The process of developing a hybrid interprofessional education initiative for graduate students

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ABSTRACT
The purpose of this qualitative exploratory case study using document analysis was to explain the process of developing an interprofessional education initiative at a public university in the northeastern US. The aim of the initiative was to provide interprofessional education to graduate students. Documents, including a descriptive timeline of the initiative; student discussion posts, reflective journals, and announcements; emails; and a syllabus, were analyzed to determine successes and challenges encountered throughout the initiative. Process theory, as used in project management research, was employed as the conceptual framework of the study. The analysis revealed nine themes for successes and seven themes for challenges. Implications for the future design and implementation of interprofessional education opportunities across masters and doctoral programs relevant to these themes are discussed. Practical implications and suggestions for future research are also provided.

Introduction

Professionals are often tasked with working in teams to meet the goals of clients. Interprofessional practice, a term taken from the healthcare world, refers to a team of multiple professionals who are focused on learning about, with, and from each other as they work towards meeting the needs of clients (Helms & Held, 2020). Given the need for graduate students to practice in an interprofessional manner once they are in the field, it makes sense that interprofessional training be part of their academic programs. This paper describes the process of creating and implementing a voluntary interprofessional training program with graduate students studying educational leadership, occupational therapy, physical therapy, and clinical and school psychology at a public university in the northeastern US.
Review of the relevant literature

Interprofessional education (IPE) occurs when individuals from two or more professions learn about, with, and from each other to enable effective collaboration and improve health outcomes (Interprofessional Education Collaborative, 2016; World Health Organization, 2010). Carney et al. (2019) define interprofessional learning as ‘... learning arising from interactions between members (or students) of two or more professions, which may be a product of interprofessional education or happen spontaneously in the workplace or in education settings and therefore be serendipitous in nature’ (p. 120). Considering this definition, IPE is of great value to institutions of higher education because of its connection to authentic workplace experiences.

Benefits and challenges of IPE

The overall benefits of IPE to student learning is clear. IPE has the potential of supporting students’ reflective skills (Lakkala et al., 2017) and promoting peer learning experiences and future interprofessional collaboration (Petrovich & Navarro, 2020). Considering the benefits of working interprofessionally, Carney et al. (2019) identified four themes from the perceptions of learners: the development of personal relationships, improved education, improved patient care, and improved job satisfaction. In their study, ‘Participants realized that interprofessional teamwork had tangible benefits on the quality of care ... By understanding where one profession’s skill set ends and another’s begins, participants were able to provide more immediate and continuous care for their patients’ (p. 121).

To achieve the benefits of IPE, known factors, such as leadership support (Carney et al., 2019), must be in place. Other factors that facilitate the successful implementation of IPE in institutions of higher education include a shared vision and mission among faculty, ample faculty preparation and training, a supportive administrative and programmatic culture, and engaging the right faculty members across disciplines (Helms & Held, 2020). Additionally, some evidence has been found that faculty development increases preparedness for IPE teaching and increases faculty knowledge, skills, and attitudes related to IPE teaching and learning (Christianson, Bainbridge, & Halupa, 2019). With these benefits and supporting factors in mind, however, IPE implementation does not come without shortfalls and barriers.

It is within long-term, more continuous initiatives that the benefits of IPE are often realized. A guiding document from the Health Professions Accreditors Collaborative (2019) states, ‘In order to achieve the goals of the IPE plan and support students’ mastery of interprofessional competencies, learning activities are optimized when they are integrated into the existing curriculum and longitudinal in nature’ (p. 15). Students may often attend or volunteer at health fairs, present at state or national conferences within their own professions, or even occasionally attend interprofessional lectures. However, these activities are short experiences used to check off a requirement and do not offer the same benefits of an ongoing IPE initiative. And while faculty have been known to include insights from various professions when developing courses, integration and application found outside the classroom have also been limited (Greef, Post, Vink, & Wenting, 2017).

Institutions of higher learning and faculty face other obstacles that hinder the successful implementation of IPE within their academic programs. The planning and carrying
out of an IPE initiative takes much time and effort (Miller, Coleman, & Mitchell, 2018), and developers of such initiatives may find it difficult to come up with a common definition of IPE (O’Leary, Salmon, & Clifford, 2021), which may further lead to misalignment between team-members’ vision for the initiative. Helms and Held (2020) uncovered other specific challenges related to the development and implementation of IPE initiatives, including overcoming discipline-specific stereotypes among faculty members, arriving at consensus on what IPE is and what it is not, ensuring the initiative is inclusive and supportive of the learning objectives of each discipline, and establishing clear and equitable roles among involved faculty.

Student level challenges to IPE also persist. Some challenges include students needing more time to collaborate within their interprofessional groups, the establishment of baseline knowledge for students, and the coordinating of schedules (Lakkala et al., 2017). Boden, Maura, and Lynita (2011) examined the challenges related to organizational structure in higher education and found that most students were interested in interdisciplinary work, yet were reliant upon their advisors to initiate interaction amongst professions outside their own. In some cases, students would not have been aware of the interdisciplinary community had their advisors not alerted them.

The need for IPE expansion

While IPE has been implemented and studied most in the field of medicine as a way to support integrated healthcare practices, there is a need to also consider IPE practices in the field of K-12 education, especially among student-teachers (Miller et al., 2018) and school leaders. Lakkala et al. (2017) found positive student-teacher and social work student outcomes and positive learner and supervisor experiences resulting from an IPE initiative in a primary school setting. They argued the benefits of IPE during university study to professionals’ ability to reflect on their professions and on the professions of others. IPE connecting social work to nursing has also proven beneficial to student learning experiences, as engaged students demonstrated a greater appreciation for other disciplines and spoke positively about and were motivated to work collaboratively with other professionals in the future (Petrovich & Navarro, 2020). The IPE initiative in the current study looked for similar opportunity by connecting current and future educational leaders in an educational leadership doctoral program with students of health related fields interested in the provision of services in K-12 schools.

