're going to do a presentation at the end, making it very clear what the criteria is for the presentation, I would create a rubric for the presentation.  
(think-aloud, p. 7)

This potential rubric would provide valuable feedback to students after their presentations and provide clear expectations. I interpret this as an example of a faculty member being willing to spend the time to create new materials when the product will significantly impact the learning experience. Loretta believes it is worth the time to create new learning materials when there are multiple benefits to the product:

Dolly also outlined a scenario when she would be willing to create her learning materials.

The only time that I could think that I would use my own knowledge is if maybe on the topic list, there's something that I think is important that isn't covered on there, and that's just like a specific disease state. But then I would still go to Access Medicine Book to use that knowledge to expound more on that topic if that makes sense. (interview, p. 5)

This is a practical approach. When there is a gap in the existing materials, Dolly is willing to create new materials to teach missing elements. Carrie also occasionally finds a gap in the existing content and needs to create supplemental materials: “Sometimes I will draw my own figures. Because there will be like three textbooks that just don't cover it or something from the internet or whatever” (interview, p. 4).

Faith will also develop her own content. When she does create content, she emphasizes authenticity because she believes it helps students retain the materials. She summarized this approach as follows, “So I'm drawing from my own experience, my own-- because I think stories stay” (Faith, interview, p. 6). To create materials to support this approach, she builds off of authentic materials from her own PA practice, “And so yeah, I will frequently use my own x-rays, my own resources as for patient stories” (Faith, interview, p. 5).

***Despite busy schedules, participants preferred to make their own slide decks.*** Even with busy schedules and a constant need to develop learning materials, several of the participants still preferred to make their own slide decks. I have chosen to include this finding for other professionals who support the design competency of busy faculty members. It may seem intuitive to provide faculty members with an AI-generated slide deck or a slide deck from a resources-sharing site. However, it may be worth discussing this approach with faculty members before assuming a pre-created slide deck would be useful.



Patsy is open to using resources developed by others, except slide decks. Early in her career, she relied more on modifying existing slide decks but found this approach caused issues when lecturing:

In the very early stages of my career, I would find others. And the problem with that is that you get up there and you're teaching and you're like, Wait, what does this slide say? Oh, okay. Oh, yeah. And then you're having to think on the spot, and the student's looking at you like, If you don't know the material, how am I supposed to know the material? (Patsy, interview, p. 5)

Given this issue, Patsy now primarily creates her own slide decks. She will utilize resources to help develop these slides “Now I use resources, of course, books and qualified websites and those types of things. But making my own is just a lot better” (Patsy, interview, p. 5).

Similar to her colleague, Faith has come to the conclusion that it is ultimately easier for her to create her own slide decks:

Most definitely 100% will do my own PowerPoint. And those kinds of things, I don't use SlideShare or typically don't use another person's lecture. I've found over the years that sometimes it's more difficult to revise the lecture to make it what I'm wanting than it's just easier to create my own. (interview, p. 5)

The participants in this study reported feeling more prepared to teach their courses when they created their slide decks. Within the context of Sullivan University's PA program, instructional design support personnel may want to spend time developing materials other than slide decks. The faculty participants may also benefit from instruction on best practices for creating slide decks.

### ***Implement***

Assertion: PA faculty members at Sullivan University support struggling students, schedule outside professionals to support learning activities, and carryout other time intensive tasks during the implementation of a course. Any future professional developments must account for their busy schedules.

The goal of the implementation phase is to “Prepare the learning environment and engage the students” (Branch, 2009, p. 132). The PA faculty members at Sullivan University face several logistical challenges as they prepare the learning environment. These challenges include coordinating outside

professionals to support learning, supporting struggling students, and various clerical tasks. There are several opportunities for instructional design personnel to support faculty members as they implement their courses.

**Implement – Scheduling Outside Professionals.** Sullivan’s PA program brings in outside professionals to deliver lectures or coordinate small groups. Scheduling these outside professionals is left to the course coordinator. At Sullivan University, the course coordinator is the faculty member who designs the course. These outside experts bring in a wealth of knowledge and skills. However, it is a challenge to coordinate the schedules of busy professionals. Additionally, the course coordinator must provide enough guidance to the guest lecturer to ensure course objectives are met while avoiding micro-managing a fellow medical professional.

Patsy, who was the Director of Didactic education at the time of our interview, oversaw all didactic year courses. She provided an overview of the use of guest lecturers within program “[I] try to get most lectures covered by full-time faculty. I find value in outside lectures, especially if they're in a super specialty or it's something that our faculty is not super comfortable teaching, like the eye” (Patsy, interview, p. 5). When a guest lecturer teaches in her course, Patsy takes several steps to support the guest lecturer. She began explaining how she supports guest lecturers by describing a 10-minute video she created for guest lecturers:

It's like a 10-minute video. And it's like, "Here's where the students are in their curriculum. So they can know what they know and what they don't know. Here's who dictates what we need to teach. NCCPA, those types of things. Here's what they need to know. And then I pass that along to them. And it helps somewhat. One of the things I like to do across all lectures is make sure that there's some consistency so that the students understand what to expect, even if it's from a different instructor. Where that gets a little tricky is I'm not going to micromanage you, and I can't tell you exactly what to put in your lectures versus not. (Interview, p. 5)

Patsy also considered incorporating guest lecturers into a course during the think-aloud protocols. She stated, “Then I'm going to decide, do I need to change guest lectures or just change lectures, period? Is there anyone new that can pop in?” (think-aloud, p. 8).

Taylor will also utilize guest lecturers in her courses. She provides the guest lecturers with several resources to help prepare them to teach in her course:

So I could offer them previous slides if they existed and say, Make this your own, or whatever is best. But the main points being we just need to make sure these are the objectives that are covered within however you deliver the material. I would probably also include maybe some blueprint stuff of high stakes exams that like, Hey, these are other things they could maybe see in the future, and things I would emphasize more of your points and time on. I would make sure that they, if they want it, have access to library resources because we don't all keep textbooks around. (Taylor, interview, p. 5)

In addition, Taylor mentioned sharing the 10-minute video created by Patsy that helps onboard guest lecturers (Interview).

Dolly has designed courses where outside professionals conducted the majority of the lecturing: I'm not teaching a lot in those courses. I'm just kind of the behind-the-scenes person who's making sure the guest lecturers are set up and know what the objectives are from the syllabus and making sure that whatever they cover in their lectures I'm reviewing so that it matches up with when I'm making the assessment. (Dolly, interview, p. 4)

Dolly also outlined her criteria for selecting a guest lecturer: “I looked at that and then tried to find maybe a lecturer who was comfortable giving a lecture and was an expert in women's health, whether it be a doctor who-- that's her expertise or a PA or NP” (think-aloud, p. 8).

Carrie utilizes the same guest lecturers in her course repeatedly, so the guest lecturers have a strong understanding of the expectations of lecturing in her courses. When a new guest lecturer does come into her course, she supports their academic freedom. She also wants to ensure the objectives are taught:

I guess what I would do is show them the learning objectives and show them you know this is how I do it. This is what they're used to. But give them the freedom to change. You know I would always give somebody what was done before and say, You have autonomy. You can do what you need to do.' But the exam questions need to come from these learning objectives. So I would sort of say that is my you need to connect it back to that. (interview, pp. 5-6)

Crystal designs courses that require her to schedule small group coordinators, secure rooms to house these small groups, and arrange guest lecturers. Crystal described the difficulty of scheduling guest lecturers: "you got to book all your lecturers, which is honestly one of the more difficult components is trying to get people who work full-time to come lecture for us" (interview, p. 3). To help ensure these guest lecturers are successful, Crystal will provide guest lecturers with the brief tutorial video created by Patsy, which covers the basics of delivering a lecture. She will also provide a list of objectives, resources from the course textbook, and links to other library resources. Coordinating the small groups for her courses is more involved:

So we have nine different groups of seven students. So essentially, I'm working with nine different facilitators and scheduling them and everything. So that's a whole other thing I could explain to you if you want. But trying to figure out you know what do I need to do to make this course successful. Step one, put everybody in groups, get my facilitators, get everybody on board, and then schedule the rooms with [Pearl]. (Crystal, interview, p. 5)

Carrie also discussed the challenges of coordinating small group facilitators as she was thinking through how she would redesign an existing clinical problem-solving course:

I think I'd start with the facilitators first. Okay. Yeah. Make sure I have the facilitator involvement because that could be the most time-consuming thing, communicating back and forth with them just to make sure that they understand the expectations and the time commitment and everything. Kind of laying that schedule out. Because if I don't have a schedule, how am I going to get my facilitators on board? So that would be first. (Carrie, think-aloud, p. 9)

Tammy will take an overview of all the content within a course before scheduling guest lectures. She then identifies topics that should be presented by a guest lecturer but tries to remain flexible to allow lecturers to bring in their own expertise:

I would read through, look at the amount of lectures that need to be covered, the content that needs to be covered, the exams that need to be covered, who I need to be reaching out to guest lecture-wise because I know that I can't lecture on all of that material, and I would look at those guest lecture reviews from students to make sure that they were good or if they were a nope.

(Tammy, think-aloud, p. 7)

Like her colleagues, Tammy relies on the expertise of guest lecturers to cover specific topics in her course. Coordinating guest lecturers and other clerical tasks make implementing a course a time-intensive experience for Tammy.

Faith has also coordinated courses that rely on multiple small-group facilitators. She points out a common student concern with small-group instruction within the PA program:

Their number one complaint is what they taught in room 252 was different from what was taught in room 253 which was a little bit different from room 255. So one of the things the biggest things that I would do is teach the teachers. We'd have to have a systematic way to make sure we were all teaching the same methods. (Faith, think-aloud, p. 8)

Faith points out a need to provide a consistent experience for all students. Teaching the teachers is a significant challenge that may require additional support.

Faith will also use guest lecturers to address knowledge gaps. She primarily works with second-year students. She explained her process for selecting the topics to be presented to second-year students at their end-of-rotation meetings:

We work together to arrange for a guest speaker to come and speak on those areas of deficits. So that way we're-- so I'm using objective data, the PACKRAT. I'm looking at the didactic comprehensive exam. And then I'm also looking at the performance of the class just kind of in general. (Faith, interview, p. 4)

Faith also mentioned relying on guest lecturers during the think-aloud protocol focused on designing a new course, “I probably would have a guest speaker come in and talk to them about how to use PubMed appropriately, that kind of thing” (think-aloud, p. 10). While implementing a course, Faith spends time coordinating guest lecturers to address known knowledge gaps.

Tammy outlined how she prepared one guest lecturer coming into her course. She provides guest lecturers with the expected depth of knowledge for their instruction:

I sent him the slides that I have lectured on in the past. I sent him the learning objectives. And then with a goal, not necessarily listed in my syllabi, but I told him, "I've lectured on this in the past. It's very much just knowledge-based not experience-based. So feel free to adapt my lecture, make changes, discard, or add anything you find clinically important. (interview, p. 5)

The participants in this study have a limited amount of time to design their courses. A significant amount of time is taken up scheduling outside professionals. I will discuss ways to support faculty’s use of guest lecturers in Chapter Five.

**Implement - Providing Student Support.** As mentioned during the analysis section of this chapter most (n = 7) of the participants in this study do not design supports for struggling students into their courses. Rather, they handle the needs of struggling students if and when they arise. This means these retroactive remediation efforts are occurring during the implementation phase of a course.

For example, Tammy spends time fielding student questions during the implementation of a course: “Honestly, I probably should make myself not as available for students. I find myself staying after during lectures and labs, answering questions. So that hour I would get in between a lecture gets taken a lot” (Tammy, interview, p. 3). She also mentioned she will rely on the support of the program’s remediation specialist and peer-to-peer tutoring services to help field student questions (Tammy, interview, p. 6).

Crystal also supports struggling students during the implementation of her courses. She will connect students who failed an exam with the remediation specialist. She will also field students’

questions directly: “I always have an open-door policy and can bring them in. And they can look at other resources that I have too” (interview, p. 7). Crystal also mentioned that the Merck Manual is a concise guide to many topics covered in the PA program. She often refers students to this resource (interview). She also points out that students need help managing the vast amount of information they are expected to learn, “But for the most part, I don't recall anybody really having specific content questions. You know, It was more so like, ‘I'm overwhelmed’ or that kind of thing” (interview, p. 7). It would be wise to discuss strategies for lowering cognitive load in future faculty training. The program may want to develop a prescriptive student study plan or cover study tips.

There are programmatic supports in place to address the needs of struggling students, such as a remediation specialist and a policy that requires students to remediate failed exams. Many of the faculty members also take time to meet with students who have questions or are struggling with the content. In addition to these supports, I would encourage the program to look for ways to prepare the learning environment for students who may find the material difficult or overwhelming. Finding ways to identify and support a struggling student proactively could make implementing a course easier for faculty members.

### ***Evaluate***

Assertion: PA Faculty members at Sullivan University value the course evaluation process and consistently evaluate their courses. The program may need to make the evaluation and documentation process more uniform.

Branch (2009) states, “The purpose of the evaluate phase is to assess the quality of the instructional products and processes” (p. 151). While investigating how the participants in this study assess the quality of their instructional products and courses, I have concluded the evaluation phase of the learning design process at Sullivan’s PA program has the potential to improve. The faculty members at Sullivan University are at an exciting stage of developing their course evaluation strategies. Participants see value in evaluating courses. Faculty members currently rely heavily on student perception data, but some faculty members have started utilizing other data sources, such as programmatic level assessments.

There is also confusion about how to best to document course evaluation efforts. I suggest that Sullivan’s PA program may benefit from a uniform course evaluation policy built on an existing evaluation system such as the Kirkpatrick Model of Evaluation (Kirkpatrick & Kirkpatrick, 2016).

To provide a quick overview of the level of data sources used by the participants to evaluate their courses, please see Table 9. I will expand on the uses of these data sources throughout this section.

**Table 9**

*Evaluation Data Sources Mentioned by the Faculty Participants*

Alias	Student Perception Data	Course Level Assessments	Programmatic Level Assessments
Dolly	X	X	
Taylor	X		
Faith	X		X
Patsy	X	X	X
Crystal	X	X	X
Tammy	X		X
Loretta	X	X	
Carrie	X		X

**Evaluate - Course Evaluation is Valued by PA Faculty Members at Sullivan University.**

During my conversations with the faculty participants, it became clear they valued the course evaluation process. The faculty members were excited to receive feedback from students on the courses they designed. Every participant (n=8) mentioned reviewing student feedback at the end of a course. These learning designers want to know how students perceive their courses.

Taylor values the evaluation process because it helps her ensure that learners are getting the experience they need to be successful. During our interview, Taylor outlined why she values evaluation efforts, specifically collecting student perception data: “Because ultimately, that’s what this course is for [it] is the students” (interview, p. 1).

Dolly also finds value in the course evaluation process. While brainstorming how she would create a new course, she included an evaluation strategy without prompting from the researcher:

I guess the thing I'm thinking through is how would this-- I want this course, obviously, to be successful, but I'm also thinking about how we can measure how it's going to be successful. So



we're going to need evidence of what the students are doing to then be able to say, 'This degree is working,' and so what those parameters would be. (Dolly, think-aloud, p. 9)

Faith points out that evaluation is an important part of the design process because it is required by the program's accrediting body, ARC-PA:

And I would see if some of the changes I made were effective so that I'm looking at that full course report and the evaluation and the circle of life and how are we making changes because that's what ARC-PA wants us to do (think-aloud, p. 9)

Loretta also finds value in the evaluation process. She outlined how evaluation improves her instruction:

So if there is an area where the group of students is scoring low on, then it kind of goes back to the teaching of that content. Like, "Is there something missing there? Is there a missing link there? What do we need to do?" Because that's probably more on the faculty end that we're not giving the students the information that they need. (interview, p. 2)

The participants in this study already believe developing their competency to evaluate a course is worthwhile. The next step would be to begin building off the faculty's existing evaluation practices. I will highlight how the participants are currently evaluating their courses below.

**Evaluate - Use of Student Perception Data.** Every participant (n=8) discussed using student perception data to help evaluate their course. Course evaluations are distributed by the Office of Academic Affairs and Assessment within the college. Therefore, the busy faculty members do not need to create their own perception surveys or pull the reports for these surveys. Below I will highlight a few quotes on how student perception data is currently being used.

Taylor reviews both student evaluations of her courses and student evaluations of guest lecturers teaching in her courses (interview). Taylor also mentioned the importance of using data from student evaluations during the think-aloud protocol focused on redesigning a course "And then evaluations from the course, student feedback as well" (think-aloud, p. 7).

Dolly relies on student perception data to make design decisions. Dolly stated, “I guess one other thing I’ll mention is I do also look at the evaluations that the students do at the end of the courses. So that feedback is really good” (Dolly, interview, p. 1). She will use this data point to help judge if lectures were too long or too dense (Dolly, interview).

Tammy will use student evaluations to help evaluate the pacing of her course. She also uses student perception data to assess the quality of guest lecturers and other aspects of her courses:

Also, course evals are a good thing I look at year-by-year. I really [listen to] quotations from a student. I really wish we could have spent more time on this or had more time on this, allowing more time on certain content areas that may need to go a little bit more in depth than just a lecture. (interview, p. 2)

During the think-aloud protocol focused on redesigning a course, Tammy mentioned reviewing the evaluations of guest lecturers to ensure the lectures were of high quality (think-aloud, p. 7). Tammy also reviews student course evaluations to identify areas of improvement, “And then, of course, looking at the course reviews from students to see if there’s any overall gaps” (think-aloud, p. 7).

Loretta described using the student evaluations of the course as follows, “And then I like to review the student evaluations for the class and what they are seeing as an issue. Because sometimes the faculty see things as issues and the students don’t or vice versa.” (think-aloud, p. 6). The participants in this study view students as expert reviewers. Crystal also described the importance of student course surveys:

I value their input a lot. And that’s how I would like it to influence the course, you know using a lot of their input and feedback. That being said, you know everybody’s going to have different kind of desires and you can never please everybody. (interview, p. 7)

Patsy described her use of student course evaluations as follows, “I place a lot of weight - I always have on student evaluations and seeing-- what did you think of my lecture. Now, sometimes I take that with a grain of salt because they don’t know what they’re supposed to know” (interview, p. 2). Patsy and Crystal provide excellent examples of why I believe Sullivan’s PA program is ready to focus on course

evaluation. Student perception data is valued, but faculty members realize there needs to be more to their course evaluation process.

