JOTE Journal of Occupational Therapy Education

Volume 8 | Issue 1 Article 2

2024

A Model for Interprofessional Education between Occupational Therapy and Accounting Students: A Mixed-Methods Study

Angela Lampe
Creighton University

Brenda Coppard
Creighton University

Alison Maloy
Creighton University

Yongyue Qi
Creighton University

Recommended Citation

Lampe, A., Coppard, B., Maloy, A., & Qi, Y. (2024). A Model for Interprofessional Education between Occupational Therapy and Accounting Students: A Mixed-Methods Study. *Journal of Occupational Therapy Education, 8* (1). https://doi.org/10.26681/jote.2024.080102

A Model for Interprofessional Education between Occupational Therapy and Accounting Students: A Mixed-Methods Study

Abstract

This interprofessional education (IPE) project was designed to prepare students to work and lead in an increasingly complex healthcare environment. The purpose of this project is to describe and measure accounting and occupational therapy students' perception and value of participating in an IPE learning activity and how the activity enriched the learning environment and identified gaps of knowledge to improve teaching. A mixed methods pre- post-survey design was used to collect quantitative data from a modified version of the Interprofessional Socialization and Valuing Scale (ISVS-9a) from 115 occupational therapy and 21 accounting students. Qualitative data was collected from a post-survey using open-ended questions and the accounting students' consultation deliverable report to the occupational therapy students. Statistically significant improvements from pre- post-survey for all ISVS-9a items were found for the occupational therapy students (all p

Keywords

Interprofessional education, occupational therapy, accounting

JOTE
Journal of Occupational Therapy Education

Volume 8, Issue 1

A Model for Interprofessional Education between Occupational Therapy and Accounting Students: A Mixed-Methods Study

Angela Lampe, OTD, OTR/L

Brenda Coppard, PhD, OTR/L, FAOTA

Ali Maloy, MS, CPA

Yongyue Qi, MS, PhD

Creighton University

United States

ABSTRACT

This interprofessional education (IPE) project was designed to prepare students to work and lead in an increasingly complex healthcare environment. The purpose of this project is to describe and measure accounting and occupational therapy students' perception and value of participating in an IPE learning activity and how the activity enriched the learning environment and identified gaps of knowledge to improve teaching. A mixed methods pre- post-survey design was used to collect quantitative data from a modified version of the Interprofessional Socialization and Valuing Scale (ISVS-9a) from 115 occupational therapy and 21 accounting students. Qualitative data was collected from a post-survey using open-ended questions and the accounting students' consultation deliverable report to the occupational therapy students. Statistically significant improvements from pre- post-survey for all ISVS-9a items were found for the occupational therapy students (all $p<.001$) and on two of the ISVS-9a items for the accounting students ($p < .043$ and .026). The accounting students found the IPE to be an (1) authentic learning activity, (2) they gained insight into the business acumen/savviness gap of occupational therapy students, and (3) experienced interprofessional reciprocal learning. The occupational therapy students found the IPE (1) increased their business acumen/savviness, (2) was valued time spent one-on-one with an expert, (3) improved the structure and organization of their project, and (4) was a valuable learning experience. The results are intended to share ways an IPE project may occur between healthcare and business students.

Introduction

Healthcare is a business. Healthcare professionals, especially those who assume leadership roles, need to have knowledge of business concepts in addition to being competent practitioners. The American Occupational Therapy Association's (AOTA) Vision 2025 challenges occupational therapy practitioners to advocate for and create effective solutions that promote health, well-being, and quality of life for persons, populations, and communities (AOTA, 2017). The Accreditation Council for Occupational Therapy Education (ACOTE®) Standards and Interpretation Guide requires master and doctoral level occupational therapy students to demonstrate knowledge of, and be able to evaluate the business aspects of, clinical practice (ACOTE®, 2018). To fully achieve the vision and meet accreditation standards, occupational therapists must be prepared to develop and provide evidenced-based, client-centered, and cost-effective solutions to influence change in policies, environments, and complex systems (AOTA, 2017; Yuen et al., 2017*).* To fully enact the vision, meet standards, and lead in healthcare, occupational therapists need, not only clinical knowledge and skills, but also knowledge and skills related to business, financial planning, management, and communication (ACOTE®, 2028; Bell, 2016; Millsteed et al., 2017). The problem is that occupational therapists are trained primarily to provide clinical care, with some, but certainly less, emphasis on the business skills necessary to transform healthcare (Butler et al., 2019).