While it has been widely recommended that IPE be incorporated in healthcare education programs (Khalili et al., 2019; Steven et al., 2017), the current study makes a case for IPE within both healthcare and educational leadership programs serving learners who aspire to work alongside K-12 schools and families. Our IPE initiative (Luke and Iron Man) was based on the case of Luke, a high school student diagnosed with Duchenne muscular dystrophy. The case was intended to be explored through both a medical and educational perspective. This IPE initiative was developed by university faculty as a volunteer opportunity for masters and doctoral level students to experience deep learning over a six-week period. The faculty sought to provide students with a learning experience that would enrich their understanding of and interest in interprofessional relationships. While those who participated in the initiative were current masters and doctoral level students, their roles as future content area experts,
practitioners, and leaders was the focus of their involvement. Through collaboration via online and in-person communication, the faculty aimed to initiate interprofessional learning, providing students an entry-level understanding into peer professions.

**Conceptual framework**

This study is guided by process theory as a conceptual framework. Process theory ‘focuses on sequences of activities, their duration, and the intervals between them, as they lead to specific outcomes’ (Niederman, Müller, & March, 2018, p. 6). Process theory is also used to support project management research (Niederman et al., 2018). The use of process theory in the current study is appropriate considering the IPE initiative was designed and implemented by a team of faculty members at a public university. Understanding the process of this initiative and its level of effectiveness reaching desired outcomes can help support the planning and management of other interdisciplinary initiatives.

The use of process theory as a conceptual framework led to the development of a timeline (see Table 1), which then led to the development of a process model (see

**Table 1. IPE Initiative Timeline: January to September 2019.**

| Action Items |
|--------------|
| **Pre-planning Phase** |
| a. Case development (January – February) |
| b. Frame the interdisciplinary initiative (February – May) |
| c. Obtain approval from the college Dean (March) |
| d. Investigate logistical items (February – May) |
| e. Request the development of a Blackboard shell (April) |
| f. Recruit student participants (April – May) |
| **Week 1** |
| a. Develop syllabus and pre/post survey (20th – 22nd) |
| **May 20 – May 26** |
| b. Plan initial in-person meeting with students (20th – 29th) |
| c. Insert content in Blackboard course shell (22nd) |
| **Week 2** |
| a. Distribute syllabus and pre-survey (28th) |
| **May 27 – June 2** |
| b. Initial in-person meeting with students (30th) |
| c. Students post to Discussion Board #1 on Blackboard (2nd – 13th) |
| **Week 3** |
| a. Welcome message posted on Blackboard and sent via email (3rd) |
| **June 3 – June 9** |
| b. Students submit Reflective Journal #1 on Blackboard (3rd – 10th) |
| c. Students post to Profession Specific Discussion on Blackboard (7th – 16th) |
| d. Week 2 welcome message posted on Blackboard and sent via email (7th) |
| **Week 4** |
| a. Students submit Reflective Journal #2 on Blackboard (6th – 16th) |
| **June 10 – June 16** |
| b. Students post to Discussion Board #2 on Blackboard (16th – 21st) |
| **Week 5** |
| a. Week 3 welcome message posted on Blackboard and sent via email (17th) |
| **June 17 – June 23** |
| b. Students submit Reflective Journal #3 on Blackboard (18th – 24th) |
| **Week 6** |
| a. Final week welcome message posted on Blackboard and sent via email (24th) |
| **June 24 – June 30** |
| b. Students submit Reflective Journal #4 on Blackboard (25th – 28th) |
| c. Final in-person meeting with students; post-survey distribution (27th) |
| **Post Initiative** |
| a. Dissemination of findings at conference (summer 2019) |
| b. Certificates of student participation (fall 2019) |
| c. Development of IPE manuscripts (2020–2021) |

**Figure 1. IPE Initiative Process Model.**
Figure 1). Both the timeline and process model assist in the understanding of the sequence and duration of action items as well as the interrelationship of these items and how they led to specific outcomes. There are eight phases of the initiative, starting with the pre-planning phase and ending with the post initiative. With the exception of the pre-planning phase and post initiative, all other phases (i.e. Weeks 1–6) resulted in students completing tasks during a later phase or week. For instance, tasks designed to be completed in week one were completed in week two, and so on. It is important to note that some week two tasks were also completed in week four, which was the only instance when tasks were completed more than one phase or week later. Implications of this iterative process during the implementation of the initiative were considered during data analysis and the interpretation of findings.

Purpose statement and research questions

The purpose of this qualitative exploratory case study was to understand the process of developing an IPE initiative carried out at a public university in the northeastern US. To better understand the process of developing the initiative, two research questions were addressed:

RQ1: What were the documented successes and challenges resulting from an interprofessional educational initiative for masters and doctoral students?

RQ2: In what ways, if any, were documented challenges resulting from the interprofessional educational initiative addressed by the involved faculty?

Methods

This study used a qualitative exploratory case study approach. An exploratory study focuses on investigating a phenomenon from the bottom up to generate new ideas about said phenomenon (Johnson & Christensen, 2020). A case study approach seeks to investigate a bounded unit, such as a person, group, or event (Johnson & Christensen, 2020). All findings in the study are based on analysis of a series of documents, which include the descriptive timeline of the initiative; discussion posts, reflective journals, and announcements; emails; and a syllabus. Findings are discussed in relation to the timeline provided and the phases within that timeline. The case in this exploratory case study is one multi-week IPE initiative carried out at a public university in the northeastern US. Documents as sources of data and process theory as the conceptual framework of the study are used to answer the research questions and meet the purpose of the study.