**Evaluate - Use of Data Points Other than Student Perception Data.** Several faculty members are already using various data points in addition to student perception data. These faculty members have taken steps towards a more robust evaluation process. In many ways, they have already started to implement a tiered system of evaluation similar to the Kirkpatrick Model of Evaluation (Kirkpatrick & Kirkpatrick, 2016). Below, I will highlight a few excerpts about how participants have already taken steps to move past relying solely on student perception data to evaluate their courses.

Taylor will utilize multiple data points to evaluate her courses. She discussed including programmatic level evaluations and accreditation standards into her evaluation process. She monitors “how people perform in your course and how they perform in high stakes exams throughout the rest of the program” (Taylor, interview, p. 3). Taylor also relies on accreditation standards to help evaluate her course: “So referring back to, again, ARC-PA resources because they actually do have some standards on what you need to evaluate to a certain degree. So making sure that we're covering all those bases on evaluations too” (interview, p. 5).

Loretta also uses multiple resources to evaluate her courses. She mentioned using course-level assessment results to identify possible issues with her course (Loretta, interview). Loretta was the only participant to mention using written assignments to evaluate the effectiveness of her courses:

Students will turn in notes to us, and so sometimes we'll see a common theme in those notes, like students aren't using the correct format or they're just not getting a certain concept. Okay, maybe we need to go look back at how we're teaching them to document. (Loretta, interview, p. 2)

Dolly is also using multiple data points to evaluate her courses. Dolly seeks out psychometric data to ensure her course assessments are sound instruments before relying on the assessment data to drive design decisions:

And then I guess too, looking at ExamSoft and using the psychometric evaluation. If I have given an assessment that maybe a lot of students did poorly on or there were a few questions that didn't test well, then going back to see what the stem of that is and ask why they didn't test well. Was it something that just they didn't grasp from a lecture, or maybe it was a question that was thrown in that I didn't even lecture over or trying to figure out what the problem was. (interview, p. 2)

This attention to detail is admirable. It also speaks to the need to develop a consistent course evaluation plan. Perhaps Dolly's instructional design support staff can help run psychometric reports on her course-level assessments, which would free her up to focus on less granular course details. Her expertise may be better used to track student performance in the clinical rotation sites associated with her course.

Patsy relies on several data points to evaluate her courses. In addition to student perception data, Patsy will review course-level assessment performance and input from former course coordinators (interview). Patsy also discussed the importance of monitoring student performance on programmatic level assessments to get an accurate picture of how a course is performing:

Another thing that I'll look at is assessment scores. So assessment scores for that particular course, but then across the board as well. So we like to align how they do on the course exams versus the end of didactic year exam, the didactic comprehensive exam, versus the PACKRAT, versus the end of rotation, versus-and go, okay, these PA2 students, when they got to endocrinology on their PACKRAT 2, they really didn't know what they were talking about. Well, that's my topic. So I'm going to go back and go, all right, what was not clear? What can I clarify? (interview, p. 2)

Carrie also relies on multiple data sources to evaluate her courses. She stated, "you know one comment on an evaluation doesn't prompt me to change an entire course" (interview, p. 2). Carrie will also review how students performed in her course. She stated, "I need to kind of take data from several different data points to make a decision like that. You know, performance, their feedback" (Carrie, interview, p. 2). She will also look at how the students perform on programmatic assessments to see if she needs to modify her courses: "if the topics for my course consistently come up as a weakness in the

PANCE, that type of exam or any standardized exams, then I might think, Okay, well, what do I need to do differently?" (interview, p. 1).

Crystal also reports using several data points when evaluating her courses. She will pull data from programmatic-level assessments. She referenced using the Keyword Feedback reports created by PAEA after students complete an End-of-Rotation (EOR) assessment (interview). These assessments target skills and knowledge required for specific PA practice sites, such as a surgical practice. Crystal will use the reports to get a sense of how a cohort of students is performing within the program:

I think that just being intentional about reviewing our students' feedback at the end of the quarter, reviewing the keyword feedback from the EORs of the second years too, just to kind of see you know this class right now. (interview, p. 2)

The PACKRAT assessment provides evaluation data for first-year courses and drives programming for second-year students.

Tammy incorporates her experience as an alumnus of Sullivan's PA program and programmatic assessments to evaluate the effectiveness of courses. She mentioned, "So previously going through this program [I] knew where the strengths and weaknesses lied" (Tammy, interview, p. 1). This is a unique perspective that can benefit other PA faculty members. Tammy also relies on programmatic-level assessments to monitor the effectiveness of her courses:

And then also, I've seen on some of the data that we've pulled from standardized testing in the past couple of years, whether it be from the PACKRAT, the EORs, the PANCE, that they give us a task area that's history and physical exam skills, and that's been a lower skill. (interview, p. 2).

This is another example of a faculty member not being satisfied with only student perception data to evaluate their course.

Faith also relies on the end-of-rotation (EOR) exam scores to assess the quality of her experiential education courses (interview). She also described using the PA program exit survey created by PAEA to help with her evaluation efforts:

And our exit survey had revealed there's a deficit in our program with this content. And so that's what we were looking to meet that need. So the end goal was to smooth the transition from education to being a professional PA. (Faith, interview, p. 1)

Based on the evidence presented above, Sullivan's PA program is ready to implement a robust evaluation process that pulls data from multiple sources. This evaluation process could also help bring some uniformity to the documentation efforts of the faculty members. Below, I will present evidence of confusion regarding the expectations for documenting evaluation efforts.

**Evaluate - Confusion Around Documenting Evaluation Efforts.** While there is evidence that the participants in this study value the course evaluation process and base evaluation decisions on multiple data points, there is confusion around the expectations for documenting their evaluation efforts. This confusion has led to some faculty members not documenting their course evaluation process, while others have made some efforts but are confused about the expectations around documentation. This confusion may lead to issues when a new course coordinator takes over a course or during accreditation visits. Below, I will provide examples of the participants expressing confusion regarding documenting course evaluations.

Faith recognizes documenting evaluation efforts could be improved and is motivated to drive these improvements to ensure the program is in line with the expectations of the accrediting body:

And that's one of the things that I want to sit down with you and [Sally] and develop a better course report so it's almost more reflective of what's going on in the didactic year because I want to objectify the clinical year process so we have more statistical data and not so much this is a subjective opinion evaluation kind of thing (interview, p. 4)

Faith mentions relying on 'statistical data' and moving away from opinion. These are broad terms. This could lead to unclear expectations for what data needs to be collected. An evaluation model would provide criteria for what type of data should be collected.

Faith is in an interesting position when evaluating and redesigning courses. She primarily designs courses for the second year of the program, which focuses on experiential education. Students rotate through each course throughout the year. It takes an entire academic year for each student to complete each course. She is reluctant to administer changes to these courses until every student has completed the course: “But my biggest thing, I'm not going to implement a change in the middle of the year. I'm going to implement change at the end after that cohort has progressed on to the clinical year or graduated” (interview p. 3). This delay in altering courses supports the need to document evaluation efforts adequately. She will need this data when she is ready to improve her courses.

Taylor wants the documentation process of course evaluations to be more uniform and consistent. She described the existing course evaluation report that summarizes student perception data as follows, “And it's not this big, lengthy thing. It's one page of what scored highest. What scored lowest? What are the trends, positive and negative? What would you recommend we change? That's a very summarized version of it” (Taylor, interview, p. 2). The issue is these reports are not filled out consistently by course coordinators (Taylor, interview). Taylor mentioned the documentation process for course evaluations is currently being updated. This suggests that the program is open to reexamining how it is documenting its evaluation efforts.

Loretta also expressed confusion regarding the formal documentation process outlined by the program: “So I do believe that there is a process. Since this is my first quarter coordinating a course, I have not been involved with that process, so I honestly don't know the ins and outs of it” (interview, p. 2). She did go on to mention she was aware of a spreadsheet that tracked student evaluations of courses longitudinally, which could be helpful when redesigning her courses (Loretta, interview). Loretta did feel like she was missing one important data point from previous iterations of the course. She wanted to be able to review previous course grades (Loretta, interview).

This confusion may explain why several faculty members have not submitted documentation of their evaluation efforts. For example, Crystal is unclear about the expectations for documenting her evaluation efforts. Therefore, she does not regularly submit documentation of her course evaluation

efforts (Crystal, interview). Carrie also does not regularly submit documentation in regard to evaluating her course:

And to be honest, I am not great about filling that out. I mean, so I don't get in trouble sometimes if I don't do it. But the thing is, is that I'm doing it anyway. I just should document it better (interview, p. 3)

Tammy also currently does not prioritize documenting her evaluation efforts. She stated, “As far as the formal course report and how consistent I am completing those, not consistent” (Tammy, interview, p. 3). Patsy suggests this lack of consistent documentation may be due to faculty members viewing documenting evaluation efforts as arbitrary: “Technically. We are asked to complete course reports at the end of every quarter after we have all of the evaluations back. And so up until this point, it has mostly been, how did the students rank you?” (interview, p. 3). The faculty members evaluate their courses, often with appropriate data points, but do not document their efforts.

The confusion around the documentation process may be clarified if the evaluation practices were based on a particular model or framework. All the participants (n = 8) reported the program does not rely on any course evaluation models or frameworks. At least one faculty member is noticing the program may be over-reliant on student perception data. During the think-aloud protocol focused on designing a new doctorate-level course, Patsy began to rethink her approach to evaluating courses:

I'm looking at course evals, but-- oh, Ben, you're making me think. Because now, I'm thinking everything I thought in the master's course design, not everything, but it's maybe not as important in the doctoral, and I don't know why I'm thinking that. Because in the master's, I'm so reliant on the evaluations. (think-aloud, p. 11)

Patsy seems open to moving towards a model of evaluation that paints a fuller picture of how a course is performing. Several participants (n = 5) in this study discussed wanting to know why they were asked to carry out specific tasks or have data to support a design decision. A framework would help answer the important question of ‘Why do I have to do this?’. Basing evaluations on known best practices instead of what has been done in the past would be a step forward for the program.



### *Needs Pertaining to Course Design Competencies*

Assertion: PA Faculty members at Sullivan University expressed interest in attending trainings focused on principles of course design, strategies for incorporating active learning strategies into the classroom, and sessions that allow faculty to learn from other faculty members.

During the interviews, participants were asked what support Sullivan University could provide to improve their course design competencies. Their responses were varied. Participants mentioned wanting to be more creative in designing courses and incorporating active learning strategies. Other training requests included learning more about the resources provided by library services and wanting an outside education expert to identify gaps in the faculty's design practice. These requests can all be addressed under a training series focused on the course design process. Faith specifically requested training on course design: "Course design, number one, I'm sure one of the things that a lot of people have mentioned is just making sure that we have resources available to us" (interview, p. 6). A design model would help faculty members tailor the instruction for the students in their course and help monitor if the creative approaches they want to try still meet the desired learning outcomes. Participants in this study would benefit from additional training on design models or course design principles.

**Needs - Faculty Members Would Benefit from Training on Course Design Models.** Tammy made a compelling argument for professional development that covers basic course design principles. Tammy reflected, "But we learn from the people that we've worked with, and if those people didn't have any formal training with course creation, then I guess we're just kind of repeating" (interview, p. 8). Introducing a design model would help faculty members maintain known best practices as they support each other. Also, if faculty members refer to a specific design model, they would have an easier time explaining their design process to future faculty members. Following a design model recognized in the literature would also make sharing or publishing their successful design initiatives easier.

Taylor wants to see faculty members empowered to drive change within their courses. When she was asked about what support the program needs, she replied, "I think we have a lot of faculty who would like to change things up in their course or try to do a little something different, but they don't know the best approach to that" (interview, p. 6). I interpret this request as asking for further professional

development focused on course design strategies. Redesigning a course requires several design competencies. Learning more about design models will help faculty members redesign their courses. As an added benefit, training around various design models would provide a common language between instructional design support personnel and faculty members. Instead of discussing a generic desire to ‘change things up’, the conversation could focus on a particular design decision occurring during a pre-defined process.

There were also requests to identify creative or engaging approaches to teaching content. I interpret a request for developing more creative teaching approaches as a request for additional training on design models. Providing the PA faculty members with a design framework would help provide a structured problem-solving approach and ensure the novel approach still works for students. Loretta expressed an interest in bringing creative approaches into her course:

I just don't know of any resources where I could say, ‘Hey, can you help me think of how to deliver this content in a more exciting way or how to assess this content so we don't have five multiple-choice tests in one quarter, so to speak.’ Try to mix it up and be creative. I would like to do that, but I don't know how. (interview, p. 5)

Understanding course design models could bring clarity to this request. Instead of trying a different delivery method in isolation, understanding a design model could help Loretta customize the experiences for the students in her classroom and evaluate the results of the new teaching method. Dolly also wants to bring engaging and active learning strategies into her courses:

You can only do a Jeopardy game so many times where the students are like, ‘Oh my gosh, this is so boring.’ So yeah, just trying to be creative in keeping students engaged and excited about what they're learning, instead of being just like somebody's droning on and on and reading from the PowerPoint kind of thing. (interview, p. 7)

She is requesting support to create engaging and active learning experiences. Engaging students is a worthwhile pursuit. There is also a need to ensure students are learning all of the content they need to be successful in the program. Balancing engagement with coverage would be supported by a design model.

Carrie was humble when describing her professional development needs. She made the excellent point that as a non-expert, she may not know which questions to ask:

So there are things that I think are helpful. I mean, I guess just more of that in areas where someone who knows more about education than I do would be able to say, "Oh, we don't have this resource. You know I don't know what I don't know. (Carrie, interview, p. 5)

She is open to an outside expert reviewing current practices and suggesting what training would be most appropriate. Carrie wants to make evidence-based decisions and know the criteria the outside expert is using: "You know I love to have a reason for what I'm doing" (interview, p. 5) I contend reviewing instructional design models would help identify gaps in current practices, provide criteria for assessing courses, and provide a rationale for design suggestions.

Crystal described a very specific need for her courses. She stated, "I think the pre-course survey would be really I know we don't want to survey them out, right? But I think a pre-course survey could be kind of cool" (Crystal, interview, p. 8). This demonstrates that faculty members have their own initiatives they want to incorporate into their courses. A better understanding of instructional design models could support these initiatives. This specific request fits nicely under the analysis phase of the ADDIE design model.

Faith suggested the PA program work with library services to ensure PA faculty members understand all of the resources that are available to them:

We have access to medicine, access pharmacy. And those are good. But I will tell you that when we started kind of being told that you have to use this, there was no guidance as far as, Well, do we just have a license to access everything? Well, we don't. We don't. I learned that the hard way. And so I spent a lot of time figuring out what I could do and how I could actually take.

(interview, p. 6)

In addition to making sure PA faculty members understand their level of access to existing resources, Faith wants to make sure resources remain transparent. She stated, "You guys were great about creating things and lib guides to the point that I think sometimes we've forgotten what is actually there" (Faith,

interview, p. 6). This is an important reminder. Regardless of the types of training sessions developed, the resulting artifacts must be easy to find. Faculty will need to be occasionally reminded to check the resources site.

**Needs - Insights into Methods for Delivering Future Professional Developments.** This study did not focus on investigating how the PA faculty members at Sullivan University prefer to learn. However, after speaking with eight of the faculty members in the program, it became clear they valued peer-to-peer collaboration. Below, I will highlight a few quotes that support the idea that Sullivan's PA faculty members enjoy collaborating with their peers.

Taylor suggested the PA program could benefit from a peer mentorship program. This would help provide ongoing support to meet the design needs of faculty members. She stated, "I feel like faculty that we can use each other as mentors too" (interview, p. 6). To Tammy's earlier point, this mentorship program would not be effective if the mentor was providing faulty information about course design. Therefore, having a framework and resources would benefit the mentor and the mentee.

Patsy would also like to learn from other faculty members. However, she did not limit this potential collaboration to Sullivan's PA program. She would like to continue to attend conferences and other professional workshops (interview). Patsy also stated that she would like to learn from faculty members within the Doctorate of Pharmacy Program:

I love when we're not so siloed and the Pharm D and the PA can sit down all together and go, Hey, you know what? I've done this and it worked really well. And you sit and you find that you have more similarities and differences, and you can really learn from each other. (interview, p. 6)

These conversations could be framed through the ADDIE instructional design model. This shared language would allow faculty members to focus on learning design as opposed to focusing on the content they teach.

While there were several seemingly separate requests or ideas to support Sullivan's PA faculty members' course design practice, there is a common thread. The PA faculty members need a schema or

framework to help bring clarity to the design process. The framework would start connecting isolated tasks into a coherent picture. For example, a larger schema could help explain how creating a 'getting to know you' survey may help catch student issues early, which could make the implementation of the course easier. The specific requests for training will be addressed. Overall, I suggest these training sessions should be situated into a larger design framework highlighting how various tasks combine to create a highly effective course.

## Chapter 5 Conclusions and Implications

This study explored how PA faculty members at Sullivan University design their courses. This research was motivated by an interesting phenomenon. An educational program is highly successful despite having limited support from instructional design professionals and a limited number of faculty members formally trained in education. After examining the data generated from this study and existing research, I have reached several conclusions that will help drive improvements within my workplace. As a reminder, these conclusions are based on data collected while investigating these research questions:

1. How are Physician Assistant (PA) faculty members at Sullivan University designing their courses?
  - a. How is the work environment or context influencing Physician Assistant (PA) faculty members as they design their courses?
2. What support do the PA faculty members at Sullivan University need to help their course design practices?

This study resulted in several findings. The most significant finding of this study is my support for the faculty members' learning design practice has been too narrow and I have not effectively leveraged existing resources. Several contextual factors, namely resources provided by National PA education organizations, can be leveraged to support faculty members' course design competencies. Any initiatives to support learning design need to accommodate the faculty members' time constraints. Sullivan's PA faculty members would benefit from training on the ADDIE instructional design model if it were situated into their role as faculty members. The program has not prioritized analyzing incoming student needs and documenting evaluation efforts, but these potential areas of concern can be supported by framing learning design efforts with the ADDIE design model. Using ADDIE as a lens, I need to help PA faculty members see and name effective strategies already in place. To further support the faculty members' evaluation competency, Sullivan's PA program would benefit from a more formalized course evaluation process based on Kirkpatrick's Four Levels of Evaluation (Kirkpatrick & Kirkpatrick, 2016).