Using clinical and business skills, occupational therapists are well positioned to develop programs and businesses to promote health, well-being, and quality of life for persons, populations, and communities. To ensure the success and sustainability of a program, occupational therapists may opt to seek consultation with experts in business management. Frequently, healthcare consultants are hired for their expertise in (1) strategic management, (2) financial management and operations, and (3) human resources and benefits (George Washington University, n.d.). During didactic coursework, students must learn the value of partnering with other professionals to prepare them for future clinical and business practice environments. As a leader in interprofessional practice, the American Interprofessional Health Collaborative (AIHC), strives to connect a variety of professionals working in healthcare, including direct care providers, educators, policymakers, and administrators who understand delivery and payment systems, to work in partnership with patients and communities to improve health and wellness (AIHC, 2018).

The value of creating opportunities for healthcare professionals to engage in interprofessional education (IPE) before entering professional practice is well documented (Björklund & Silén, 2021; Boshoff et al., 2020; Brack & Shields, 2019; Elkington et al., 2021; Halle et al., 2019; Wynarczuk et al., 2019). The evidence is clear that healthcare students who participate in IPE and collaboration benefit from the experience (Björklund & Silén, 2021; Boshoff et al., 2020; Butterworth et al., 2018; Elkington et al., 2021; Fox et al., 2018; O'Brien et al., 2013). The AOTA released a position statement on the importance of IPE which identified healthcare as a "team sport" (Coker-Bolt et al., 2022, p. 12) and aimed to share best practices for embedding

DOI: 10.26681/jote.2024.080102

IPE to “bridge academic and clinical learning environments” (Coker-Bolt et al., 2022, p. 1). The position statement shared a wealth of IPE guidance to prepare occupational therapy practitioners to work collaboratively with other health professionals within clinical care teams. The position statement has only one mention of the importance of IPE on building skills related to interprofessional communication between “professionals in health and other fields” (Coker-Bolt at el., 2022, p. 3).

Collaboration in healthcare may occur between healthcare and business professionals, such as clinicians serving in management and leadership roles and professionals with business degrees. The importance of business acumen for healthcare students has been reported (Demik et al., 2017; Hanners et al., 2022; Ko et al., 2022). A few have reported on the value of IPE between healthcare and non-healthcare students (Addy et al., 2015; Neill et al., 2012; O’Dell et al., 2015; Temple & Mast, 2016). No studies were found that explored occupational therapy and non-healthcare, and more specifically business students’ perception of participating in an IPE learning activity, nor that examined how such an experience enriches the learning environment.

In order to graduate students capable of developing and providing evidenced-based, client-centered, and cost-effective solutions and who are capable of influencing change in practice environments and complex systems (AOTA, 2017), in alignment with the ACOTE® accreditation standards (ACOTE®, 2018), and acknowledging the importance of IPE (Coker-Bolt et al., 2022) occupational therapy students at Creighton University completed a program development plan (business proposal) as an assignment for OTD 406, Management and Program Development. The purpose of the assignment was for occupational therapy students to advocate for the profession and demonstrate knowledge of the business aspects of practice by creating a business proposal for a new or enhanced occupational therapy-based program. The assignment gave occupational therapy students experience completing a needs assessment, writing mission and vision statements, setting program evaluation goals, writing policies and procedures, and developing a budget and financial plan for their program. Following a consultant model that would commonly occur in healthcare business practice, the occupational therapy student groups meet with an accountant student (consultant) for suggestions regarding the budget and financial sections of their proposals. The purpose of this project was to describe and measure accounting and occupational therapy students’ perception and value of participating in an IPE learning activity and use the students’ experience to enrich the teaching and learning environment.

The specific research questions for this project were:

1. How are occupational therapy and accounting students’ perception of their attitudes, beliefs, and behaviors changed as a result of working together in an interprofessional learning activity?
2. How do occupational therapy and accounting students describe the value of participating in an interprofessional learning activity?
3. How did the activity enrich the learning environment?

4. What gap(s) do occupational therapy students demonstrate when creating budgets for program development plans?
5. How can the results be used to improve teaching effectiveness and student learning?

Significant Impact

A review of occupational therapy professional literature identified no publication of IPE activities that paired occupational therapy and business students. As a unique project between the Creighton University's Departments of Accounting and Occupational Therapy, the project was designed to enhance student learning and improve teaching. Student learning, teaching, and curriculum development were informed through analysis of the students' responses to qualitative survey questions and analysis of the accounting students' consultation deliverable report to the occupational therapy students. Analysis of the accounting students' consultation deliverable report provided the instructors information about the knowledge gap(s) that occupational therapy students possess when writing a business proposal. The identified gap(s) is intended to be used to create learning opportunities for future offerings of the course, in hopes that the education will be targeted to the specific needs of occupational therapy students. The next phase of the research may include additional consultations, such as from law and/or marketing students, as well as seeking opportunities for sustaining the learning experience without grant funding.