The initiative: Luke and Iron Man

In spring 2019, a team of faculty developed an IPE initiative which was implemented that summer. Faculty involved in the initiative were from the departments of educational leadership, occupational therapy, physical therapy, and clinical and school psychology. The IPE initiative was based on a fictitious case initially developed by one of the faculty members from the point of view of a school-based physical therapist. The case was further developed when this faculty member deemed it beneficial to add the perspectives of other professions. This led to a meeting with the team of four faculty members and the
eventual development of the case into an IPE learning activity that masters and doctoral students enrolled in academic programs in each respective department could benefit from. A six-week voluntary learning opportunity then took place over the summer with four students from each respective profession (i.e. educational leadership, occupational therapy, physical therapy, and psychology) being invited to participate.

**Participants**

Approval was first obtained from the university IRB. Graduate students who demonstrated aptitude for interprofessional learning across the disciplines of educational leadership, occupational therapy, physical therapy, and psychology, and who demonstrated interest in practicing their disciplines within K-12 education settings, were then purposely selected and solicited for participation in the initiative by faculty members within their respective departments. It was explained to potential participants that their participation was voluntary and that it would have no impact on their academic standing and progress at the university and in their academic program. They were also informed that they could withdraw from the initiative at any time without penalty.

Each faculty member proceeded to invite four students from their respective department to take part in the initiative. There was no inclusion criteria; students were selected based on each faculty member’s prior experience with each student. The four faculty members led the initiative across the six-weeks. Twelve graduate students participated in the initiative; four from each of the following professions: educational leadership, occupational therapy, and psychology. Due to unforeseen circumstances and scheduling issues, students from the physical therapy program were unable to participate in the initiative. During the initiative, students switched between interpersonal teams and profession-specific groups. These groupings are discussed in more detail in the results section of this study. All 12 students took part in the full six-week initiative and completed all associated requirements and tasks.

**Location**

This study took place in the graduate college of a public university in the northeastern US. Recognized as one of the five most diverse schools in the nation, the university offers over 60 doctoral, master’s, and certificate programs to graduate students. The initiative was set up as a hybrid experience, with the first and last session being face to face and the middle three sessions delivered asynchronously online. The virtual portion took place via the Blackboard LMS. Within this system, participants took part in online discussions and submitted weekly reflective journals.

**Procedures**

Members of the research team met at the conclusion of the IPE initiative to determine which archival data would provide a clear depiction of the process followed when implementing the initiative. Each member searched email correspondences and contents from the Blackboard shell. During this search, the digital documents used as data for document analysis were collected. The research team followed document analysis
procedures as described by Bowen (2009), who explains document analysis as ‘a systematic procedure for reviewing or evaluating documents’ (p. 27). Document analysis in our study was an iterative process and aligned to content analysis as ‘the process of organizing information into categories related to the central questions of the research’ (Bowen, 2009, p. 32). The data collection and analysis procedures support the trustworthiness of the findings in this study; they further support researchers interested in replicating all or parts of study after the implementation of similar IPE initiatives.

**Data collection**

Each member of the research team gathered email correspondences related to the IPE initiative and masked any private or confidential information before sharing these documents with the rest of the team. Most email correspondences related to the IPE initiative had each member of the team included. These emails were then organized by date and time to provide a chronological series of conversations leading up to the IPE initiative and beyond. Independent reviews of the IPE course on Blackboard followed, and members of the research team gathered documents and correspondences which were also organized in chronological order with date and time stamps when applicable. Using all digital documents gathered, one team member developed the Interdisciplinary Education Initiative Timeline (Table 1) and the Interdisciplinary Education Initiative Process Model (Figure 1). The remaining team members reviewed these visualizations of the IPE initiative and verified their accuracy using the same documents gathered and shared among the team members. After minor and agreed upon modifications, data analysis commenced.

**Document analysis**

Document analysis was used to meet the purpose of the study and answer the research questions. The documents analyzed in the current study include a descriptive timeline of the initiative; 87 discussion posts, 24 reflective journal submissions (4 per student), 5 LMS announcements; 88 individual emails across 12 email threads; and a syllabus. A three-step process of analysis was followed. First, documents were collected by the research team and scanned for accuracy and relevance. Second, each member of the research team conducted a thorough reading of the documents, organizing the data by categories related to each research question. These categories included: successes, challenges, and responses to challenges. Third, the research team met to discuss their interpretations of the findings and to reach consensus on how to address each research question. One team member then was tasked with organizing these interpretations into relevant themes by research question and writing up the results. The manuscript, with these results included, was shared as a Google Doc, giving each team member the opportunity to verify that all interpretations were present and accurate. Table A in the Appendix provides the mapping of themes by category and data source. Following this table is a description of each of the codes that emerged by data source.

**Trustworthiness**

Considering that the research team also implemented the IPE initiative, there is benefit in relying on archival data. These data represent what occurred during the implementation
of the initiative and are less subject to the perceptions and experiences of the research team members and the students who participated in the initiative. Not only are the research team members biased due to their direct involvement in the initiative but students who participated in the initiative also had and may still have professional and academic working relationships with members of the research team; these students may thus be similarly biased. While no procedures in a qualitative research study can completely safeguard against researcher bias, it is the hope that such biases have been minimized by relying on the analysis of archival documents and correspondences originating prior to the designing of the current study. Reliability of the findings is further supported as each member of the research team first analyzed and interpreted the data individually before arriving at collective conclusions.

Results

Findings in the study resulting from document analysis revealed successes of the IPE initiative, challenges, and how some challenges were addressed during phases of the initiative. Findings are presented across each research question. The first research question (RQ1) asked ‘What were the documented successes and challenges resulting from an interprofessional educational initiative for masters and doctoral level students?’ Nine themes for successes and seven themes for challenges emerged. The second research question (RQ2) was ‘In what ways, if any, were documented challenges resulting from the interprofessional educational initiative addressed by the involved faculty?’ This research question is answered with each of the seven challenges uncovered during the document reviews. It is important to note that some procedures linked to successes of the IPE initiative were also linked to challenges faced during the initiative. The dual representation of these procedures across the themes of successes and challenges are discussed in the latter of these two sections.