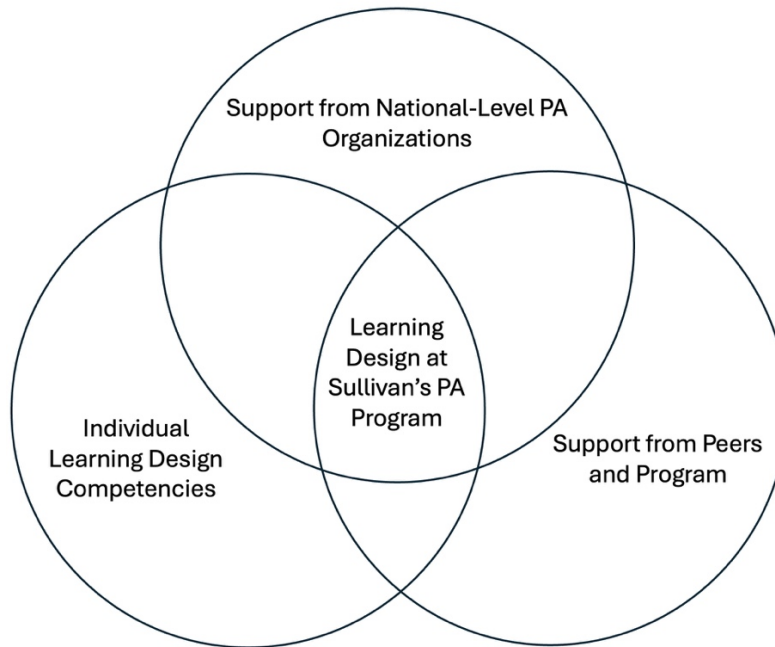
In this chapter, I will discuss these findings and attempt to situate them in existing literature. Additionally, I will point out the limitations of this study and suggest future areas of research.

### **Previous Learning Design Support Has Been Too Narrow**

As I worked through this study, I realized my previous efforts to support Sullivan's PA faculty members' learning design have been far too narrow. My efforts have focused on solving one-off issues, such as helping put together a learning module for an anatomy course. This approach is insufficient. We have had one-off trainings on key design concepts such as instructional alignment or how to write objectives. Still, I have never provided a full plan for carrying out learning design at Sullivan University's PA Program. Part of understanding this full story is understanding the important role national organizations and peers have on the learning design practices of Sullivan PA faculty members. An individual faculty member's design competencies may not be the most important part of the learning design process. Support from national-level organizations and support from peers are critical to the process. Figure 4 is a simplified visual of how the learning design is conducted within Sullivan University's PA program.

#### **Figure 4**

*Visual of the Learning Design Practice at Sullivan University's PA Program*



This visual oversimplifies the complexity of how a course is designed in Sullivan’s PA program. Some faculty members mentioned pulling in their experiences as practicing PAs. Some participants are alumni of the program, and they use that experience to help shape their courses. All the resources come together within an accelerated program where time is always limited.

I overlooked the importance of context in PA faculty members’ learning design process. In the past, I thought of context as issues to work around or build from. In this case, context is a driving force in course design. In hindsight, it seems obvious that faculty members with limited training in learning design would rely on outside resources to create a course. As I have discussed, the PA faculty members at Sullivan University are resourceful. When faced with a challenge they are not familiar with, they turn to outside resources.

### **Leveraging Contextual Factors to Support Learning Design**

There are many ways to answer the question ‘How are Physician Assistant (PA) faculty members at Sullivan University designing their courses?’. However, if the answer does not include a discussion about the context in which the learning designers complete their work, the answer would be incomplete. Context and design cannot be separated. This finding is supported by Abramenska-Lacheb and Ozogul



(2022), who conducted surveys and interviews with faculty members regarding their efforts to incorporate authentic learning projects into their courses. The researchers concluded that “context plays an important role in shaping course design and teaching practices” (p. 295). Goodyear et al. (2009) also remind us of the importance of including contextual factors while researching design practice: “We believe that future progress in learning design R&D will require more and better research into users, their needs, contexts of use and the affordances of the various tools and resources that they're meant to improve their design activity” (p. 13).

Within Sullivan’s PA program, short timelines, busy schedules, and other contextual factors require courses to be redesigned quickly and efficiently. This has led to the PA faculty becoming pragmatic problem solvers. This finding aligns with prior research. In an ethnographic study focused on seven faculty members’ iterative approach to learning design, Bowers et al. (2022) concluded faculty members are pragmatic and focus on solving problems instead of following a specific design model.

### **Saving Faculty Members Time to Allow for Trainings**

Sullivan’s PA faculty work in a fast-paced and busy environment. Any suggestions or alterations to the course design plan will require providing faculty members with time to make these changes. I will provide suggestions to free up time for these busy professionals. First, the program should create an asynchronous course for students that covers study strategies and resources specific to Sullivan’s PA program. Several participants mentioned meeting with students who performed poorly on exams to review study habits and resources. A pre-packaged lesson would save faculty members time. Also, students could complete this module before starting the program. Ideally, this would reduce the number of students who require remediation efforts. I am not suggesting PA faculty members stop meeting with struggling students altogether. Research has found that faculty support can help reduce student stress and burnout among PA students (Johnson et al., as cited in Hoffmann, 2024). This asynchronous study tips module would hopefully shorten student meetings or allow the meetings to cover unexpected student needs.

A second strategy to save faculty members time is to offload some of the tasks that occur during the implementation of a course to administrative assistants. Administrative assistants can handle the scheduling of guest lecturers, facilitators, and rooms. Also, administrative assistants may be able to help with clerical tasks such as creating copies for class. If administrative assistants did not have the time to complete these tasks, it would be worthwhile to have a uniform strategy for scheduling and other clerical tasks. A uniform approach would allow instructional design professionals to create job aids to support anyone with the time to carry out certain implementation tasks. Faculty members with less workload during a particular quarter could take on some of these implementation tasks for their busier colleagues.

### ***Sullivan's PA Faculty Members Should Incorporate AI into Their Learning Design Practice***

This study found the participants in this study are busy professionals, and I have made suggestions that require additional time commitments from the participants. To allow faculty members to find time for future trainings, I recommend the PA program explore the time-saving benefits of Artificial Intelligence (AI). After conducting a case study project with three graduate students enrolled in an educational technology program Davis and Lee (2024) concluded, "AI offers significant time-saving benefits by generating preliminary outlines and structures, thereby reducing the workload for educators and instructional designers" (p. 11). Additionally, Zhang et al. (2024) conducted a systematic literature review focused on research articles on applying generative AI in education and found several empirical research projects that found AI was a time-saver for faculty members.

As a first step for incorporating AI in their course design process, I recommend Sullivan's PA program consider using ChatGPT to create formative quizzes for their courses (OpenAI, 2024). Amado-Salvatierra et al. (2023) conducted a case study research project investigating how AI benefitted the design of a MOOC and concluded ChatGPT was effective at assisting designers with the creation of formative assessments. As discussed above, Carrie was the only participant in this study who incorporated formative assessments into her courses to support struggling students. The PA program

could provide training that opens with Carrie outlining the benefits of formative assessments and then segues into how faculty members can use ChatGPT to develop formative assessments (OpenAI, 2024).

### **National-level PA Education Organizations Provide Exemplary Support**

One important contextual factor is the support provided by national-level PA education organizations. All (n=8) of the participants' course design practices in this study benefitted from national-level PA education organizations. Participants mentioned drawing from these supports during every competency described in the ADDIE design cycle. An immediate implication of this finding is instructional design support personnel within Sullivan need to become deeply familiar with the resources provided by these national organizations. To return to a previous analogy, national-level organizations provide a path and checkpoints to keep the program on track. Sullivan's instructional design support personnel must know this path. They need to consider how they can align their design support with the support provided by national-level organizations. Existing research confirms other PA programs benefit from national-level support. For example, Fernandez et al. (2024) relied heavily on the ARC-PA standards to create the program competencies and milestone exams for a fellowship program they developed.

Every participant in this study used resources from national organizations to establish and assess course learning outcomes. Sullivan's PA Faculty sets learning outcomes designed to meet competencies defined by National PA education organizations. Sullivan's PA Faculty then uses the programmatic level assessments provided by the national organizations to monitor students' progress toward achieving these goals. Abramenka-Lacheb and Ozogual (2022) found public health faculty follow a similar pattern and create learning outcomes based on national-level competencies. The fact programs rely on national organizations to set course goals may not be a surprising finding. Educational Programs must base their learning outcomes on some resources, and national-level organizations would be a likely source. This finding does remind support organizations that defining competencies will shape the profession. This

reliance on national-level organizations to define course learning outcomes may warrant examining how programs interpret instructions from the national level.

The End of Rotation (EOR) exam series provided by PAEA is an excellent example of a useful national-level resource. As discussed throughout Chapter Four, participants use the EOR exam blueprints to help set their learning outcomes for the first and second-year courses. Research tells us other PA programs use a similar strategy. Quincy and Snyder (2020) compared newer and more established PA programs using various criteria. The researchers found that 70% of PA programs utilized PAEA's End of Rotation examinations (Quincy & Snyder, 2020). The EOR exams provide both a target and an evaluation point for PA learning designers. Another benefit of the EOR exams is the usability of the data generated from these assessments. PAEA offers an assessment center website featuring an assessment hub that allows faculty members to pull EOR assessment data easily. This data can be analyzed at the individual student level or the cohort level. This data can also be downloaded for further analysis. This exam series should serve as a challenge to other national organizations to create a similar exam series.

### **ADDIE is an Appropriate Design Model to Present to Sullivan University's PA Program**

Before arguing why ADDIE would be an appropriate model for PA faculty members, I will establish why presenting any instructional design model to the PA faculty members would be beneficial. As established in Chapter Four, the content of the PA program will continually change to mirror changes in the medical field. The faculty needs to be prepared to redesign learning activities quickly and creatively. Ertmer et al. (2008) argue that one of the requirements for carrying out learning design tasks is the ability to access a mental model of the instructional design process. Presenting a design model to the faculty will help their ability to access a mental model while they work through their design process. I also want to provide the faculty with a design model because I agree with Goodyear et al.'s (2009) argument that "The main value of design tools and other design resources may well be to provoke teachers into thinking about new learning activities rather than equipping them to carry out pre-existing pedagogical intentions" (p. 2). An instructional design model will put faculty members on a path to create their own innovations.

Several studies argue faculty members benefit from familiarity with an established design model. Hoogveld et al. (2002) interviewed ten teacher trainers and reached the following conclusion: “This suggests that training in a complete instructional design methodology might be most helpful to teachers” (p. 302). Brown et al. (2020) conducted a mixed methods study with over 450 teacher participants who attended a professional development series focused on developing their learning design capacity. The researchers concluded there is a need to prepare educators to be learning designers to create “sustainable innovation” (p. 11).

An ideal design model for Sullivan’s PA program would provide enough flexibility to avoid limiting anyone’s approach. As outlined in Chapter Four, the participants all had different approaches to designing their courses. Bennett et al. (2015) suggest providing a flexible design model for faculty members because a rigid design template would not effectively support faculty members’ design practice. ADDIE is an appropriate design model to present to Sullivan’s PA faculty, given its flexibility. Chen (2011) points out there are more than 100 instructional design models based on the ADDIE model. The ADDIE model provides key competencies to consider but allows for enough flexibility that 100 models have developed under its key concepts.

ADDIE sets faculty on the path toward becoming effective learning designers. Bennett et al. (2015) provide a breakdown of what constitutes learning design: “Learning design encompasses not only teachers' planning and preparation for interactions with students during a teaching session, but also how they adapt designs in response to student reactions, reflect on improvements to their designs, and share design ideas” (p. 212). Most of these requirements are addressed within the ADDIE model, except for sharing design ideas. I would argue that ADDIE is still an appropriate design model to present to PA faculty members because systematically approaching learning design is a prerequisite for sharing design ideas if the goal is reproducible results. The participants in this study are in a prime position to publish their successful initiatives. National-level PA education organizations are excellent at disseminating information. With these organizations in place, PA education is poised to meet the goal of learning

design, the “ultimate goal” of which Dalziel et al. (2015) describe as “to convey great teaching ideas among educators in order to improve student learning” (p. 2).

The ADDIE design model also emphasizes working iteratively. Sullivan’s PA faculty members are already motivated to improve their courses continually. One sign of this motivation is the faculty’s desire to review student course evaluations for possible improvements. There are areas of their evaluation process that can be improved. Once a robust evaluation system is in place, the evaluation stage would highlight areas that could be improved within the course, thus restarting the design cycle. Connecting a design model that generates ideas for course enhancements to the faculty’s motivation to improve their courses should lead to an environment of continual improvement.

ADDIE is an appropriate design model for Sullivan University’s PA faculty members because their current design practices closely mirror the ADDIE design process. This finding aligns with Baldwin et al.’s (2018) study, which concluded the learning designers in their study “did not follow a formal instructional design process or rely upon instructional design model per se; they seem to have followed a process that mirrors the ADDIE model to a surprising degree” (p. 165). Sullivan’s PA faculty are already carrying out the work of a learning designer as defined by the ADDIE model. Still, their understanding of the course design practice can be described as knowledge-in-pieces (Kali, 2011). This makes sense because they have not been given an overarching schema or model to help connect the pieces of the design process. The faculty would benefit from a design model that combines their design efforts into a coherent whole.

Sullivan’s PA faculty members are already motivated to become effective learning designers. It is time to provide them with additional tools to reach this goal. Several participants in this study mentioned wanting to create courses that set their students up for success. The PA educator competencies also dictate PA faculty members should be able to “Design learning experiences and opportunities that use a variety of instructional methodologies that cultivate critical thinking skills” (Zaweski et al., 2019, p. 51). Faculty members now need a model to structure their existing design practices.

### ***Limitations of the ADDIE Design Model***

The ADDIE design model is an appropriate framework for structuring a learning design training series at Sullivan University. Still, there are limitations to the ADDIE instructional design model that need to be addressed. For example, Stefanik and Xu (2020) conducted a literature review on the use of the ADDIE instructional design model in various contexts and concluded, “more effort is needed to escape the rut that has plagued some instructional designers with conducting perfunctory design that focuses more on filling in the boxes of ADDIE rather than examining the rationale for design decisions” (p. 716). Other common criticisms of ADDIE include that it is too time-consuming and overly rigid. While these warnings are appreciated, the ADDIE model is appropriate to this target audience because it provides novice learning designers with a structured approach to thinking through course considerations. In terms of being time-consuming, the ADDIE model defines key processes to consider, but that does not mean all the work needs to be completed by the faculty member working as a learning designer. Some tasks, like analyzing the needs of incoming learners, can be delegated. Also, as faculty members become more comfortable with their role as learning designers, they can ultimately decide whether a different instructional design model is more appropriate for their design style. Trainings based on the ADDIE model would likely apply to other design models as over 100 models are based on ADDIE (Chen, 2011).

### ***ADDIE Should be Situated into the Role of a Faculty Member***

The ADDIE model could outline how PA faculty members are expected to carry out their learning design. However, it does not sufficiently explain the entire role of a faculty member. It is not intended to do so. Learning design is only one element of a faculty member’s teaching role. The ADDIE model must be situated into a larger schema. This will help faculty members prioritize their tasks, which is important given the fast-paced context in which they are designing. To support this claim, I would refer

to Dolly's response to the broad question, "How do you go about approaching designing a course for students?". Her response included analyzing psychometric data after delivering an exam. While this is a best practice, it should be situated into a broader plan. Psychometric data is valuable to investigate the quality of an assessment, but it falls short of evaluating the quality of an entire course. Faculty members may need help managing the granularity of the design process.

To provide training on learning design, instructional design professionals must consider the audience's context and questions. Before I conducted this study, I thought I had a strong understanding of the context in which the PA faculty members work. However, the context held more resources and challenges than I thought. I am in a much better position to support the faculty members' learning design process. Bickerstaff and Cormier (2014) interviewed over 100 faculty members and concluded "that even thoughtfully designed workshops can fall flat if not aligned with faculty questions." I will always be open to additional faculty questions. For now, based on this study's data, my first step will be to situate ADDIE into the role of a faculty member to address how to make 'small changes' in a course or how ADDIE can support incorporating active learning strategies. As far back as 2000, Stark called on the instructional design community to focus on developing faculty members' ability to serve as academic planners. Now that I have a better understanding of the PA faculty members' questions and context, I intend to answer this call.

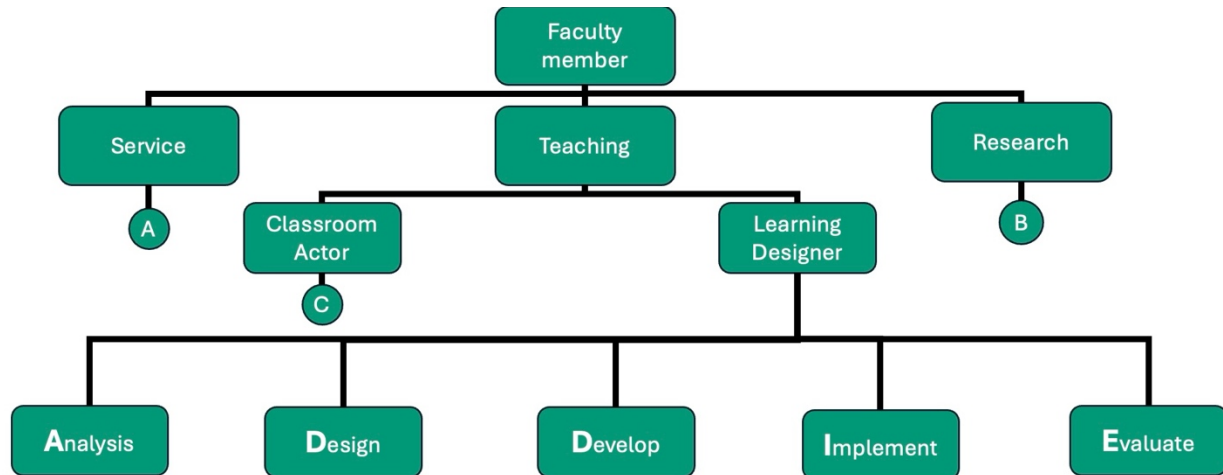
Faculty members' teaching practice consists of two elements, "classroom actor" and "academic planner" (Stark, 2000). The "classroom actor" component has been modeled for PA faculty members throughout their student careers by their former teachers. The hidden element of teaching practice has been the role of an academic planner or learning designer. It is time to develop faculty members' learning design practices. Norton and Hathaway (2015) also argue that "Teacher education must acknowledge and scaffold a second form or practice – the work of teachers as designers" (p. 3). Using Stark's (2000) insights, I will outline a simple schema showing how the ADDIE design model fits within the participant's role as a faculty member. Demonstrating how learning design is situated into the larger role of 'faculty member' will help provide context for PA faculty members and help them see their design



efforts as part of their existing responsibilities. It will also help address the persistent question of “Why am I doing this”?