Successes of the IPE initiative

In-person faculty meetings

In-person faculty meetings, especially leading up to the start of the initiative, were necessary to ensure that the initiative was well-planned and that all faculty involved shared a similar vision and understanding of how the initiative would be carried out. In-person meetings were held on a weekly basis leading up to the start of the initiative, with communication between the faculty continuing in between meetings through email and phone conversations. Similar communication continued once the initiative commenced to support students and to facilitate modifications to the initiative as needed. In-person meetings proved useful as time and space was dedicated to the development and carrying out of the initiative. These meetings also provided the faculty the opportunity to share their thoughts, concerns, and questions with all in the planning team present. Emails showed the importance of these in-person faculty meetings, as items of most pressing concern requiring joint decisions were tabled and then covered during these in-person meetings.

Ongoing communication and collaboration

In addition to in-person faculty meetings, ongoing communication between faculty members throughout all phases of the initiative was critical to ensuring that the faculty
had one shared voice and vision. During document analysis, it was noted that nearly all emails among the faculty and to students had all faculty members copied. This was also the case when faculty members emailed other university departments and personnel about the initiative. Furthermore, there were instances when the outcomes of phone conversations were provided via email to all on the team. These measures were helpful for various reasons. First, because students involved in the initiative were enrolled in programs at different academic departments, they may not have previously interacted with faculty and students from other departments. Student needs and concerns may differ between departments and keeping all faculty members informed of conversations with students allowed each member to provide additional guidance and support if and when those students were from their own academic departments. Additionally, there were instances when communication with different departments and personnel across the university was needed, with the results of these conversations impacting how the initiative was being carried out in real time. This made it necessary that each member of the planning team remained informed of such developments as they occurred.

**Faculty roles**

During in-person faculty meetings, roles were given and tasks were assigned to individual faculty members. For instance, one faculty member was in charge of sending clarifying information and reminders to the students; students would then have the opportunity to address any questions or comments to this one faculty member. Another faculty member was in charge of communicating with the Dean’s office, through which approvals were obtained and meeting rooms were reserved. A third faculty member worked with online learning at the university to establish the LMS classroom and communicate technical support needs with the appropriate departments and personnel. A fourth faculty member was in communication with other departments at the university about topics such as co-curricular transcripts and ways the university could acknowledge the work of the students engaged in the initiative. Providing each member of the planning team with specific roles and ensuring that all members of the team were copied on email correspondences was a critical organizational piece that further helped to ensure the successful implementation of the initiative.

**Reminders**

Throughout the initiative, reminders were sent out by a designated faculty member. The purpose of these emails and LMS announcement was to keep students and faculty on track and aware of the pace in which the initiative was moving. Students were mostly engaged in the initiative remotely and faculty members worked out of offices in different academic departments and physical locations. Furthermore, both students and faculty had different schedules, as some programs serviced students who were employed full time during the day. These students and faculty only met for classes in the evenings. Other programs serviced full time students, with classes meeting during the day. Providing those involved in the initiative with periodic reminders of where they were as a group, including the tasks that were due soon or past due, proved instrumental to the overall success of the initiative. Making one faculty member responsible for sending these general reminders was also helpful in limiting miscommunication between those involved in the initiative.
**Student groupings**
Throughout the stages of the initiative, students interacted through different learning groups. The three group types were profession-specific, interprofessional, and whole group. Students shifted from one grouping to another as the initiative progressed. During week two of the initiative, students and faculty met in-person as a whole group and interprofessional teams were assigned. During week three, the students worked virtually in interprofessional teams, followed by profession-specific group meetings in week four also through the LMS. The profession-specific meetings provided students a chance to collaborate with others from their disciplines and the faculty member from their academic department to discuss profession-specific considerations of the case. During week five, students met again with their interprofessional team through the LMS. During week six, students ended the initiative with a second in-person whole group meeting.

While the in-person meetings offered students the opportunity to discuss IPE topics, these meetings were also social events that allowed students to build relationships with each other and with the faculty. Students also had the opportunity to experience different learning environments and were able to use what they experienced in one learning environment to support their learning and the learning of their peers within other learning environments in the future. During data analysis, it was perceived by the faculty that these experiences align well with the different professional environments that students may encounter after graduation, once they enter the field of their respective professions.

**Foundation setting**
The second week was dedicated to having the students understand the purpose and structure of the initiative. During this week, students were made aware of faculty expectations and what they (the students) were being tasked with doing. This information was delivered via the syllabus, during the initial in-person meeting, and on the LMS. The in-person meeting also provided for students the opportunity to connect with the faculty and their peers in meaningful ways before engaging in the central task at hand. The case study was shared with students in week two, with all students across each of the professions receiving the case at the same time. As a result, students and faculty were able to get to know each other first and to understand how the initiative would run, including how the LMS would be used, what their time commitments would be, and the roles they would play within their professions and when engaged in their interprofessional teams.

**Iterative process**
The iterative nature of the initiative was also a strength. As noted in the IPE Initiative Timeline (Table 1) and the IPE Initiative Process Model (Figure 1), students had the opportunity to move back and forth between the weeks of the initiative and their associated tasks. Also, students had the ability to view all phases of the initiative on Blackboard, as future tasks and forums remained open and accessible to students on the LMS. There were also no hard deadlines given. While tasks were expected to be completed at the end of each week, the faculty made a conscious decision to allow students to complete these tasks at their own pace. There were friendly reminders sent of when specific tasks were due; however, students were not penalized if tasks were completed after their due dates. This iterative process is considered a success as it facilitated...
reflections across tasks, weeks, and groups. It allowed students to be responsible for their own interactions during the initiative. It also helped promote professionalism and leadership qualities among the students. This process further supports student learning during an IPE initiative as it connects to future authentic professional experiences where practitioners and leaders are expected to engage in meaningful conversations of their own accord. In real-world professional experiences, individuals may also revisit prior tasks and group conversations for the benefit of future decision making.

**Voluntary extended learning**

The IPE initiative was a volunteer-based initiative with flexibility on what students were expected to complete and when. While students involved in the initiative were currently enrolled in academic programs at the university, engagement in the initiative and the completion of set tasks were not tied to grading in courses required of their respective programs and had no bearing on their standings within their academic departments. Rather, the students who volunteered to take part in the initiative were treated as professionals, able to share their thoughts and add to the group in ways they felt were useful and appropriate. This provided an authentic experience more in line with professional practice and less in line with a traditional classroom experience. While there were specific tasks to be completed at different stages of the initiative, all due dates were flexible and reminders were shared with an informative tone and not as learning expectations similar to assignments due for grading within a traditional academic course.

**Hybrid model**

The last observed success of the IPE initiative was that students were able to share their thoughts through reflective journals and interact with each other across different modalities, including discussion forums and in-person verbal conversations. This practice is consistent with educational literature on different learning styles; as designed, the initiative addressed the learning needs of visual, aural, verbal, social, and solitary learners. Because the initiative took place prior to the COVID-19 pandemic, the use of virtual communication platforms like Zoom and Google Meets was not considered, which will be discussed in the practical implications section of this study. Nonetheless, the initiative was successful in providing students different avenues for communication, collaboration, and learning, while keeping the initiative focused on the case and interprofessional learning.

**Challenges faced during the IPE initiative**

**Interprofessional alignment of IPE case study**

The IPE case study used at the center of the initiative was originally developed by one of the faculty members and focused heavily on topics related to that faculty member’s profession. Considering that students from multiple professions would be equally involved as participants in the initiative, the planning team found it necessary for topics from all professions to be included within the case. In response to this, additional information was added to the case during the in-person planning meetings, with all members of the planning team in attendance and offering suggestions for additions and changes. Revising the case during in-person meetings was beneficial, as additions to the
case needed to be agreed upon collectively to ensure that the information supplied was as close to reality as possible in regards to all the professions included. For instance, while knowing all aspects of a child’s homelife may be an expectation within some professions, others professionals, when working with students and their families, may only be privy to information specific to the services they provide. Thus, knowing what information not to include in the case was as important as knowing what information to include. The need to revise the case during the pre-planning phase is considered a challenge faced during the initiative, considering the amount of time and attention required to ensure a well written and all-encompassing case. Other options aimed at ensuring IPE learning materials are representative of all professions involved are explored in the practical implications section of this study.

**Development of the initiative with student input**

Some students engaged in the IPE initiative preferred more in-person interactions, in addition to the initial and final in-person meetings. Based on student feedback, providing the students with additional opportunities to meet and collaborate with their peers and faculty during other phases of the initiative (e.g. weeks 3–5) was an area of programmatic growth. The faculty who planned the initiative were under the impression that a mostly remote IPE initiative would have been better suited for the master’s and doctoral level students involved, considering that some of these students were employed full-time and had limited availability. This was further considered to be the case ahead of the summer 2019 semester, which is when the initiative took place. Faculty assumed that students would be apprehensive about returning to campus more than twice during the initiative. However, it was determined during the analysis of emails and journal reflections that the faculty should have remained cautious against assuming which modality (e.g. online vs. in-person) students would have collectively preferred. Overall, having the opportunity to offer a hybrid model of learning proved beneficial, but developing the initiative and how it would run with student input may have led to a more engaging learning experience with additional opportunities for in-person collaboration.

**Starting the initiative on time**

The initiative was originally set to commence with the email distribution of the syllabus and pre-survey on May 20. The first in-person meeting with students was scheduled to take place on May 23. During the pre-planning phase, however, the faculty decided to move the distribution of the syllabus and pre-survey to May 28 and the first in-person meeting to May 30. Thus, all first week items occurred seven days after initially planned, which shifted the student involvement from 6 weeks to 5 weeks. This decision came during week one of the initiative, when it was determined by the faculty that items critical to the start of the initiative were still pending. Pending items included finalizing the setup of the LMS classroom, confirming the voluntary participation of some students, and refining the syllabus and when and how the pre-survey would be administered. Rather than start the initiative as scheduled and rushing these critical items or leaving them pending, the faculty decided to push the start date a week to allow enough time to accurately address all pending items. This change was communicated via email and in advance to those students who had agreed to participate in the initiative during the pre-planning phase. It was agreed upon by the faculty that moving these initial items a week
led to a much smoother start to the initiative, though having completed all critical items during the pre-planning phase and starting the initiative as planned would have been most ideal.

**Conflicting student and faculty schedules**

During the pre-planning phase of the initiative, it was evident that student and faculty schedules differed based on professions. All of the participants in the initiative were full-time students at the university, with some responsible for 12–15 graduate credits per semester, and others being employed full-time and responsible for six graduate credits per semester. The former took classes during the day and the latter took classes in the evening. The same was true for members of the planning team, as faculty at some departments taught during the day and were available in the evenings, while their counterparts had the inverse schedule and availability. This reality led to the establishment of a hybrid learning experience, with most of the interactions between students occurring online. It was found through student feedback that some students were willing to meet more in-person. Thus, efforts by the faculty could have led to finding more common meeting time and to facilitating more in-person meetings between the students. At the same time, the hybrid experience and the ability for students to interact online asynchronously may have further facilitated communication and learning between students. The analysis of documents demonstrates the challenge that conflicting schedules bring when planning an IPE initiative; at the same time, the importance of common planning and shared leadership (with students) continues to be a major finding in this study.

**Navigating the learning management system**

Not all faculty and students involved in the IPE initiative had previously used the Blackboard LMS prior to the initiative. There was thus a learning curve for both faculty and students as they engaged in the online environment. In response to this issue, time was dedicated during pre-planning meetings with faculty to discuss the features of the LMS and how these features may be used. These discussions aligned with the early development of the initiative, as it was necessary to understand the capabilities of Blackboard in order to design the online components of the initiative. Some students also experienced a learning curve using Blackboard as determined by email correspondences with students asking for guidance on how to maneuver the LMS. These emails were addressed by the faculty member in charge of coordinating with online learning at the university. This faculty member, having taught online courses through Blackboard in the past, was able to answer some questions in real time. Other inquiries and technical support needs were forwarded to the appropriate departments and personnel at the university for further assistance. Having one point of contact for specific matters is a recurring theme in the study and a measure which proved beneficial to addressing questions and issues as they emerged.