**Figure 3**

*How Learning Design Competencies are Situated into the Role of a Faculty Member*



To provide an example of the utility of this simple and flexible schema, I will run through a scenario of preparing faculty for a presentation on Richard Mayer’s Principles of Multi-Media Learning (Mayer, 2009). I would explain to faculty members their teaching is broken into two main areas: classroom actor and learning designer. At Sullivan, we design courses using the broad competencies of design defined by the ADDIE model. One of the critical components of this model is to develop effective learning products. Therefore, we will explore Mayer’s principles of multimedia learning because these design principles support the development phase of a larger process. Mayer’s principals would not replace the plan; they support it. Mayer’s principles will explain why we are developing our learning modules in a certain way. Consistently referring to a design model should help reduce confusion among faculty. As content, pedagogies, and instructional technology change, the faculty members can always return to the knowledge that Sullivan University’s PA program relies on the ADDIE model to design our courses.

I have concluded Sullivan’s PA faculty would benefit most from a design model that aligns closely with their current design practice because they lack the time to completely reevaluate their

approach to designing a course. This opinion is in alignment with Stark's (2000) claim that strategies to improve teaching "should build on, rather than challenge, diverse beliefs of faculty groups" (p. 432). Instructional design professionals should demonstrate that a design model is not additional work. Instead, it supports work already being carried out.

### **The Program Should Begin to Focus on Designing Courses for Struggling Students**

There are steps the program can take to start planning for students who may struggle academically. As previously mentioned, it may be useful to have students review a training module that covers study strategies and reviews available resources if they need help with a topic. It may also be useful to disseminate Carrie's use of formative assessments. Early and low-stakes assessments can signal students and faculty of potential knowledge gaps. I would encourage Carrie to lead a professional development session on using formative assessment. It would be useful for her peers to hear her rationale for including these assessments and how she handles the logistics of delivering these assessments.

I am also personally challenged by this finding. As Loretta mentioned, faculty members may not know where to find previous gradebooks. An important competency of course design is to analyze incoming learners, but the participants in this study did not have access to key records to complete this process. This is a failure on my part. To address this issue, I have taken steps to create a dashboard we are calling a Cohort Report. This report is a dashboard of deidentified data that will provide cohorts' performance moving through the program. Ideally, this will help the learning designers analyze the learners entering their courses.

The need to build a student data dashboard serves as a reminder to other instructional design professionals that our supportive efforts can move past creating instructional materials and assessments. If instructional design professionals ask faculty members to analyze incoming learners, they should develop a system to make this as streamlined as possible. Facilitating

processes like analyzing incoming learners may be a way to help address the burden of traditional design models. Traditional design models can be considered time-intensive, and instructional design professionals should find ways to make the process more efficient. A faculty member's time is likely limited, so instructional design professionals need to build systems to ensure the faculty member can carry out all her learning design competencies in a timely manner.

### **Learning Design Successes Need to Be Made Transparent for Faculty Members**

Several strengths within Sullivan University's PA Program help facilitate effective learning design practices. For example, faculty members teach the same subject matter during the didactic year and the experiential year. Two participants mentioned preparing content in the first-year courses to ensure students could pass the End of Rotation Exams during the second year. This has led to faculty members focusing on using constructive alignment throughout their learning design process (Biggs, 1996). The participants utilized a known best practice but did not have a specific term to describe it. Through discussing these best practices, faculty can begin to acquire the language to ask questions and share their ideas with a larger audience. Furthermore, learning design terminology concepts will become more important with the emergence of Artificial Intelligence (AI). The benefits of AI will be contingent on the quality of the prompts generated by the faculty members. Understanding, defining, and naming key design concepts will enhance the quality of these prompts.

The excellent work of their peers also needs to be transparent to the faculty. For example, Crystal's Venn diagram approach to defining learning outcomes is worth sharing with the entire faculty. As a reminder, Crystal described overlaying several resources, including PAEA's EOR Topic list, the PANCE Blueprint, and objectives from earlier course iterations to define her learning outcomes (Crystal, interview). She later mentioned that she relied on her own clinical experience to develop cases for her courses (Crystal, interview). Incorporating the professional judgment of faculty members should be emphasized. Professional judgment could be one more circle in Crystal's Venn diagram approach. I

suggest allowing Crystal to coordinate a training session to review her process for developing course learning outcomes.

To support this Venn Diagram approach, which pulls from various resources, the curriculum should be transparent to the faculty members. This will help faculty members understand where the student's learning journey is moving. Watson et al. (2020) conducted a literature review and concluded faculty members' pedagogical decisions were supported by a curriculum map. Several participants in this current study mentioned summative assessments such as EOR exams or the PANCE assessment. There were no references to what students were learning in other courses within the same quarter. This is understandable, given the hectic schedules of the participants and the lack of transparency in the curriculum. To address the lack of transparency in the curriculum, the PA leadership team and I have begun creating a curriculum map capable of showing how a course connects to various programmatic outcomes. This map will also show course learning outcomes for each course. Additionally, to support Crystal's Venn diagram approach, we plan to pull in other resources, such as PAEA's EOR topic lists and the PANCE assessment competencies. The goal of this map is to allow a faculty member to see how their course is situated in the program.

In addition to a curriculum map to make the curriculum transparent, I would recommend the Socratic Method to facilitate a few future professional developments to make design practices transparent. As documented in this study, the participants already use several best design practices, but they may not have a specific name for the practice they are using. Hosting professional developments where these practices are discussed would be beneficial. A group conversation would highlight the strategies being used in the program. Questions from a moderator would help the group define which practices are most valuable. These practices can then be connected to approaches defined in existing educational literature, which will help connect the PA faculty members with additional resources.

I also plan to create a job aid that will serve two purposes. First, the job aid will situate the task being supported within the larger role of a faculty member. The PA faculty members want to know why they are being asked to complete a task. Situating the design model into their overall job description will

help answer that question. For example, faculty members may be more willing to spend time documenting their course evaluation efforts if they see how it fits into their larger role as faculty members. The second purpose of this job aid will be to connect faculty members with resources. When a faculty member has to design or redesign a course, she can locate this one-page handout, which will serve as a guidance document. This one-page handout will situate each linked resource (Appendix F).

### **Sullivan's PA Program Should Incorporate the Kirkpatrick Model of Evaluation**

During the evaluation of a course, participants already pull data from several appropriate data sources, including student course surveys, course-level assessments, programmatic assessments, and their professional judgment as practicing Physician Assistants. One source that holds significant weight with the participants is the results from student evaluations. This aligns with findings from previous studies that explored faculty members' course evaluation process (Abramenka-Lachheb & Ozogul, 2022; Baldwin et al., 2018; Bennett et al., 2017). Currently, no participant in this study uses an evaluation model to structure their evaluation efforts. This has led to inconsistency in how participants evaluate their course.

Without an evaluation model, it can be hard to understand why documenting particular data points is valuable. Participants viewed the documentation of evaluation efforts as busy work. I agree with this opinion if reviewing the data is done piecemeal and the whole picture of a course's performance is never formed. Kirkpatrick's Four Levels of Evaluation would help identify which levels of data to collect and help develop a complete picture of how a course is performing (Kirkpatrick & Kirkpatrick, 2016). This model would help explain why documenting findings regarding students' reactions (student evaluations), learning (programmatic-level assessments), behavior (certification exam), and ultimately, how the graduates of the program perform as Physician Assistants (results) is essential. Understanding the whole process may help explain why documenting evaluation efforts is critical. A quote from Carrie's interview helps explain why providing a rationale for the documentation process is so important: "You know I love to have a reason for what I'm doing" (interview, p. 5).

A plan to improve the documentation of the evaluation process must consider the context of the work environment. It is important to remember the faculty members within the PA program will not have much time for documentation. To avoid putting an additional burden on faculty, much of the data can be collected and stored by support staff. For example, a staff member already creates and distributes the student course evaluations. The resulting reports are then uploaded to a shared folder accessible to the PA faculty members. With guidance from the Kirkpatrick model, PA faculty members should decide which data sources are most appropriate. I will help with the logistics of storing and sorting the data, but the faculty members will evaluate their courses.

Additionally, using the Kirkpatrick evaluation model will help ensure the program collects data that will likely be needed for accreditation visits. This documentation process will also capture faculty members' reflections on the data. These easily accessible artifacts will highlight faculty members' iterative design process and ability to utilize the ADDIE design model to improve their courses continually. The program would have reaction level data (course surveys), learning level data (course level assessments), and behavior level data (programmatic assessments) available to outside accreditors. The combination of artifacts and reflections will show accreditors how data drove the faculty members' continual redesign process.

The Kirkpatrick model of evaluation has already been successfully used within PA education. Gordes et al. (2024) successfully used the Kirkpatrick model to assess the quality of a newly developed fellowship program. While there is little research on course evaluation efforts in PA education, there are lessons that can be learned from other medical programs. Chen et al. (2023) surveyed 90 pharmacy programs regarding their course evaluation process and concluded student course evaluations did not guarantee that issues with a course were addressed and there should be a more robust course evaluation system in place.

Sullivan's adoption of the Kirkpatrick Model may be relevant to a larger audience. Other PA programs need to prove a course or an alteration to a course is effective. These programs may be able to learn from our experience with incorporating this model. This goal aligns with other requests within PA

education literature. Hills et al. (2020) called on PA faculty members to “capture outcomes of innovative projects and disseminate their findings” (p. 131). A prerequisite for capturing the outcomes of an initiative is to have a proper evaluation system in place.

## **Limitations**

This study has several limitations. This case study was intended to develop a rich description of how PA faculty members at Sullivan University design their courses. While my workplace will benefit from the findings, it is important to know the study’s limitations. Limitations of this study include a lack of generalizability, the use of only two instruments, and the study relied on participants self-reporting, which can be impacted by social reliability bias (Abramenka-Lachheb & Ozogul, 2022).

This study does not claim to be generalizable. It focused on PA faculty members at Sullivan University, and it would be inappropriate to assume any results extend beyond this context. Besides all the participants working within the same context there are other factors that would limit generalizability. For example, all the participants in this study are female and live in the same region. Despite this lack of generalizability, I hope the research community can use the findings for a specific purpose. There have been calls for research into learning design within specific disciplines (Stark, 2000). Hopefully, these results will help explain how learning design is carried out in one PA program.

This study only used two instruments: an interview and a think-aloud protocol. Ideally, I would have been able to look at courses created by individual faculty members within Sullivan’s LMS. However, as discussed earlier in this paper, the design work of the PA faculty members is collaborative. Each course has multiple authors. It would have been difficult to identify the sole creator of a course found within the LMS. Also, not every element of the think-aloud protocol worked as planned. During the think-aloud protocols, I had hoped participants would draw diagrams or create visual representations during the think-aloud protocols. In the end, there were no notes worthy of further analysis.

The two instruments of this study also relied on self-reporting. The faculty members may have wanted to be viewed as effective course designers and tailored their answers accordingly. Also,

participants may have been reluctant to provide information that would reflect poorly on me. I am their designated instructional design support personnel. I did take steps to encourage honesty. Starting with the recruitment email (Appendix A), efforts were made throughout the study to elicit honest answers by creating a caring and judgment-free environment. Based on honest responses, such as admissions that required evaluation paperwork was not being completed, I believe the participants tried to be honest and transparent throughout the study.

### **Future Research**

Bowers et al. (2022) highlight a lack of research into how faculty members design their courses. They mentioned the research that does exist often highlights the voice of the researcher at the expense of the voice of the learning designer. I encourage future researchers to continue to explore the learning design practices of faculty members working in various contexts. The instruments used within this study captured faculty descriptions of their design competencies in their own words. The interview and think-aloud protocol used in this study could serve as useful instruments in future studies. Given my conclusion that context is a crucial element of course design, I would encourage future researchers to modify them to the context of their study.

I would also recommend future researchers examining faculty members' approach to course design use the ADDIE design model as a framework. Lee and Jang (2014) highlight studies that used the ADDIE framework to organize literature evaluations and to compare and contrast other instructional design models. The ADDIE model design model provides broad umbrella terms capable of situating relevant findings into an overall design process. This is true even when a participant does not rely on a systematic approach for designing a course. The ADDIE model helped me break down a complex and creative pursuit into more manageable data sets. Instead of comparing how faculty members design courses, researchers could compare how faculty members analyze, design, develop, implement, or evaluate.

I hope elements of this study will be beneficial to future researchers even if they do not want to rerun this complete study within a different context. The interview protocol (Appendix C) could provide



interesting conversation starters for instructional design professionals eager to learn more about the design work of the faculty members they support. The think-aloud protocol was also a valuable component of this study. For example, one reason I am confident in my assertion that PA faculty members rely heavily on support from national support organizations is there were several references to these organizations during the think-aloud protocols. Participants mentioned these supports without prompting and this confirmed the participants valued national resources.

This study found potential areas of growth during the analysis phase and the evaluation phase of the design process. It may be worth exploring if these phases of the design cycle are issues for other PA programs across the country. A survey on how PA faculty members approach analyzing learners and evaluating their courses may help illuminate potential areas of concern. This potential study could leverage resources provided by the Physician Assistant Education Association (PAEA). PAEA could help distribute a survey to PA programs across the nation. Additionally, PAEA could distribute resulting learning materials to address any needs revealed by the study. PAEA may also address potential needs through existing trainings such as their New Faculty Jump Start or New Faculty Accelerator workshops.

Another exciting area of exploration would be to compare the national-level organizations that support various professional programs. As discussed above, the national organizations that support PA education provide tremendous support. It may serve as a challenge to other national organizations outside of PA education to read about this high level of support. For example, a study could compare the support provided to PA programs to the support provided to Doctor of Pharmacy Programs by the American Association of Colleges of Pharmacy (AACCP). The End of Rotation Exams provided by PAEA would be an interesting support to highlight. A study could compare these assessments to assessments provided by other national support organizations. Are other professional programs benefiting from a series of exams during the experiential year that provides blueprints of expected knowledge and an assessment of students' progress within the program? This may help other professions develop a similar exam series. The goal of this exam series would be to set a clear path for students to follow and provide faculty members with assessments to ensure students maintain adequate progress.

## Summary

After conducting a study attempting to gain insights into the design competencies of faculty members, I understand why there is a standing call for more research into this area. Busy instructional design professionals may be hesitant to take on such a project. It is difficult, time-consuming, and, frankly, it is messy. Trying to capture a creative process will always prove difficult. There is also an abundance of design models to use as a framework to shape these studies (Chen, 2011). I would encourage my fellow instructional design professionals to embrace the challenge and keep pushing toward a time when learning design is a fundamental element of teaching. I agree with Bennett et al.'s (2017) conclusions that “improving teacher design promises to be a scalable, sustainable approach to building capacity amongst the workforce faced with complex and evolving drivers of change in higher education worldwide” (p. 1014).

I would also suggest that instructional design professionals not wait for the perfect answer. As with everything in education, there will not be a single answer that works in all contexts. Instead, I suggest instructional design professionals reflect on what they can do to make their work environment more conducive to learning design. I believe a practical first step would be to explain the ADDIE design model to faculty members. Ideally, this explanation would be contextualized for the faculty members. As new initiatives or findings develop, ADDIE will be flexible enough to accommodate these changes. More research is needed, but instructional designers can take action now to encourage faculty members to approach teaching as a design science.

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## **Appendices**

### **Appendix A**

#### Recruitment Email

Hello,

To continue supporting the Physician Assistant (PA) program, I would like to learn more about how PA faculty at Sullivan University design their courses. I am asking for your help and time to learn more about how you design courses. I will highlight relevant details below, but please know that participating in this study is entirely optional. You do not need to participate in this study.

This study will use two strategies to help capture your thoughts and processes regarding course design. There will be an interview that will range from about 20 to 30 minutes. There would also be a think-aloud protocol that would last about 20 to 30 minutes. These sessions would run concurrently, so your time commitment would be about forty minutes to an hour.

While you are likely familiar with an interview, you may be less familiar with a ‘think-aloud’ protocol. You will be given a scenario and asked to “think aloud” while you work through answering the scenario. Essentially, it is sharing your thoughts as you solve a problem. During the think-aloud portion, you will also receive a poster-size sticky note to draw out potential ideas. I will not be asking questions during this time and you will be doing the majority of the talking. I may prompt you to keep speaking, but the focus would be giving you a chance to talk through your process for designing a course.

I know you are busy. Taking an hour from your regular schedule is a significant request. If there were a faster way, I would use it. Course Design is a creative pursuit and is impacted by contextual factors. I

want to capture your experience with design as fully as possible. Data collected from this process will help shape current and future support for PA faculty members. As an incentive, anyone participating in this study will be entered into a raffle for a \$50 Amazon gift card.

Data collected from this study is not evaluative and will not be shared with your supervisor. Your honesty is appreciated and will be respected by keeping your responses confidential. The interviews/think-aloud will be recorded, an approved third-party vendor will transcribe the transcripts, I will analyze the data, and then I will share my findings with you to make sure I captured your approach to course design correctly.