**Academic vs. professional student experiences**

Finding a balance between academic and professional experiences during the planning and implementation of the IPE initiative also proved to be a challenge. In order to provide students an authentic professional experience, there were few directives given
outside the syllabus and due dates for weekly tasks were loosely enforced. The faculty operated under two assumptions. First, a learning experience that is open and student driven would be more in line with professional practice and less aligned to traditional classroom practices. This in turn would offer students a different learning experience and one that the faculty expected would be much more interesting for the students involved. Second, it was believed that this approach would result in more experiential learning, similar to the experiences attained in real work environments alongside peers from other professions. As explained by one of the faculty members, professionals have the opportunity to engage in constructive dialog with their peers from other professions at their discretion; expecting that responses cover specific questions, that they be of a certain length, and that they be submitted by hard deadlines is more in line with classroom practice than with professional practice.

While this was an innovative idea that is well supported by the educational literature, at least one student did mention that they would have appreciated prompts, specifically related to the reflective journals that they were asked to complete within the online environment. This suggestion was offered towards the end of the initiative, so specific changes were not implemented as a result. However, this finding shows the difficulty of finding a medium between academic and professional experiences when developing an IPE learning experience for master’s and doctoral level students. While some students may work well under self-directed terms, others may find it difficult to complete associated tasks if they are unsure of what is being asked of them.

Late completion of student tasks
In line with the previous finding, having no hard deadlines on student tasks found within the online environment proved to be a challenge. While due dates were provided on the syllabus and reminders of soon and past due tasks were sent to students, these deadlines were loosely enforced and led some students to post after the due dates. Furthermore, all discussion boards and tasks remained open and available for students to post to at their discretion. These procedures potentially limited the student learning experience. For instance, postings to discussion boards were required to move conversations forward within the cross-curricular groups, and posting late to a journal entry may have limited students’ abilities to reflect on what happened during that specific week of the initiative.

It is important to note that late submissions became less of an issue as the initiative progressed, which may demonstrate that students were becoming more self driven, engaged in the initiative, and familiar with the use of the LMS. To exemplify, students were asked to post to the first discussion board by the end of week two, with some students completing this task in week four, up to 11 days after the due date. By contrast, all other online tasks that followed were completed within one week after the due date. While there is the possibility that students became more self driven and engaged in the initiative as evidenced by their timelier posts, a longer initiative was needed. Not enough evidence was uncovered within the five weeks students were engaged online to determine if they did in fact become more self led as the initiative progressed.

There are two more important takeaways related to the challenge of late student submission. First, considering the LMS learning curve for students, it may have taken them a bit longer to become used to posting to the online course. However, the fact that students were offered timely technical support leads the faculty to believe that this was
likely not the case. Second, while some students did post after the due date, the expectation was that students make an initial post and then respond to the posts of their peers. Some students who posted after the due date in response to their peers did make their initial posts to that same discussion board within the appropriate week. Unfortunately, this was also not always the case.

Discussion

A marker of success of the IPE initiative in this study is the foundation that was set by the faculty. Chen et al. (2019) discussed the importance of experiential learning and the learning cycle in training students who value interprofessional work. The learning cycle views learning in four phases with beginning phases focused on active reading and discovery and the final stages emphasizing application of skill. This is in line with the foundation setting that occurred in this study during the second week of the IPE initiative, when students were tasked with reviewing the purpose and structure of the initiative, learning about faculty expectations, and engaging in peer to peer relationship building. Further focusing the early phases of an IPE initiative to reading and discovery, as suggested by Chen et al., can bring about clear benefits to student learning. We further acknowledge that setting a strong foundation takes time and cannot be realized over a few occurrences, which further aligns with the recommendation that IPE initiatives be longitudinal in nature (Health Professions Accreditators Collaborative, 2019).

Our IPE initiative, while also focused on foundation setting for both faculty and the students, was six weeks in length, with the faculty planning period extending approximately five months. This initiative was not longitudinal in nature, yet it still proved beneficial to the learning and career preparation of graduate students enrolled in educational leadership, occupational therapy, physical therapy, and clinical and school psychology programs at the university. Thus, results from the current study demonstrate the utility of IPE initiatives to student learning and career development irrespective of the length of time the initiative runs. This is not to say that length of time is inconsequential, as we would hypothesize that greater exposure of IPE training will lead to increased outcomes in student experiential learning. However, as found in the current study, even shorter initiatives can support student learning and should thus be considered if time constraints are present. In such instances, academic programs may provide opportunity for reading and discovery prior to students directly engaging in an IPE activity, by ensuring faculty continue to provide for students insights from various professions within their course content (Greef et al., 2017).

The importance of student perspectives with respect to the implementation of IPE continues to be of consequence throughout the literature. Alignment of student attitudes and behaviors related to IPE have been found to a slightly greater degree when compared to program chairs and directors (Shandas & Brown, 2016). Student input for improving an IPE activity has included more time to prepare, revisions to the survey instrument, and better accommodations within the activity’s environment (Petrovich & Navarro, 2020). And Lakkala et al. (2017) found students engaged in IPE preferred more time for collaboration. In the current study, students similarly preferred a longer initiative and more in-person meetings. Thus, while time constraints may limit the ability of some academic programs to provide IPE opportunities that are more longitudinal in nature,
there is clear evidence that moving towards more on-going learning opportunities is both beneficial to student learning and would be welcomed by students.

The initiative was also considered successful as it provided for students an IPE learning opportunity that they otherwise would not have experienced, with all students who participated remaining involved throughout the entire initiative. Other initiatives have reported the recruitment of students to be a major challenge (e.g. Deichen Hansen, Holland, & Munn, 2020). The potential benefit of voluntary IPE initiatives implemented with student input and with no reliance on grading may be of consequence here. While the formal incorporation of IPE opportunities within academic programs is beneficial and may be sought after in certain departments and institutions of higher education, programs without these opportunities in place may still benefit from the development and implementation of a well-planned IPE initiative that is not yet found within its written curriculum. As found in the literature, students are interested in IPE opportunities and willingly participate in them for the personal educational benefits they provide (Boden et al., 2011). Students may even find more value in IPE learning opportunities when they are not directly connected to their programs of study or to formal grading, whereas students who are forced into partaking in IPE initiatives may either be apprehensive or focus more on the academic credit they are receiving and less on the actual experience.

The importance of institutions setting up IPE initiatives for their students is further evident in this study and throughout the relevant literature. Shandas and Brown (2016) explain that programs support interdisciplinary values, but have difficulty applying these principles and bridging the gap between theory and practice. The current IPE initiative was developed by faculty members from different departments and led to benefits that would not have been realized were it not for their efforts and the support of their institution. This further aligns to the importance of leadership support to the successful implementation of IPE initiatives (Carney et al., 2019).

In relation to leadership support, another marker of the success of the IPE initiative in this study rests on the faculty’s ability to communicate and collaborate effectively during planning of the initiative and throughout its implementation. In-person planning, ongoing communication, and assigned roles are all aspects of the current IPE initiative that may help counter challenges related to the implementation of IPE initiatives in general. Such challenges include disagreements between faculty during the IPE planning process and institutional constraints due to rigid guidelines, policies, and systems in place (Miller et al., 2018). Additionally, Joynes (2018) recommends IPE development focus on best practices and that IPE be delivered in ways that are meaningful for students. There is not only the need for faculty to well-represent their own professional disciplines among students; they must also do the same for faculty of other professional disciplines. Professions related to their fields well to students, but that they do the same for those professions related to the fields of the other faculty involved. The current initiative started with in-person common planning which offered faculty the opportunity to learn from each other about the initiative overall and the expected learning outcomes from the context of each of their academic departments and fields of study. The faculty also developed the final IPE case study as a team during their initial planning meetings. These early collaborations may have facilitated a unified voice when delivering the IPE initiative and likely resulted in an overall stronger learning experience for the students.
The aforementioned practices align to the factors that facilitate the successful implementation of IPE as forwarded by Helms and Held (2020) and the greater appreciation for the professions of others as uncovered by Petrovich and Navarro (2020). Two critical components of implementing IPE opportunities for learners also include strategic planning and building partnerships (O’Leary et al., 2021), which once again were operationalized by the faculty in this study. To ensure a successful start, the IPE initiative started a week after originally scheduled due to the need for additional planning. This is in line with Miller et al.’s (2018) recommendation that enough time be dedicated to planning so as to identify programming and institutional obstacles that may emerge during the implementation of an IPE initiative, and flexible start dates may be instrumental to that success.

**Limitations of the study**

There is widespread interest in ensuring IPE experiences are part of the curriculum within many fields of health care. Some fields (e.g. social work) have been slower to implement IPE when compared to others like nursing and psychology. To fill this void, one university provided IPE opportunities to students in social work alongside their counterparts from other health-related disciplines (Deichen Hansen et al., 2020). Similar to the Hansen et al. study, the faculty in the current study built a syllabus, leveraging online learning, and established interdisciplinary groups of students. Unlike other IPE initiatives, however, this initiative was voluntary for students and not tied to specific courses or academic programs. The initiative also did not incorporate a clinical component; students who participated did so exclusively on the university campus and through the LMS. Thus, results from this study are limited to the successes and challenges of a uniquely designed IPE initiative at one public university in the northeast region of the US. Also, due to the COVID-19 pandemic, this manuscript was initially drafted two years after the end of the initiative. While there was reliance on documents from the initiative, recalling the lived experiences of faculty involved was a challenge. The intricacies of these experiences may not have been recalled in full. The last noted limitation of this study is that the faculty who led the initiative are also the faculty who analyzed the data, which has implications for potential bias.

**Practical implications**

While the IPE initiative had its challenges, the overall success of the initiative is evidenced by the positive outcomes observed throughout the data analysis. Results from this study have thus led to some practical implications, which may be considered when planning future IPE learning initiatives for masters and doctoral level students. First, the case of Luke and Iron Man was critical to student learning, in that every conversation within each student group focused solely on this case. Therefore, initially writing the case together as a team of faculty, as opposed to one faculty member creating the case, would not only save time (i.e. decrease the need for editing and revisions), but would also promote a cohesive and deliberate voice. Second, examining the time faculty were committed to this initiative through a solution-focused lens, hours could have been reduced through simple modifications, such as pre-written tasks and scheduled
reminders via the LMS, both of which have the potential to save time and communicate clear expectations among all stakeholders. A discussion forum on the Blackboard course where students can post questions and receive responses from faculty and other students would strengthen overall communication and facilitate the addressing of technical support issues as they arise. In the IPE initiative, these procedures may have decreased the need for clarifying emails, which were periodically sent throughout the initiative by both faculty and students as needs arose.

A common theme emerged when analyzing the successes and challenges of the initiative: the platform in which faculty planning and student learning occurred was a critical tool used to drive the initiative forward. The COVID-19 global pandemic brought about many challenges and led faculty in higher education to pivot and adapt to a new learning and social environment. As a result, university faculty are now better equipped to stay connected, collaborative, and engaging from remote locations through the use of online communication and learning platforms. When analyzing the structure and format of the initiative, it was noted that learning and planning occurred in a hybrid fashion, including asynchronous learning. Future initiatives should consider utilizing virtual platforms such as Zoom and Google Meet for both faculty planning meetings as well as student group meetings. Not only would the implementation of synchronous learning through virtual platforms increase the feasibility of future initiatives, but this may also attract a different student population, including students unable to travel to in-person meetings but interested in a synchronous IPE learning experience. Synchronous learning through virtual platforms may also promote the use of technology-based learning strategies that can be carried forward by students into their future professional work environments.