I am asking for your time and help because professional developments are most effective when they consider real-world constraints and faculty members' current practices.

If you have any questions now or during this study, please contact Ben Stephens – [bstephens@sullivan.edu](mailto:bstephens@sullivan.edu).

Respectfully,

Ben

## **Appendix B**

### Study Information Sheet

#### INDIANA UNIVERSITY STUDY INFORMATION SHEET FOR RESEARCH

#### Investigating the Course Design Competencies of Physician Assistant Faculty Members: An Instrumental Case Study

**You are being asked to participate in a research study.** Scientists do research to answer important questions that might help change or improve the way we do things in the future. This document will give you information about the study to help you decide whether you want to participate. Please read this form, and ask any questions you have, before agreeing to be in the study.

**All research is voluntary.** You can choose not to take part in this study. If you decide to participate, you can change your mind later and leave the study at any time. You will not be penalized or lose any benefits if you decide not to participate or choose to leave the study later.

**The purpose of this study:** The purpose of this study is to continue supporting the Physician Assistant (PA) program as effectively as possible. I would like to learn more about how PA faculty at Sullivan University design their courses. I will ask you to share your approach to redesigning and designing a course. Learning more about your design process will help your educational support staff better support your course design process.

You are being asked to participate in this study because you are considered a principal faculty member within the PA program. This Accreditation Review Commission on Education (ARC-PA) defines principal faculty members as faculty members with primary academic responsibilities and are at least

50% full-time employees. The study will be conducted by Ben Stephens, who works in the Office of Academic Affairs (OACA) at Sullivan University's College of Pharmacy and Health Sciences.

**If you agree to be in the study, you will do the following things.**

This study will use two strategies to help capture your thoughts and processes regarding course design. There will be an interview that will range from about 20 to 30 minutes. There would also be two think-aloud protocols that will last a total of about 20 to 30 minutes. These sessions will run concurrently, so your time commitment would be about an hour.

While you are likely familiar with an interview, you may be less familiar with a 'think-aloud' protocol. In the 'think-aloud' protocols, you will be given two scenarios and asked to "think aloud" while you work through answering the scenario. Essentially, it is sharing your thoughts as you solve a problem. During the think-aloud portion, you will receive a poster-size sticky note to draw out potential ideas. I will not ask questions during this time. You will be doing the majority of the talking during the protocol phase. I may prompt you to keep speaking, but the focus will be on giving you a chance to discuss your process for (re)designing a course.

This interview and think-aloud protocols will occur on the campus of Sullivan University's College of Pharmacy and Health Sciences. During this process, I will be recording the audio for later analysis. Therefore, I will likely schedule a conference room or another typically quiet area to ensure that I capture your thoughts correctly.

After I have conducted all the initial interviews/protocol meetings, I will work through analyzing the data. Part of this analysis will include looking for themes from your interview and think-aloud protocols. I will meet with you again to ensure that I captured your thoughts correctly and share what themes have emerged. This meeting will likely last less than 20 minutes.

**Before agreeing to participate, please consider the risks and potential benefits of taking part in this study.**

Any data gathered during this study will not be shared with your supervisor and will remain confidential. Even still, there are risks to consider. For example, you may feel uncomfortable with an interview question. If that is the case, you are always welcome not to answer that question. Also, being asked to work through a design scenario on the spot may make you feel like you are being assessed. Please know that this is not an evaluative process. There are no right or wrong answers. Rather, I hope to learn about your specific approach to course (re)design.

There is always a slight risk that someone outside of this study may access the research data. I will make every effort to prevent this from happening. Digital data will be stored on an encrypted external storage device. Any physical transcripts will always be kept behind two locks. For example, they will be stored in my locked office in a locked filing cabinet.

Every participant will be entered into a drawing for a \$50 Amazon gift card. Only one card will be given out. I am expecting there to be a total of 10 participants in the study. Participants will have a 1 in 10 chance to win the gift card. The drawing will take place after all the data has been gathered.

**You will not be paid for participating in this study.**



**There is no cost to participate in the study.**

**We will protect your information** and make every effort to keep your personal information confidential, but we cannot guarantee absolute confidentiality. No information that could identify you will be shared in publications about this study.

The audio recordings will be stored on an encrypted device. The recordings will be transcribed by the transcription service TranscribeMe, a reputable and secure vendor. To learn more about TranscribeMe's security features, please visit this site <https://www.transcribeme.com/support/>. A few reasons that I chose TranscribeMe include the fact it is built on the secure platform Amazon Web Services, and their quality control team members have all signed non-disclosure agreements. The audio recordings will not be submitted as part of future publications. The audio recordings will be destroyed after the completion of my dissertation. This will likely be by December 2024.

Your personal information may be shared outside the research study if required by law. We also may need to share your research records with other groups for quality assurance or data analysis. These groups include the Indiana University Institutional Review Board or its designees and state or federal agencies who may need to access the research records (as allowed by law).

**If you have questions about the study or encounter a problem with the research**, contact the researcher, Benjamin Stephens, at 317-531-2093 or [bstephens@sullivan.edu](mailto:bstephens@sullivan.edu).

For questions about your rights as a research participant, to discuss problems, complaints, or concerns about a research study, or to obtain information or to offer input, please contact the IU Human Research Protection Program office at 800-696-2949 or at [irb@iu.edu](mailto:irb@iu.edu).

## Appendix C

### Interview Questions

The goal of this exercise is to capture your approach to designing/redesigning a course. Today's focus is on the design of a course. As much as possible, try to focus on your answers around why you make design choices. Please avoid focusing on specific topics taught within the course. As you know, I may not understand everything about the content that is taught in your courses and that is ok. Today's focus is on why you design a course the way you design a course. If you are uncomfortable with a question, please skip let me know and I will skip that question.

#### Framing Question:

- In broad terms, how do you approach designing a course?

#### Routine maintenance questions:

- When do you know it is time to evaluate or redesign a course you are teaching?
- How often do you change a course based on something you noticed?

#### Formal Review Questions:

- Can you tell me about any formal procedures the PA program has for evaluating courses?
- How often are you asked to review your course by a supervisor?

#### Analysis:

- How do you analyze or learn more about the students coming into your course?
  - What do you want to know about students before they take your course?
- What are some of the resources you rely on to design or redesign a course?
  - If you get stuck on a design choice, which resource do you go to for help?

#### Design:

- How do you set the instructional goals for a course?
- How do you design learning activities to help learners meet the goals of your course?
- How do you assess your students to see if they met the goals of your course?
- What are the key elements that you ALWAYS want to include in your course?

#### Development:

- Do you typically make the learning materials for your course or do you use existing resources?  
(follow up as appropriate)
- What criteria do you use to choose or create learning materials? What makes learning materials effective?

Implement:

- How do you prepare guest lectures that are lecturing in your course?
- How do you design your course for a student who might struggle with the material?

Evaluate:

- Please tell me about how you evaluate a course after it finishes.
  - Do you use any specific models or systems to evaluate your course?
- How are the results of your course evaluation used to improve the course for the next time it is offered?

Needs:

- What support or training can Sullivan University provide to help your course design practice?

## Appendix D

### Think Aloud Protocols

The goal of this exercise is to capture your approach to designing/redesigning courses. Please remember to keep talking as you work through these scenarios. If it is useful, feel free to use the paper and markers provided to help explain your process. The goal is to capture your actual approach to designing a course. You are free to follow any path to explain your process. If it helps, I have included a few questions to consider. Again, please do not feel pressured to address these questions in sequence. You can also skip questions as needed.

Here are a few questions to consider as you walk through these scenarios:

1. What would you want to know about the learners entering this course?
2. How would you select the goals for the course?
3. What are the essential elements of a quality course?
4. How would you acquire the learning materials for the course?
5. What resources would you rely on?
6. How will you decide if the course was successful?

Warm-Up Scenario: How many windows does your house have?

1. Scenario 1: Redesign an existing course:

You have recently been asked to take over [insert the name of a PA course the participant has not taught]. The program director has described the course as ‘needing some serious attention’. Please outline how you would approach making changes to this course.

2. Scenario 2: Creating a new course:

Sullivan’s PA program has expanded. The PA program will now offer a PhD degree. You have been tasked with designing a new course for the new PhD curriculum. The title of this course is ‘The Graduate Project’. This course will be an eleven-week course where students are tasked with conducting a research project. The goal is to prepare future Physician Assistants to practice evidence-based medicine. The activities, resources, instruction, and assessments are up to you. The Program Director has asked that the

summative assessment for this course be a presentation of some sort. Ideally, the students could present in front of a live audience. How would go about designing a new course?

## Appendix E

Taylor

So in the broad terms, how do you approach designing a course?

1. Review the syllabus with a focus on the objectives, assignments, and assessments.
2. Review previous course reports and student evaluations  
(The interview took more a focus on course evaluations because Taylor is the program director)

Do you think the end-of-course reports that are filled out by course coordinators, are those done with a high level of fidelity? (follow-up ? – When is time to evaluate a course? Every time it runs)

- I would think so. We all want to make things better. I trust my people enough to be open to change and criticism.
- The end-of-quarter reports do not always get completed at the end of a quarter.
- For the clinical year it makes sense to do a review of courses at the end of the year. It takes the whole year for every student to go through every rotation.
- The course reports for the clinical year were helpful when I had to take over a course. I already knew what assignments I might change.
- The course report should be done at the end of each course – It is one page, what scored the highest, what scored the lowest, what are the trends, what would you recommend we change.
- Clinical year we are deciding if it should be twice a year or once a year.

How often are you changing that course you're teaching in?

- I do not know how often people look at those (course reports) before they plan the next course. Which is unfortunate because that is the whole point of doing them. We just get bogged down and have to hurry to finish everything. People might just remember what changes they wanted to make.
- Before a course I will look at the syllabus, look at evals, look at a course report, and see what changes need to be made

Anybody in a leadership position at the university level, I guess it would be, are you asked about how courses are being reviewed at any point?

- This is becoming more common. “getting a better process in place for both programs of how often that's done, who's doing it, who's looking at all of it, because I think it has been kind of loose”

Do you see this as valuable to the program?

- Yes – it forces people to have continuous improvement
- You have to look into student feedback and evaluations to really know
- How do people perform in the course and how they perform in high stakes exams throughout the rest of the program

What do you want to know about the students coming into the course before they actually come into the course day one?

- What content in my course have they been taught, and to what degree
- What gaps do I need to fill in their knowledge or reiterate
- Have they been tested on similar material in the past

So, if you're designing a course, and you get stuck, it could be anything, just not sure which textbook to choose or any issue, which resources would you go to for help?

- Go to a colleague first
- I have turned to PAEA resources a lot
- ARC-PA has resources
- Resources created in house by OACA

How would you go about setting the instructional goals for a course?

- We don't often create new courses
- Look at the current course goals as listed in the syllabus
- Course goals should be 3 to 4 high yield things
- Make the course goals broad enough to encompass the actual material in the course, and do they actually go with the outcomes and the objectives?

How do you go about designing learning activities to meet the objectives?

- Figure out how many credit hours are in the course to figure out how much the students have to learn the material. That will probably be the biggest factor in the modalities that are used.
- Is it a course where they are learning clinical skills or is a course where they're gaining medical knowledge
- Medical knowledge – more tests – have you acquired this stuff
- Clinical Skills – still can have test, but more hands on
- Deciding on medical knowledge vs clinical skills helps drive learning activities
- If there is a lot of stuff they need to learn, lecture based is easiest
- Working through a patient encounter might require small groups and talking through it
- Most of the courses are lecture-based format teaching – some courses do not have exams
- Clinical problem solving typically does not have lecture-based format teaching (mostly scenarios to practice being a PA)

Is there an intentional strategy to connect other classes to clinical problem-solving?

- We tailor clinical problem-solving and OSCEs to what is being taught in the quarter
- Students also give presentations in clinical problem-solving. They get better at presenting as they progress through the courses
- We try to always stay aligned with the goal of the course

What make a professor hardy course a professor hardy course?

- I like imparting knowledge that will make students excellent PAs, not just teaching to have them pass a test
- I love applying the real-world aspects of the PA profession
- As a student I like seeing if could immediately apply it, so I include questions at the end of lectures and try to pull it altogether

Do you typically use existing materials or make your own?

- Both – it depends on how many things I have to deliver within that course so how much do I have to reinvent the wheel?
- If it is a product with my name on it, I want it to be good
- Most of the time, I will make my own, but I have adapted learning materials and made them my own

Do you use any certain kind of criteria, or what do you look for that make something a quality learning product?

- Goes back to evaluations. How was the material delivered previously? What can I cover this time that was missed last time
- Concern of death by PowerPoint – try to incorporate things to grab the students’ attention
- 

So it sounds like you are willing to share resources, like slides, what else would you want a guest lecturer to know about your course?

- I encourage others to make slides their own
- Make sure the objectives are covered
- Include a blue print for high stakes assessments students may see in the future
- Point out the library resources
- Erin create a 20 min lecture on how deliver a lecture

How do you design a course for a student who might struggle with the material?

- Might know about previous performance in different courses
- Early communication is key – after an assessment – how are you studying / what are they focused on

Are there any specific models or systems or textbooks on your shelf that you use in the evaluation process?

- When I started we gathered evaluations from other programs to see how they were doing it
- We need to evaluate that we are meeting what the accreditors want us to meet
- ARC-PA has standards on what you need to evaluate to a certain degree

What support or trainings can Sullivan provide to help your course design practice?

- Having a support person for instructional design is helpful
- I think there are a lot of faculty who want to make small changes to their course – they need a point person
- Trainings, a point person for instructional design, and faculty as mentors
- 

Think aloud – redesign

1. Clarify what needs to be addressed
2. Review course evaluations and student surveys
3. Review grades and how they are weighted
4. Look for how students performed on similar topics in other courses.
5. Review instructional strategies, assignments, and assessments.

Think aloud – create a course

1. Clarify the goal of the course
2. Think through what instruction needs to happen
3. Decide on the assessments to use
4. Work through the sequencing of the course (chunking) make sure students are submitting artifacts throughout the course.
5. Plan the details of the summative assessment

Loretta

In broad terms, how do you approach designing a course?

- I take a practical approach.



- Start with the end in mind. “What is needed to get these students to be competent healthcare providers?”
- Make sure all content is relevant and pertinent due to time constraints within the program.
- Work to ensure high-quality and varied instruction/assessments
- Check ARC-PA to ensure the course stays within the specified bounds or what needs to be taught and what students need to know.

When do you know it is time to evaluate or redesign a course that you’re teaching?

- Evaluations at the end of every quarter (I think she means student evaluations)
- Would not change something based on one evaluation – Would look for trends in the data for at least over 2 runnings of the course
- There has to be data to support the decision. Not enough to make a change just because the students or faculty did not like something
- We also look for students scores on assessments
- Review notes that students submitted during assessments

Is there a formal procedure you guys follow? After you evaluate all those data pieces, do you have to turn in a certain report?

- I believe so, but it is my first quarter so I do not know

What things would you have liked to have seen from the previous coordinator as they had reflect on their course?

- I got the evaluations from the past four runnings of the course
- Talked to the previous coordinator about how she saw the course evolving
- Things we do not have are grades, grade information, scores on assessments
- Would have like to see previous grades

What else would you want to know about the students that are coming into your course as you’re designing it?

- Not sure – Our students are unique because it is competitive to get in. We expect some minimal level medical terminology and how the healthcare system works.

What resources do you turn to if you get stuck?

- PAEA has great resources, specifically mentioned the PAEA learning hub
- The learning hub lets me see what other programs are doing and I can pull resources and then modify them for our program

What criteria do you use to identify good resources to incorporate into your course?

- It goes back to the ARC-PA standards – what needs to be covered
- (Focused on OSCEs) I need to make sure the rubric is covering exactly what is being covered by the OSCE
- Some OSCEs include different components that students will not be evaluated on

Once the goal is set, how do you go about designing a learning experience to make sure the students meet that goal?

- Comes from the pre-planning of the course
- Look at the terminology
- This is the first quarter I have to put these learning objectives together
- Uses the pre-planning table on the syllabus to help plan

- “So you make sure you instruct on it and then you also assess it”

How do you go about deciding which assessment would be best after the students go through the learning experience?

- There are two realms of knowledge in PA education – medical knowledge and hands-on technical skills
- Assess ‘hand-on’ or technical skills in a real world setting. Observed by faculty
- Medical knowledge (like bioethics) is suited for multiple-choice assessments

What is the key element that you always want to add into a course you design?

- Make sure that students know I am available for questions
- Provide individualized feedback

Do you typically make the learning materials that you use or do you find existing materials?

- Find materials and make them unique to my situation – draw from various resources

How do you prepare guest lecturers for your course?

- Provide them with learning objectives and make it clear they are expected to cover them

How do you design your course for a student who might be struggling with the material?

- Reach out to individual students to see how I can help and how they are studying
- Review different study strategies with a focus on reading the textbook instead of relying on review materials

Do you have any specific models or textbooks to evaluate your course?

- No – use the internal evaluation process

What supports can Sullivan provide to help support your course design practice?

- Learn more creative ideas on what to do
- “Hey, can you help me think of how to deliver this content in a more exciting way or how to assess this content so we don’t have five multiple-choice tests in one quarter, so to speak”
- Open to the idea of a brainstorming group

Think aloud – redesign

- Talk to the program director to clarify the issues that were noticed in the course.
- Review the student evaluations
- Review historical data such as grades and grade distribution
- Review guest lecturer performance from previous quarters.
- Review student performance on specific course assessments
- Review the sequence of the topics that are taught in the course
- Review the final grade weighting for appropriateness

Think aloud – create a course

- Consult the ARC-PA standards
- Provide student guidelines for summative assignment
- Work on the summative assignment (assessment)
- Identify the knowledge gaps that need to be addressed for lecture
- Sequence the project and build in assignments that require students to submit certain artifacts throughout the quarter.

- Set the weighting of the final grade.

Carrie

In broad terms, how do you approach designing a course?

- Create course objectives, and learning objectives. Course objectives (four to five general objectives) then all learning objectives fall under the course objective
- Devise lectures from learning objectives
- Locate a textbook to help develop objectives
- Design a syllabus with these things and come up with what parts of the book are relevant to the learning objectives.
- Develop quizzes and exams

When do you know it's time to evaluate or redesign a course that you've taught?