In addition to the above practical implications, one last point to be considered is the length of the initiative. While the plan was for the initiative to run for six weeks, the initiative was carried out over five weeks due to critical items pending during week one. A longer planning period is recommended to help support a timely start to the student experience. In alignment with some of the known challenges of the initiative, the faculty also presumed that a shorter initiative would be attractive to students, considering that the initiative took place over the summer semester. However, the students’ voices presented different sentiments. Thus, increasing the length of the initiative could provide deeper learning and stronger interprofessional understanding among students. IPE initiatives may run from mid-May to the end of July (approximately 10 weeks) or they may be delivered during the fall and spring semesters for similar amounts of time, leading to the longitudinal types of initiatives recommended in the relevant literature.

**Implications for research**

Interdisciplinary initiatives in higher education should be investigated further to not only add to the body of literature, but strengthen the interprofessional experiences of masters and doctoral students. After these experiences in the classroom, is the potential for generalization into the professional realm, which positively contributes to the healthcare and K-12 community. The focus of this study was to analyze the strengths and challenges of the initiative’s infrastructure, which have been outlined above. While the findings support continued use of similar initiatives in higher education, modifications and adaptations may improve project efficacy, as well as
aid in data analysis. Therefore, recommendations for future research projects should include a stronger communication tracking system in regards to faculty and students both through email, the LMS, and the format for meetings. Future initiatives may also want to include a post-initiative interview, conducted at least a year into each of the participants’ professional journeys. The intent of these interviews would largely aim to understand the implications of the initiative through the participant perspectives as they reflect on entering and remaining in the healthcare workforce and in educational leadership. Lastly, because the current study did not focus on the voluntary nature of the IPE initiative as a motivating factor, future research may consider investigating how the voluntary nature of IPE initiatives may motivate students to participate, interact, and learn from each other in authentic ways.

**Conclusion**

The bridge from theory to practice is a critical component of individual departmental graduate curricula. However, this is not consistently the case for interprofessional education. While institutes of higher education recognize the importance of IPE, opportunities for masters and doctoral level students are limited in both occurrence and depth. Universities and their faculty need to establish these opportunities by working together across professions. Institutional intervention and guidance can lead students to experience IPE learning by working with their peers from other professions. This type of training in graduate education will lead to more collaborative-ready future practitioners. Understanding overall success and challenges experienced by faculty during the development and implementation of an IPE initiative can provide helpful strategies for others wishing to develop a similar experience for their students.

**Disclosure statement**

No potential conflict of interest was reported by the author(s).

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Appendix

Table A Theme Mapping.

| Category                  | Theme                                                                 | Sources of Data |
|---------------------------|-----------------------------------------------------------------------|-----------------|
| Category 1: Successes     | Theme 1: In-person faculty meetings                                   | E1              |
|                           | Theme 2: Ongoing communication and collaboration                        | E1, E2, E3     |
|                           | Theme 3: Faculty roles                                                | AN1, E4, E5, E6, E7 |
|                           | Theme 4: Reminders                                                     | AN1, E8, E8     |
|                           | Theme 5: Student Groupings                                             | AN2, DP1, S1    |
|                           | Theme 6: Foundation setting                                            | AN3, E8, S1, S2, S3 |
|                           | Theme 7: Iterative process                                             | AN1, E8, T1    |
|                           | Theme 8: Voluntary extended learning                                   | AN4, DP1, DP2, E8, J1, S4 |
|                           | Theme 9: Hybrid model                                                  | AN3, E8, DP1, E8, J1, S2, S3 |
| Category 2: Challenges    | Theme 1: Interprofessional alignment of IPE case study                 | E1              |
|                           | Theme 2: Development of the initiative with student input              | E7, J1          |
|                           | Theme 3: Starting the initiative on time                               | E4, E5, E6, E7, S3, T1 |
|                           | Theme 4: Conflicting students and faculty schedules                   | E8, AN4, J1    |
|                           | Theme 5: Navigating the learning management system                     | E1, E6, E7     |
|                           | Theme 6: Academic vs. professional student experiences                 | E8, S2, T1     |
|                           | Theme 7: Late completion of student tasks                              | AN4, S3, T1    |

Sources of Data: Code List

Announcements

- AN1 – Course related directives/reminders posted on the LMS by designated faculty member.
- AN2 – Provision of weekly student groupings.
- AN3 – Provision of the purpose and structure of the initiative.
- AN4 – Provision of general information about the initiative, including the pace of the course, by designated faculty member.

Discussion Posts

- DP1 – Collaborative discussions between students and faculty within weekly student groups.
- DP2 – Frequency and length of student posts varied by student.

Email

- E1 – In-person faculty meetings focused on common planning and joint decision-making.
- E2 – Summaries of individual phone and in-person conversations.
- E3 – Copying all faculty members on correspondences.
- E4 – Correspondences with university administration spearheaded by designated faculty member.
- E5 – Correspondences with academic departments spearheaded by designated faculty member.
- E6 – Correspondences with support service departments spearheaded by designated faculty member.
- E7 – Correspondences with students spearheaded by designated faculty member.
- E8 – Provision of general information about the initiative, including its purpose, structure, and pace.

See sources of data code list.
Journals
• J1 – Reflective journaling from students detailing their experiences throughout the initiative.

Syllabus
• S1 – Outline of weekly student groupings.
• S2 – Provision of the purpose and structure of the initiative.
• S3 – Outline of weekly LMS student tasks and two in-person meetings.
• S4 – Statement that engagement in the initiative and the completion of related tasks are not tied to grading in courses required of academic programs and have no bearing on student academic standing.

Timeline
• T1 – Revisiting and completion of student tasks and learning objectives during later weeks.