- I look at student feedback, student performance, where does my course fit into the curriculum, and where are there overlaps or redundancies.
- I will see if we need to adjust topics based on that
- I will also see if there was a change to our blue print
- I will also see if my topics are consistently a weakness on the PANCE assessment
- The accrediting body posts a blueprint of the different topics that need to be covered

How often are you changing a course based on something you noticed?

- Every year. I'm always trying to improve, but not at the level where I would have to go through the curriculum committee.
- When I first started I was given PowerPoints and learning objectives. I used what I had because I had to teach a lot of content. I was trying to wrap my mind around everything.
- I have continuously adjusted and changed things according to my style, my needs, what student feedback is
- If students are confused about a topic and that come through on an assessment I try to think of how I can teach it differently or try to get the points across better.
- One comment on an evaluation does not prompt to change the entire course
- I have to be careful because I am a pleaser – I need to look at several different data points (performance, feedback) I will also talk to my colleagues to see what they think

Does the PA program have any kind of official course review, anything that you need to do at the end of a quarter?

- We are graded on a Likert scale on a smattering of topics.
- If there was a drop we go back and evaluate ourselves
- I will also informally poll students to see what they liked.
- These are the student evaluations
- They have it setup nice because they have last year's your know all in one sheet. We get comparisons from year to year.

Is there any expectation from your supervisor, from any level of leadership that you review the course every time or is that just something you do?

- I know we are expected to look at the course reports.
- I think the course reports have an area where you are supposed to say what you will change and include evidence that supports the change.

- I want to do better. “And so I don’t think anyone expects me to probably do as much as I do”
- I do not always complete the official form. I should document better. The changes are happening though.

So are there any things that you would want to know about the students coming into your class before they’re actually in your class?

- I know a lot about the students because I have been on admissions
- I would want to know what prerequisites they have taken. Have they had physiology or organic chemistry? I would want to know their level
- I would want to know where my course fit in with the larger curriculum. So is this for pharmacy or PA? What is the ultimate goal. I might teach PharmD and PA students slightly differently.

If you do get stuck on designing a course or want to know what to do, what resources do you typically draw on?

- Definitely textbooks
- I would go to the internet and see how other people set up their syllabi
- I would talk to colleagues
- I would check the blueprint for the program – make sure that I am covering everything that I supposed to cover
- We think that was the PAEA blueprint

How would you set the goals at the course level? What do you base that off of?

- Where does my course fit into being a PA. Course goals are like be able to apply physiological processes to disease states of a patient. They are global in nature.

So how do you go about approaching the design of the learning activity itself?

- It depends on the program and what the expectations for the instruction are.
- A lot of time we do lecture, which I try to get away from because they have to sit there a lot
- There is some that is sort of driven sometimes by the content

So you have your goal set, and then how would you go about making sure that you’re meeting that goal with the actual learning activity?

- Certain learning objectives fall under a larger goal. I usually have five or six learning objectives that are covered in an hour or less.
- I try to incorporate things like creating a venn diagram or give them a quiz after class or before class

Is it typically just like multiple-choice on examsoft for assessment time?

- Yes, because that is the way the board exam is.
- We have benefitted from in-house trainings on how to write MC questions.
- I also include quizzes that they can take on their own time – they have unlimited opportunities to go back into these quizzes. My goal is to have one quiz question per learning objective so they can see how they might be assessed later.

What make a Dr. Massey class, a Dr. Massey class that you will always include? Are there things like that?

- Always include quizzes.
- My structure is all about learning objectives, it has not always been that way.

- I use them to identify which slides cover which objective and know that at least one question will be coming from certain slides. How can I prove to her that I know what I need to know?
- I am consistent in how I ask questions

Do you typically go out and find resources or do you make your own resources?

- Both
- Sometimes I will draw my own figures because it was not covered in the textbook
- I have developed bingo and jeopardy on my own

And then as you're either making it or finding it, what do you look for? What makes a learning material effective?

- Needs to be a small amount of time due to short attention spans (TikTok). We need to break it up so we do not lose them.

Hypothetical – What do you want a new guest lecturer to know about the course?

- I would show them the learning objectives
- this is how I do it, this is what they are used to
- Show them what was done, but give them autonomy
- Let them know the exam questions come from the learning objectives

How do you plan for a student who might be struggling with the material?

- The quizzes are helpful for those students, safe way to test themselves
- If they are lost they can come see me, meet with them, get them a tutor
- We remediate any failed exams
- Students will email me questions and I respond in a timely fashion.
- They have a lot going on and “they need to know so that they can put something to bed before they move on to something else”
- I will use images, flowcharts, pictures from the book – some people like text some people like images – I repeat tough concepts

Do you go through any kind of formal process to evaluate the course when it's all said and done?

- No. I am still learning as I go
- “Like I came here and I got these learning objectives, and I just started I just went with it. And now I feel like I've designed something after all this time, but I had to do it piece by piece”

What can the college, the university do to help you with your course design practice?

- The things that has helped me the most have been the item analysis things (psychometric work-sheets)
- I love the data-driven way of look at psychometrics
- “I guess just more of that in areas where someone who knows more about education than I do would be able to say, “Oh we don't have this resource. You know I don't know what I don't know”
- I love data and knowing the reason for what I am doing

Think aloud – redesign

- Ask more about the problems of the course. Look at the data that suggests a problem.
- Asks peers what has been done or tried before
- Look to other PA programs to find resources and support

- Use the accreditation standards (she said “blueprint”) to see if the course fits in with those standards
- “Sort of get the atmosphere and the landscape of why we’re teaching this course in the first place”
- Locate a text or online resource
- Look for other resources / consider practical needs (this example – will we need a cadaver lab)
- Analyze the students coming in. Have they been taught anatomy before? How will this be different? How do we make it applicable?
- Develop course goals and objectives
- Seek out peers with clinical experience to help choose the most important topics due to time constraints

Think aloud – create a course

- Consider the context and other courses the students will be taking the course. She decided to extend this course past one quarter. Secure the time for the students
- Started building towards the creation of the final presentation. “the whole course could be the development of a presentation”
- Allow students to pursue their own interests / choose their own topics
- Sequencing activities to make sure students are ready to present (divide the 11 weeks into different pieces)
- (remembered something) identify artifacts that students can turn in
- Identify topics that would require instruction (interpreting graphs)

Dolly

In Broad terms, how you approach designing a course?

- Access the previous blackboard courses and look at the lectures and how the lectures were scheduled.
- Decide which topics I am comfortable with teaching and which lectures will need an outside expert.
- Look at the national org PAEA – look at the EOR exam topics that need to be met
- Schedule outside lecturers
- Use AccessMedicine to develop lectures
- Add topics that may be relevant to the students future PA practice
- Create course assessments covering topics covered in the lectures- Review previous assessments and use questions with quality psychometrics, fill in as needed
- Consider ways to incorporate case studies to help connect content to what they will see in the clinical year.
- At the end of the course, look at student evaluations to evaluate how things went.
- The purpose of this course is to get students ready for the clinical year surgery rotation. We have courses that match up with clinical experiences.
- I think about how the students can continue being successful when they go to the clinical year.
- I remember there is a way you may want to answer an exam question and then there is a way that you want to treat a patient.
- I want to provide a good basis of knowledge to help them pass the end of rotation exams and be successful in the clinical year. Revert back to the knowledge while they focus on becoming a PA
- Most faculty members are in the didactic and the clinical year. My back is surgery so I am over the didactic and the clinical surgery courses.

So when do you know it's time to evaluate or redesign a course that you're teaching?

- The biggest feedback for me is the student evaluations – that is helpful
- Look at Examsoft and psychometric data
- If students did poorly on a few questions I will go back and ask why they did not test well – was it something that they did not grasp or was there a problem with the question
- When I am going to make a new course, I will look back a year and see what could be made better. I will also look at the examsoft data

As far as a formal review process, it is part of your job that you have to fill out a certain form or anything at the end of a course?

- Not that I am aware of.

Follow-up: Is there any deliverable that is expected to go to the program director? Is there a Word Document or is there any kind of thing that you need to deliver?

- I guess the only thing not course specific, but I guess me specific is the yearly evaluations
- There is nothing course specific

What would you want to know about the students that are coming into your course as you're designing it?

- I just always assume the student doesn't know anything about what I'm teaching
- I will know where they are in the year and which courses they have had. Still if there is something that they will need to know in my lecture I will review it.
- We should know what a student has grasped from the courses before.
- One things that goes into play with surgery is anatomy. They have anatomy in the summer and Principles of surgery is in the spring. Hopefully we expand on what was taught in the summer. I will teach it like they are seeing it for the first time

So if you get stuck on a design choice, like which lectures to include or which lectures to leave off, which resources do you go to for help?

- Erin, our Director of Didactic Education. We have a meeting every quarter.
- We always look to cut down on redundant information.
- Erin will help make sure we are not repeating topics
- The most resources I use.... I use my peers, what has helped in the past
- I try to use concrete data, I like will look at the psychometrics. I use the spreadsheet (in house job aid) after every assessment
- Erin will meet with individual faculty to review big changes – Sometimes renaming the lecture so it matches what is on the student calendar
- I have not gotten brave enough to make big changes to a course

What level of ownership do you feel of your course?

- In a course where I am doing the majority of the teaching I feel a lot of ownership.
- Other courses I feel like a behind the scene person who's making sure the guest lecturers are set up and know what the objectives are from the syllabus – making sure they cover will match with the assessment
- I do review guest lecturer material so I feel prepared to assess students on that material

Are there any other resources that you pull from to set the instructional goals?

- I will check NCCPA, that's who give the board certified exam.

- I will make sure I am covering the EOR topics lists – most of them line up

How do you go about designing the learning activities to help learners meet the goals of the course?

- I will always do a lecture and break it up with questions to make sure they are paying attention. It helps them see how they might be assessed on the material
- We will draw pictures for anatomy.
- We will work through the disease state
- Before an exam we will do a review game. Jeopardy seems pretty easy to make and do
- I am always trying to figure out something more interesting than giving a lecture. It's a work in progress

Is Examsoft your typical go-to for assessments (i.e., multiple choice, fill-in-the-blank questions)?

- We do have a practical assessment for surgical instruments. They are assessed with real instruments they will see on their surgical rotation. They need to recall the instrument name and what it is used for.
- They go to each station and recall it from memory

What are the key elements that you are always going to include in a course? Are there any special items that you are always going to include?

- Basic things – lectures, assessments, review, games
- I like to make sure there is a clinical vignette case study that we go through in class
- Not for all of the topics, but at least a few topics

Do you typically make your own learning materials or go and find existing materials?

- I always go and find materials.
- If there is something left off a topic list I think is important, I will create my own materials, but I will still go to the AccessMedicine book to expound on the topic
- I always want to make sure the topics I teach are current
- I do recognize that that students need to know some information to answer a multiple choice question, but in practice it may be something different

How do you prepare guest lecturers to come into your course?

- If they have already taught before I will make sure they have the current objectives and know what they need to teach.
- New lecturers will be given access to a 'how to lecture' video created by Erin to let them know how we would like them to do things

You are aware student may have forgotten previous information. Are there any other way's that you design your course for a student who might be struggling with the course material?

- Not that I can really think of. I do try to incorporate different learning styles. I do include pictures and even videos in my slides
- They can always come to me to talk about their struggles. We also have tutors that they can connect with

Are there any specific models that you use to evaluate a course?

- I do not think so

What can Sullivan do to help support your course design practice?



- Modalities are available for active learning to incorporate in the classroom to just keep students engaged in the material
- A platform to use like a gaming-type system
- Find a way to avoid boring games like jeopardy or have some lecturer drone on and on
- It is easier when I am excited about the topics vs when I am trying to learn more about it as I am teaching it

Think aloud – redesign

- Review the previous syllabus
- Identify the objectives and how they were assessed
- Identify the number of quizzes and exams
- Check the national org (PANCE women’s health section, PAEA EOR women’s health topic) to make sure all of the topics are covered
- Review previous instructional strategies
- Sequence lecture in a logical order (make sure that kind of has a good flow)
- Review prior student evaluations
- Identify and schedule the lecturers
- Review the previous assignments
- Check the assessments for quality using psychometrics

Think aloud – create a course

- Check if other programs have done something like this, look for something that has already been successful
- Define a goal for the course – prepare future PAs to use evidence based medicine
- Set criteria for deciding if the course will be successful
- Allow the students to choose a topic that interests them or based experiences from their clinical site
- Identify resources for the course (online resources, books)
- Decide on instructional strategy (lecture vs reading assignments)
- Provide students with low stakes practice
- Direct instruction on perceived areas of need – (How to give a lecture) “And so having them have some concrete thing to look back on as they’re preparing for their presentation at the end” – include a rubric

Patsy

In Broad terms, how you approach designing a course?

1. Go to the national resources to see the topics a course needs to cover – NCCPA blueprint
2. Also cover content that students will see in their PA practice (Start with topics)
3. Begin to develop instructional materials that will cover that content (death by PowerPoint)
4. Look for hands-on practice opportunities to ‘drill home’ topics / existing supplementary materials
5. Sequence instruction “Okay, you have to understand why it’s a problem for the body, what your patient’s going to come in complaining of, what you need to look for when you’re doing your exam, how are you going to figure out if that’s truly what they have, and then what are you going to do about it?”

When do you know it’s time to evaluate or redesign a course that you are teaching?

- If I am boring myself
- I place a lot of weight on the student evaluations. Sometimes I take that with a grain of salt because they don’t know what they’re supposed to know

- I look at assessment score. I like at particular assessment scores within a course and across the board as well. We like to align exams: end of didactic year exam, didactic comprehensive exam, PACKRAT, end of rotation exams, PACKRAT 2 (i.e. did they still know endocrinology)

How often do you look at these assessments?

- Bi-annually – I want to look at them right before I'm getting ready to teach the course again

As far as the reviews go, the PA program, is there any formal process that you're asked to complete at the end of the course?

- Technically, we are asked to complete course reports at the end of every quarter after we have all of the evaluations back
- If we do not meet the stated benchmark we will look at what needs to be changed
- When possible, I look at these scores longitudinally to hopefully see they increase from year to year.
- I will use that information to decide if we need to change a coordinator or invite particular lecturers back
- The benchmarking bar is typically based on the student evaluation scores

How often do you coordinate a course?

- Every quarter – with a two week break between courses

So if you're going to design a course, what would you want to know about the students before they came in to take your course?

- I need to know their knowledge base on the topic that I'm getting ready to teach. Have they seen it before? Do they know what I'm talking about? Or how low do I need to drill down to make sure that they understand what I'm saying?

And if you were designing a course and you get stuck on a decision, which resources would draw on?

- Colleagues that more experience than I do or have experience with the course
- PAEA, our education association. They have a big forum where you can brainstorm with other PA faculty members
- But really, that's just more colleague feedback.

How would you end up going to set the instructional goals for a course?

- Those were handed down to me long ago. And when I first started it was said "These are set. Don't change these."
- Those came from our accrediting body ARC-PA
- It's a good and bad thing about ARC-PA is they're just painfully vague. At bare minimum, this is what you have to do, but they way to do it is up to you.

How do you develop those learning activities to help learners meet those goals?

- It takes several years of teaching it to go "This could be better. What could I do to make this more interesting?"
- I like to be hands-on so I look to build in opportunities for students to get up and move
- Described a charades-type learning game – harder with more students

Does the increased cohort size limit the activities you can plan?

- Yeah, it is harder

- 65 students is a lot different than 40 students. There are things that you want to do, but there's just not enough time especially with being an accelerated program

How do you go about assessing if the students met the goals? Is it typically multiple choice questions on an exam?

- Yes – fortunately and unfortunately

What makes a Dr. Chalmers course a Dr. Chalmers course? What something you're always going to have?

- Patient stories
- One of my goals is to humanize medicine, I tell the students they are treating a patient not a disease

And then as far as developing the materials, do you typically make your own learning materials or go out and find existing materials?

- I started out by using pre-existing slides. I make my own powerpoints because that is easier to present
- I do use resources like books and qualified websites

What criteria do you look for when choosing quality learning material?

- Any textbook will work
- Site supported by other medical professionals
- I like MedLine, UpToDate, Merck Manual, and other trusted sources in the med field

Do you typically have guest lecturers?

- One of the goals is to have most lectures covered by full-time faculty.
- Outside lecturers are great for complex topics
- If we can teach it, we know what a PA needs to know versus MDs or MPs
- We all take different ladders to do the same job

What else do you want the guest lecturers to know before they lecture?

- I created a 10 minute video to help guest lecturers get prepared.
  - Here is where the students are in the curriculum
  - Here is what dictates what we need to teach NCCPA
- I aim for consistency across all lectures, even if the lecture is from an outside lecturer
- I do not want to micromanage – however one lecturer had mostly pictures on his slide and this was hard for students to study
- Students are so pump and dump, pump it in my brain, dump it out, move on to the next topic
- I can't be too forceful with guest lecturers (I want them back)

So would you say one of your concerns for the students is that feel of being overwhelmed?

- Oh yeah. Always. I say PA school is like med school in two years instead of four
- We are plowing through material
- Students are frequently overwhelmed
- Most of the students are type A kids that are competing with each other. I try to tell them Bs get degrees. My bigger hope is that they will save lives and not kill people.

So when you're designing a course, are there any steps you take to plan for a student who might struggle with the material?

- I would love to say yes. When I'm designing the course, no. I think is due to the accelerated nature of the program.
- I will meet with students if they are struggling

When you're evaluating a course annually or biannually, are there any specific models, systems, like books on the shelf that you use for course evaluation?

- No – that would be a good resource though

What can the college do to better support your course design practice?

- I was able to complete my doctorate in PA education
- I should use the ADDIE model and things like that
- Before getting my doctorate, it was a lot of sink-or-swim
- Maybe a HERD session on course design – I love Sarah Raake's basic practice things
- Daniel sends out good articles, but I do not have time to read them
- I like that new faculty go through the Teaching and Learning Curriculum
- I really like colleague feedback. So just sitting down, I love when we're so siloed between PharmD and PA. Share success stories
- Continue to go to conferences and different workshops

So if someone were to say this is a best practice what would make you buy into that?

- Experience – That does not need to be specific PA Experience

Think aloud – redesign

- Review what has already been taught in the course – topics and sequencing – look at course syllabi
- Look at the course evaluations
- Compare the findings to NCCPA and ARC-PA standards
- Consider what else the students will be learning in other courses and rearrange topics in her course to align with other courses. Also, willing to move difficult topics.
- Talk to peers (previous coordinators)
- Arrange guest lecturers as needed
- Identify learning projects / activities
- Nitty gritty – final grade weight, reviewing the textbook,
- Create and reflect on new syllabus, is everything covered
- Run the course and see how it goes
- Go to the PAEA collective and figure out what other programs are doing

Think aloud – create a course

- Reflect on my experience as a PhD student. Pull a similar course's syllabus.
- Clearly identify what is expected at the end of the course (looked for publication opportunities)
- Consider how the course fits into the program as a whole. – Would want topics to be aligned across all of the courses
- Identify what will differentiate this course from previous courses the student has taken
- Identify knowledge gaps (interpret literature) and create lessons to address the gaps
- Look for ways to build foundational knowledge and then build on top of it
- Look for quality learning materials
- Collaborate with peers
- Evaluate the course using the student evaluations and the number of course failures

Crystal

Opening question

- Look at the syllabus to review the lecture layout.
- Pull from lots of resources to identify topics that should be taught: Looked at PAEA's (national org) topic list and the PANCE blue print to identify topics.
- Create a new topic outline and instructional objectives – pulled from old objectives if appropriate
- “Combine topics and make it flow nicely just to make it really organized”
- Programmatic level - Try to improve the course – identify topics that were not taught in the curriculum

When do you know that it's time to evaluate or even redesign the course?

- I noticed there was a deficit in the clinical year course so I added material to my didactic year course.
- I think it is important to be intentional about reviewing student feedback at the end of every quarter. It is also important to review keyword feedback from the EORs of the send year students. We can use keyword feedback to find deficits and make minor changes as needed. I review the keyword feedback annually.
- I just finished my second quarter or running that course. I have already made a lot of changes. I know I made a lot of changes to my exam questions. I love at the feedback after each assessment and examsoft and decide if each question is fair.
- Sometimes they are fair, but they just really missed the boat – the need a reminder.
- I also look back at the lecture to see if anything needs to be changed.
- We can use a lot of data to decide which changes need to be made.
- One example of a question I that triggered was a review was about birth control being contraindicated for people with blood clots. Lots of people missed it. The question was solid so I had to revisit the material with the students. I also talked to the lecturer who gave the lecture saying we need to drive this home.

Is there any kind of formal review process? For example, are you prompted by a supervisor to review your course at any point?

- Not so much
- I will get contacted by Erin that syllabus are due. That is a trigger to start reviewing / planning the course. Most of us know the timeline and know when to start reviewing courses.
- We need to book all of our lecturers, which is honestly one of the more difficult components. It is hard to try to get people who work full-time to come lecture for us. I got lucky this year with my lecturer's schedule.

What, if anything, do you want to know about those students who would be coming into Women's Health?

- I have never really reflected on that
- I know what I experienced in undergrad (i.e. female anatomy, anatomy, physiology) I also took nursing classes so I have a bit of a different background
- I do try to put on my student glasses to reflect on what they would know coming in
- I rearranged topics so students do not need much knowledge about women's health when they come into the course.

- We do have English majors coming in who have taken core courses. They many not have a lot of experience though.
- It would be neat to do a poll. Ex ?) How comfortable are you with the topic of women's health? We did have people who worked in women's health as scribes or medical assistants, or patient advocacy programs. These students can provide insights.
- I could ask what are you excited about, how do you feel about the topic, what topics do you have a hard time understanding
- We could make sure they have a really strong foundation.

How do you design the learning activities for your students once you've set the goals? How would you approach making the learning materials, like slides, anything that would help them learn once the goals have been set?

- For my PowerPoint I take my instructional objectives and use those as an outline for my PowerPoint.
- I also meet with my guest lecturers to give them instructional objectives, dates on a calendar, topics, and corresponding chapters from the textbook.
- I also gave them access to AccessMedicine. They could get links from the book and make their own outlines.
- We try to have the material come out of (current?) which is the textbook students use.
- I may need to change the book to something newer given changes around abortion.
- Changing the book is kind of overwhelming to think about.

Assessing the topics that have been taught, most examsoft assessments?

- Yes – We have four exams in women's health (2 Gyn, 2 OB)
- I did incorporate a couple of assignments – A reflection on the sexual assault lecture – for one thing I wanted to get their feedback on this lecture – see what was in their heads
- I wanted to see how they would use vicarious resilience during their clinical year
- The rubric for the assignment was pretty generous
- Assignment #2 was a self-study. I updated an old slideshow about racial inequity in women's health created by a former faculty member. They reviewed it on their own and then had to write about 'what did you learn from this? how will it impact how you treat patients and advocate for your patients'
- Assessments – women's health is notoriously very difficult. I wrote hard exams. Our highest number of failures on one exam was 8.
- I wanted assignemnts that would make students think through important concepts, but I also wanted to give them a chance to boost their grades.

So if you were to take another class, so to say, what are the key elements that you would always include in the course? (confusion) Some of the themes I am hearing include sequencing, data-based decisions, caution before making wholesale changes to a course.

- That could cause ripple effects. Now that I have a solid outline I will make minor tweaks.
- This year I made a huge tweak by adding a three-hour lecture for sexual assault.
- Making the course organized and streamlined is helpful
- As a student I struggled with disorganized courses or feeling like "we are all over the place"
- Organizing clinical problem-solving was difficult – I had to manage and rewrite cases. For CPS, I also had to work with and try to schedule 9 facilitators.
- Step one: get everyone into groups and then schedule the rooms with an AA.

- Then I thought about the cases. They all had access so they could plagiarize. I knew I needed fresh ones, I thought about what has not been covered in OSCEs, PBL, and what cases could they work through at this point in the curriculum.
- I came up with three cases that they should be able to do but had not been done yet
- I tried to find topics that were interesting and relevant and items that ‘cannot be missed’. The stuff that could kill a patient or destroy a limb or sight

Do you typically want to make that (learning materials) yourself or do you go find existing materials?

- So both actually
- I have looked through cases created by other faculty to see what might work, I chose a couple to make modification to
- A peer stopped by my office and asked what I was working on when I was making the cases, she said she would love to help.
- But I am type A and what to develop a case myself. I developed a template that was super user friendly for our guest facilitators
- Once I had the template my peer was able to help me out
- I included details into the cases that I have seen during my clinical work
- Ben: it sounds like realistic experience is important Crystal: also evidence based – I specifically like to use up-to-date

Are there other things that would make a learning material come across as effective to you?

- Sometime up-to-date can be overwhelming. I do really like the Merck Manual. It is like the readers digest version of up-to-date. Merck Manual has one chapter on clinical manifestations of glaucoma versus treatment of glaucoma.

It sounds like you provide guest lecturers with a list of instructional objectives and chapters from the books to reference. Is there anything else that you want them to know about your course?

- Yes – the syllabus
- I filled them on adding the sexual assault lecture (notify about big changes to the course)
- Erin created a ‘how to tutorial’ for our guest lecturers
- I will share how to pick which objectives warrant a slide, basically I will share stuff I learned at the PAEA new faculty 101 shop. For example, only 6 bullet points per slide – do not overload your slides
- I did have only lecturer kind of flop. She thought she would love lecturing but she did not. The students were not happy. The lecturer left. Luckily a peer was able to pre-record a lecture.
- Patsy’s PowerPoint is great for onboarding guest lecturers

So within the planning and the design of the course, are there any steps that you take for a student who might struggle with the material?

- I’ve had a lot of students struggle in women’s health because it is a difficult class.
- It is hard where it fall in the curriculum. We talk about cardiomyopathy but they have not had cardio yet.
- Women’s health is completely different. It is like pediatrics.
- We do have a remediation specialist who can review commonly missed concepts
- I was a tutor when I was a student. It is not normally the content that is hard for students. They are all smart.
- The issue is typically time management. It is all about how are they going to balance their time to study for all of these exams.
- If they do have content questions, I have an open door policy. Come find me.

- I hear students express that they are feeling overwhelmed
- The merck manual is a really great way to simplify concepts
- The Merck manual will break down the pathophysiology > clinical manifestations > changes in the patient > diagnosis of the disease > How to treat it > sometime the prognosis

Are there any other examples I guess you could call them models or even systems that us you to evaluate?  
Do you have like a book on your shelf, for example, of course evaluation?

- No
- I really rely on student evaluations
- I want to know what is really bad so I can change it
- Last year my course evaluation was not completed due to an error in sending it out
- I'm excited to get a course evaluation back about my entire course
- I value student input a lot.
- I do know that you cannot please everybody
- I just did a qualitative research workshop offered by PAEA. I think I can use those skills to help break down student evaluations

What can the college do to support your course design practice?

- I think the pre-course survey would be really helpful, but I do not want to over-survey them.
- At the beginning we could ask students what they know and what they do not know. The end at the end of the course the students could reflect on 'Do you feel like you know this course fulfilled the concepts that you were concerned about previously?'

Think aloud – redesign

- Identify the difficult problem – in this case ensuring there are enough cases for students to work through.
- Ensure that all of the previous facilitators can still help in the course.
- Create a schedule to communicate with facilitators
- Look at the previous syllabus
- Set up authentic assignments that prepare students for clinical year "I tend to think about their clinical needs a lot, right? What's really going to help them get ready for this year."

Think aloud – create a course

- Setup the summative assessment
- Analyze the learners' background... have they already been to PA school
- Analyze resources – identified where similar instruction and assessment have taken place within the program
- Try to pull in personal interests or experiences from clinical sites
- Identify assignments / formative assessments which include opportunities for peer to peer support
- Define a summative assessment (considered publication opportunities)
- Consider pacing/sequencing of the topics in the 11-week course

Tammy

In broad terms, how do you approach designing a course?

1. Look for ways to ensure hands-on learning and opportunities to work in small groups.
2. Rely on the accreditation standards to see what needs to be taught –
3. "Present it once before they go the clinical year" – end in mind



4. Make sure to assess what is on the PANCE, and ensure students have at least heard relevant practical information
5. Teach and assess them on an appropriate level before clinical year.
6. Check in with previous course coordinators and examine previous course evaluations.
  - a. Early on in her career she worked a more experienced peer as a ‘design buddy’

When do you know it’s time to evaluate or redesign a course that you were teaching?

- I look at the course reviews from students and then I also look at my grades.
- If I have a course that is not differentiating fairly well it may be a concern.
- In the last 3 years I have given one B in patient history and physical exam.
- These exams are things students needs to know, so we double hit it with small groups, check-offs, and then we also hit with an OSCE. We give them multiple chances to learn it.
- Everyone is getting As, but I need to teach them things. I have also seen data from standardized testing (PACKRAT, EORs, PANCE) – physical exam skills have been a lower skill. This is from the PANCE and other assessments. I may need to include clinical scenarios for my exams, not just hands-on exams.
- I look at course reviews and grades at the end of every quarter. One course I teach is a three course series so I do not want to make changes midyear. I will update the course before the next cohort. For a one-time course (pediatrics) I will evaluate that at the end of the course.

And then, how often are you making course changes to pediatrics or the patient case series?

- I find myself making more changes to the patient care series. Each year I change a little bit. The skeleton has been altered a little bit. For pediatrics, I have changed lecturers, but it is still for an exam.

Is there a formal evaluation process that you need to complete and submit to a supervisor?

- We do course eval reports. It mainly just takes the big picture from our student evaluations.
- There has not been anything like ‘if you fall below a certain score’ you will be hounded.
- I am not consistently completing the formal course report, but I do look at the student evaluations and everything. I will also make changes if I am unhappy with how it went.

What are the challenges that make it hard to the ‘25%’ of your job that you have to push aside to do other tasks?

- “I probably should make myself not as available for students.” I lose time answering student questions.
- My course takes a lot of printing, organizing, and communication with community faculty that come in.
- I do not want to make changes to add more work to a course, but I do think the micro-adjustments have helped.
- I have three courses: clinical pediatrics, didactic pediatrics, physical exam, and I’m chair of the scholarship committee. I’m trying to do four things.

So, even before the students come into your class, into your course, what would you want to know about the students coming in?

- For patient history and physical exam I want to know how much time they have spent interacting with patients. For students with less experience, I may have to keep my eye on them and give them supplemental opportunities.
- For pediatrics, there is not much I need to know about individual students.

What resources would you go to for help if you get stuck on a (design) decision?

- I would go to my supervisor. Didactic = Erin; Clinical = Melissa

Is the advice similar or different?

- A little different based on the student expectations for that time in the program.
- The clinical year is consistent throughout all of the courses. EOR exams, surveys, grading schemes are similar across clinical year courses.
- There's a lot of things that I don't have a lot of control over for the clinical course. In the didactic year the didactic coordinator is open to any changes.

How would you go about setting goals for a course? (I believe you have already mentioned PAEA)

- I think it's PAEA, yes
- For learning outcomes and standards I would go to PAEA. I will refresh myself with the PANCE blueprint just to make sure I'm hitting on everything that they want or may assess on.

How do you go about making the learning activities for your students to meet the goals that you've set?

- I will have learning objectives for each small group. I will provide them with what is expected for each small group.
- For the problem-based learning course, I have also decided to develop and incorporate rubrics to make sure that students were meeting the stated outcomes.
- One goal is to increase their information literacy so that is something I added to the rubric. Were they able to find good sources quick and answer correctly. Rubrics and clear objectives
- The rubrics assess students individually. I created an Excel sheet for the facilitators to rate the student on each aspect of the rubric. We have three to four PBLs each quarter.

What made you think to do a rubric like that?

- We found students were not participating. They would eat snack or be distracted by an upcoming test. Now we are down to one computer per group. We will see a decrease in student participation towards the end of the quarter.

What are the key elements that you want to include in your courses? What makes a course a Professor Creason course?

- I like to lecture in my courses. It could be a control problem.
- I like to give the majority of the lecture because I know what I want to present.
- I have created good assessments since I have been here and my goal is to have the exams still perform well.
- If it is a course I can't have much presence in, I have less desire to take that course. For example, I have no desire to take over psychosocial medicine because I am not comfortable lecturing or facilitating small groups regarding that topic. People would not know that it was a Professor Creason course – they would have no idea who the coordinator was.
- I like to have a dominating presence in the course.

When it is time to start making things, do you typically pull existing resources or make your own? Creating things like learning materials like lecture slides or handouts, anything that you can learn.

- I will reuse the PowerPoints that I have made, but I will make sure all of the information is still up to date using up-to-date and accessible medicine.
- For the most part I make my own. I do have some material from previous courses that I adopt to make it my own. Even if I borrow resources I will put my own spin on it.

What would you want a guest lecturer to know about your course?

- I send them the topics.

- I have sent slides that I have used in the past.
- I have sent learning objectives.
- I will also send a goal, not necessarily listed in my syllabi, but I told him, “I’ve lectured on this in the past. It’s very much just knowledge-based, not experience-based. So feel free to adapt my lecture, make changes, discard, or add anything you find clinically important.”

You felt more comfortable with someone (else lecturing) who’s worked in that environment because you just have a different background?

- Mm-hmmm. There are a couple of residencies in neo-natal medicine so I did not want to do the students a disservice
- “Anytime you can relate to someone who works that clinically, I think it’s just a better learning experience for the students.”

As you’re designing a course, how do you plan or build in a plan for a student who might struggle with the material?

- I don’t think I’ve addressed that yet.
- I am of the mindset that I am creating a course for a student who wants to be a PA
- I will fall back onto our remediation specialist for help.
- If students cannot maintain the passing score of 74.5 maybe the medical field is not for them.
- I do not incorporate it into my course because I know I have the remediation specialist and tutors to help.

Are there any formal models or processes like textbooks of course evaluation that you rely on?

- I do not.

What can Sullivan do to provide additional supports for your design practice?

- I was thankful for the Teaching and Learning curriculum. It helped me break down bloom’s when I am assessing and building learning objectives. I know to keep an objective down to one verb.
- It helped me build my teaching portfolio, my teaching philosophy. It may have been nice if there was a TLC focused on PAs
- “We learn from the people we work with, if those people didn’t have any formal training with courses creatin, then I guess we’re just kind of repeating.”
- We could break the mold by new people completing online modules. New faculty could also do the PAEA new faculty jumpstart. Sullivan could cover the faculty jumpstart.
- We do go a CME – continued medical education (our allowance for training). This faculty jumpstart would make us more comfortable with having a course.

What would say would make the TLC more practical for a PA educator?

- The program was created for Pharmacy Residents. They all get mentors. I got a pharmacy educator mentor. I liked having a mentor with more of education / scholarship background.
- I would have like more flexibility. I would have liked to follow my own timeline.
- I was trying to run my first class solo while doing projects for the TLC.
- At the time we were doing our first mapping competency.
- Less strict deadlines, more like in your first year we would like to see you complete these things. Avoiding set specific due dates for the TLC tasks.

Think aloud – redesign

- Check-in with the program director about what issues are occurring in the course.
- Look at the existing syllabus with a focus on

- Amount of lectures
- Content that needs to be covered
- Exams that need to be covered
- Schedule guest lecturers as needed / ensure every lecture is covered
- Review past exam performance and adjust as needed
- Look at previous student evaluations
- Look for ways to avoid ‘death by powerpoint’ / try to incorporate active learning

Think aloud – create a course

1. Set an overall goal for the course
2. Analyze resources – ask a peer for a starting point
3. Create the summative project (assessment – considered publication opportunities)
4. Set deadlines to turn in key artifacts
5. Decide on appropriate instruction for students to create each submission.

Faith

So in broad terms, how do you approach designing a course?

1. Start with the end in mind / what is my goal? Why am I doing this?
2. Review previous evaluation data (Student exit survey)
3. Went to ARC-PA and AAPA to help set the student objectives
4. Looked for existing instructional resources (AAPA)
5. Worked with peers to develop course “And so teamwork always is an appropriate way to address course development and looking at your internal resources.”
6. Develop an appropriate assignment (provided the ‘how to get licensed’ in different states example) – expressed an interest in personalized learning

How do you go about coming up with the learning materials for it (the course)?

- I will check to see what lectures they have received in their didactic year
- Students have a better understanding of schema of concepts (like coding) after they have been on rotations or in the real world. I will bring in these real world connections.
- I looked at AAPA, NCCPA, PAEA to see if they had existing materials.
- For the billing lesson I wanted worksheets that would simulate coding for PAs in the real world. I would then be able to ‘audit’ them like we do in practice.
- At the beginning of the program we would bring in a guest lecturer to talk about financial planning
- I focus on meeting all of the competencies. I look for existing resources. One competency focused on social measures and outcomes, so I wanted to create volunteer opportunities for our students similar to the PharmD program. (very hands on)

When do you know it’s time to evaluate or redesign a course that you’ve created?

- We will look at the student evaluations every quarter
- I will not implement a change in the middle of the year. I will implement a change after the cohort goes to the next year or graduates
- We will pull the evaluations at the end of the four quarters and look for deficits in course curriculum, content delivery, weaker presenters, timelines.
- We are a systems based curriculum, so do we need to move when we are teaching a certain system
- Sometimes it just fine
- Do not change the clinical year courses to ensure every student has the same experience

Is there a formal procedure right now that you follow for the course review that needs to be submitted to a supervisor?

- Yes, for the clinical side. The course coordinator submits the following at the end of every quarter: average EOR score, student evaluations. All of these come together to make a big report at the end of the year. We look to see if assignments were appropriate, avg scores, lowest score on the EOR exams, highest scores, what was the feedback from the preceptors. Was there a particular area where students were lacking.
- We look at courses at the end because some skills like pharmacology are still developing. They will be better at pharmacology by their seventh or eight rotation.
- I do want to create a report more reflective on what is going on in the didactic year. I want to have more statistical data and not so much subjective opinion.

How did you create the course review process?

- I looked at the reports from the didactic year
- I want the reports from the didactic and clinical year to intermesh.
- I want statistical data
- I looked at what Erin originally had

What would you want to know about the students before they take your course?

- On the clinical side, I am going to make sure they finished their didactic year successfully
- I am pretty sure who I would know who the weaker students are, because we keep them on our radar
- I they are a weaker student I will get supports in place. (i.e. IIP or tutor)
- Students can excel in the clinical year if they struggled with didactic and visa-versa

How do you figure out who might be a struggling student?

- Look at scores
- The didactic comprehensive exams that are taken each quarter
- PACKRAT Data – we look at the five strongest students and the 5 weakest students and identify common themes to see if our curriculum has deficits
- We will address deficits with the students when they are on campus for end of rotation meetings
- I will look at PACKRAT scores, the didactic comprehensive exam, and general class performance to find areas of need and then schedule a lecturer to help address them. PAEA helps provide all of that data.

How do you go about assessing students for the most part?

- With the course I just created, there is no final assessment. It is about active participation.
- We are lucky on the clinical side that we use the end-of-rotation exams from PAEA, which are 120 content-specific questions. A panel makes these questions
- When I had pharmacology I would collect questions from lecturers and then give them the psychometrics of their questions back to them to see if they needed to be tweaked.
- 

What are the few key elements that you always have to include in a course? What makes a Professor Edds course a Professor Edds course? What is the special stamp you put on a course?

- There are two things. Number 1 – I want it to be engaging and exciting. I want student buy in. #2 I cannot hold them responsible for material they do not know or material I have not taught.
- I always make sure to use multiple methods when I teach. (visual, auditory, read/write methods)

- I include engaging activities in my lectures (touchpoints, speed drills, muddiest points, sometimes I would have them fill in blanks while the lecture went on, quiz games)
- I include additional resources like YouTube videos as supplementary material sometime people learn better from others or other present in a different way. I will also share current journal articles that cover course topics.

Do you ever make your own learning materials like slides or anything that helps students learn?

- I 100% do my own PowerPoints
- I found it is more difficult to revise slides than making your own
- I will bring in X-Rays and stories from practice
- I believe that stories stay. I will try to work into actual cases in my lectures (including a case involving her husband during a recent lecture)

What supports can Sullivan provide to help support your course design practices?

- Course design – number one
- We AccessMedicine and AccessPharmacy, but there was no guidance provided. For example, I did not know what type of license we had. I spent a lot of time figuring out what I could see and what I could not see.
- More transparency regarding available resources – Did you know there's cases studies? Did you there's this available?
- Having adequate resources – I know some people bought their own subscription to canva.
- I know there are a lot of great educational sites. They may be made for kids, but they work for adult learners. HERD was great about showing resources – they used to show technology and how to use it. – we have gotten away from that
- OACA is great about creating things and libguides to point that I think sometimes we've forgotten it is actually there. I wish I could articulate what is needed for the clinical year.

Think aloud – redesign

1. Pull previous syllabi and find the existing student learning outcomes
2. Examine the existing assignments and assessments
3. Find the general outline of the course
4. Check that everything maps to ARC-PA
5. Looks at student evaluations / identify areas of concern
6. Draw on the experience of other programs – program to program support
7. Looks to modify resources, identify an appropriate textbook, ensure students have enough practice opportunities
8. Run the course, evaluate it using a student evaluation and test scores
9. Make changes as needed

Think aloud – create a course

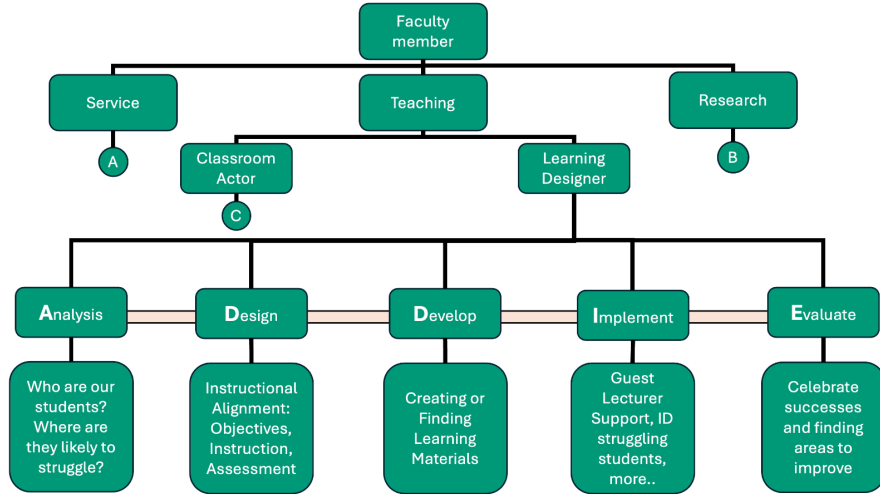
6. First – what is my accrediting body ask for (requiring) – meet what the accreditor specifies
7. Identify an end goal for the course
8. Establish a summative assessment and criteria for success (Considered publication opportunities)
9. Create a course outline guided by contact hours.
10. List learning objectives
11. Provide guidelines “They want shape, they want guidelines” (Mentioned creating a rubric for the summative presentation)
12. Develop assignments
13. Analyze or look for existing resources – “There are modules and there are guest speakers that can come.”
14. Circle back to ensure that each learning objective is met.

## Appendix F

### Screenshots of ADDIE Handout (Front and Back)

#### Front

How does Course Design Fit into my Role as a Faculty Member?



See the other side for resources to supports each 'ADDIE' competency.

#### Back

### Resources to Help You Design Your Course with ADDIE

[What is ADDIE? Getting Started with Course Design at Sullivan](#)

Analysis	Design	Develop	Implement	Evaluate
Cohort Report (BI Dashboard with data of students coming into your course) PAEA's faculty member discussion forum Form: Suggest a topic for our next design round table Ways other faculty have planned for struggling students	'Crystals' Venn Diagram Approach to Setting Course Learning Outcomes Curriculum Map PAEA's EOR Blueprints ARC-PA Standards NCCPA's PANCE Blueprint Instructional Alignment 101	AccessMedicine Merk Manual Possible ChatGPT Prompts • Create an outline for a presentation on the anatomy of the heart • How should I assess the following objective...? • Generate a case scenario where a patient needs to identify a patient has diabetes for a PA student Form: Submit your successful ChatGPT Prompts here	Guest Lecturer Resources Request someone be enrolled in the Guest Lecturer course Getting Started with Formative Quizzes Form: Request Help with copies, scheduling lecturers, or booking a learning space	Course Dossier Content Collection. • Previous course evaluations previous syllabi • Course action plans • Instructions on how to document your evaluation efforts Cohort Report: Programmatic Assessment Results • PANCE • EOR exams • DCE The Kirkpatrick Model

\*DRAFT\* - If you have any thoughts or suggestions please email me  
 bstephens@sullivan.edu

## CURRICULUM VITAE

BENJAMIN C. STEPHENS

Director of Instructional Design

Sullivan University - College of Pharmacy and Health Sciences

### CONTACT INFORMATION

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Work: bstephens@sullivan.edu | Personal: bencstep.career@gmail.com

### SUMMARY

Educator with 19 years of experience creating effective learning experiences. Planned and implemented in- person, online, and blended learning interventions. Collaborated with various subject matter experts to ensure proper technology integration. Identified knowledge gaps by leveraging best assessment practices. Supported every stage of the instructional cycle through innovation and best educational practices.

### EDUCATION

Ed.D.	Instructional Systems Technology	Indiana University	February 2025
M.Ed.	Instructional Technology	University of Louisville	2013
B.S.	Elementary Education	University of Indianapolis	2005

### PROFESSIONAL WORK EXPERIENCE

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**Sullivan University, College of Pharmacy and Health Sciences Senior Director of Instructional Design and Assessment (2023 - Present)** **Present**  
Instructional Support Specialist - Educational Technology (2017 - 2023)

- Support effective course and assessment design
- Train and support 40+ staff members with emerging technologies
- Create effective instructional materials to ensure student success
- Examine assessment data and provide suggestions to improve outcomes
- Utilize technology to develop efficient systems and workflows
- Support students with various technical issues
- Build and maintain online courses for students and staff
- Leverage educational technology to help ensure student success
- Co-coordinate the pharmaceutical calculations lab



- |   |                  |
|---|------------------|
| <b>University of Louisville</b>   | <b>2021</b>      |
| Guest Lecturer - College of Education   |                  |
| <ul style="list-style-type: none"> <li>• Developed effective online courses</li> <li>• Developed course materials to help learners meet instructional objectives</li> <li>• Used a variety of project-based assessments to monitor student learning</li> <li>• Met regularly with students to help ensure their success</li> <li>• Provided timely feedback on student projects</li> </ul>  |                  |
| <b>Auburndale Elementary, Jefferson County Public Schools</b>   | <b>2008-2017</b> |
| Technology Teacher, Math Interventionist, Technology Coordinator  |                  |
| <ul style="list-style-type: none"> <li>• Provided training and support for 50+ educators on educational technologies</li> <li>• Implemented new technology initiatives with 600+ students</li> <li>• Identified areas of concern and provided technology-based solutions</li> <li>• Deployed and maintained school wide technology</li> <li>• Built and maintained online courses for students and staff</li> <li>• Designed district-wide learning communities for adult learners</li> </ul> |                  |
| <b>University of Louisville</b>   | <b>Summer</b>    |
| Technology Coordinator and Assistant Program Director   | <b>2013-16</b>   |
| <ul style="list-style-type: none"> <li>• Designed a blended learning experience for adult learners</li> <li>• Oversaw the integration of technology in cross-curricular activities</li> <li>• Provided in person and online support to adult learners</li> </ul>  |                  |
| <b>Semple Elementary, Jefferson County Public Schools</b>   | <b>2007-2008</b> |
| Special Education Teacher   |                  |
| <ul style="list-style-type: none"> <li>• Tailored curriculum to meet individual student needs</li> <li>• Prepared and implemented Individualized Education Plans</li> <li>• Collected and analyzed data to identify areas of concern</li> <li>• Created instructional materials for diverse learners</li> </ul>   |                  |
| <b>College Wood Elementary, Carmel Clay Schools</b>   | <b>2005-2007</b> |
| Special Education Teacher   |                  |
| <ul style="list-style-type: none"> <li>• Tailored curriculum to meet individual student needs</li> <li>• Prepared and delivered effective lesson plans</li> <li>• Analyzed data to help guide curriculum development</li> <li>• Created cohesive behavior plans between home and school</li> </ul>  |                  |

## **Presentations**

- Nguyen, V., Stephens, B.C. (2018, November 9-10). Blackboard: Building meaningful assessment in online and classroom environments [Conference session]. Midwest Teacher Scholar Retreat, Louisville, KY, United States.
- Stephens, B.C., Pina, A. (2020, February). Preparing for bring your own device. [Conference session]. Sullivan University, Louisville, KY, United States.
- Raake, S.E., Elder, K., Stephens, B.C., (2020, October 9). That CAN('t) be done! The virtual conversion of health professions assessments.[Conference session]. Sullivan University Faculty Retreat, Louisville, KY, United States.
- Stephens, B.C., Raake, S.E., Daugherty, K.K. (2020, October 9). Use of an electronic assessment platform for student, faculty, and programmatic improvement. Sullivan University - [Conference session]. Sullivan University Faculty Retreat, Louisville, KY, United States.
- Daugherty, K.K., Raake, S.E., Stephens, B.C. (2021, January 29). Tag you're it! Using ExamSoft categories to measure student outcomes. [Conference session]. Sullivan University College of Pharmacy and Health Sciences Health Education and Resources Development Committee, Virtual Presentation.
- Stephens, B.C., Daugherty, K.K. (2021, September 24). Delivering peer feedback to learners with microsoft power automate [Conference session]. Scholarship of teaching and learning conference, New Albany, IN, United States.
- Raake, S.E., Stephens, B.C., Daugherty, K.K. (2021, October 24-27). Building a better exam: Using educational theory to standardize assessment construction and review processes. [Conference session]. Assessment Institute presented by Indiana University-Purdue University, Indianapolis, IN, United States.
- Raake, S.E., Daugherty, K.K., Stephens, B.C. (2021, October 29). Building better assessments. [Conference session]. Sullivan University Systems Faculty Retreat, New Albany, IN, United States.
- Stephens, B.C. Raake, S.E. (2021, May 21). A primer on educational theory and pedagogy. [Conference session]. Sullivan University College of Pharmacy & Health Sciences Health Education and Resources Development Committee, Louisville, KY, United States.

Stephens, B.C. (2021, July 9). Educational technology in the classroom [Conference session]. Teaching and Learning Curriculum, Louisville, KY, United States.

Raake, S.E., Stephens, B.C., Daugherty, K.K., Castleberry, A. (2022, June 22-23). What to do when you don't know what to do: Troubleshooting the issues you never hope to face. [Conference Session]. ExamSoft Assessment Conference, Virtual conference.

Stephens, B.C., Daugherty, K.K., Raake, S.E., (2022, June 22-23). Enforcing category tagging: Balancing academic freedom with consistency. [Conference Session]. ExamSoft Assessment Conference, Virtual conference.

Stephens, B.C., Daugherty, K.K., Raake, S.E. (2022, October 9-11). Evaluating a pharmaceutical calculations courses using Kirkpatrick's four levels of evaluation. [Conference session] Assessment Institute, Indianapolis, IN, United States.

Stephens, B.C., & Daugherty, K.K.(2022, November 4). Engaging and motivating under prepared students with panopto and project-based learning. [Conference session] Sullivan University Faculty Retreat, Louisville, KY, United States.

Daugherty, K.K., English, D., Hardy, A., Stephens, B.C. (2022, November 4). Engaging/motivating the under prepared student at the class, peer, and administrative levels. [Conference session] Sullivan University Faculty Retreat, Louisville, KY, United States.

Frederick, E, Raake, S.E., Stephens, B.C., Tinnell, T., Castleberry, A. (2023, October 30). Wrap It Up! Student Self-Awareness through Technology-Enhanced Exam Wrappers. [Conference session] IUPUI Assessment Conference, Indianapolis, IN, United States.

Stephens, B.C., Nguyen, V. (2023, November 11). Creating a Story Problem Generator with 'R'. [Conference session] Kentucky Convergence Conference, Louisville, KY, United States.

### **Honors and Awards**

Sullivan University - Staff Member of the Year - 2023 Sullivan University  
Achievement Award - 2020 Sullivan University Employee of the Month - 2019 JCPS 'Voice'  
Cohort Leader - 2015-2017

University of Louisville - Outstanding Master of Education Student - Instructional Technology - 2013  
University of Indianapolis - Summa Cum Laude - 2005  
University of Indianapolis - Alpha Epsilon Member - 2005 Publications

## Publications

**Stephens, B. C.** (2013). Technology Critique: Voki. *Kentucky Literacy Link*, 4 (5), 2.

**Stephens, B. C.** (2013). Technology Critique: iCivics. *Kentucky Literacy Link*, 4 (4), 4.

**Stephens, B. C.** (2018). Fostering Honesty Through Detailed Reporting - *Examsoft.com*

Elder, K. G., Frederick, E. K., Raake, S.E., & **Stephens, B. C.** (2022). Faculty doing more with less: A technology initiative realized through a structured process. *Innovations in Pharmacy*, 13(2), 1-4.

**Stephens, B.**, Nguyen, V. D., Raake, S. E., & Daugherty, K. K. (2023). 'R' you ready to save time? Using R to facilitate question creation in a pharmaceutical calculations course. *Currents in Pharmacy Teaching and Learning*, 15(12), 1060–1065. <https://doi.org/10.1016/j.cptl.2023.10.009>

Massey, A., **Stephens, B.C.** (2024). A guide to innovation in physician associate/assistant education: Using instructional technology for improved engagement. *The Journal of Physician Assistant Education*, 1-4. <https://doi.org/10.1097/JPA.0000000000000586>

## Software Experience / Skills

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Microsoft Office Suite	Google for Education Products
Articulate Storyline	Articulate Rise
Adobe InDesign	Adobe Illustrator
Microsoft Power Automate	Blackboard
Panopto	ExamSoft (assessment software)
Qualtrics	R Programming Language
Watermark Survey Platform	Microsoft PowerBi