Methods

Research Design

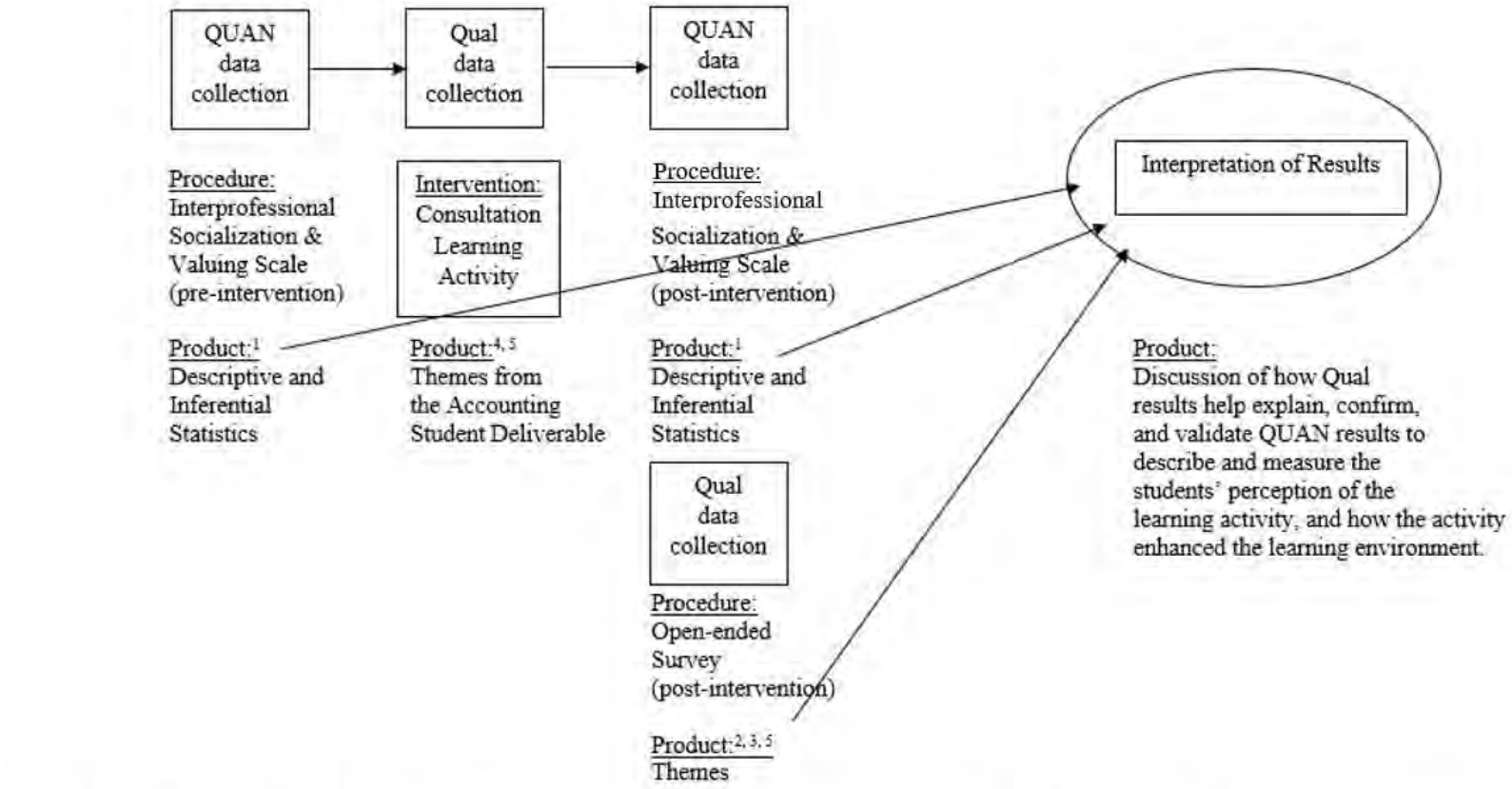
A convergent parallel mixed-methods pre- post-survey design (Creswell, 2018) was used for this project. In this design, qualitative and quantitative data was collected in parallel, analyzed separately, and then merged to understand the research problem. In this approach, a modified version of the Interprofessional Socialization and Valuing Scale (ISVS), the ISVS-9a, which measures three key concepts (beliefs, attitudes, and behaviors) of interprofessional practice, was used to collect quantitative data prior to and following completion of the learning activity (King et al., 2016). Consent was obtained from the survey authors to use a modified version of the ISVS-9a. The study received Institutional Review Board Approval.

Following completion of the learning activity (intervention), qualitative data was collected using a short-answer survey questionnaire of open-ended questions. Qualitative data was also collected from the accounting students' consultation deliverable report and was analyzed. The reason for collecting both quantitative and qualitative data was to provide different and complimentary data to best understand the students' perception of the interprofessional learning activity.

DOI: 10.26681/jote.2024.080102

Figure 1

Visual Diagram of the Approach for Measuring and Describing Students' Perceptions of Participating in an Interprofessional Learning Activity



[1]Research Question 1 - How are occupational therapy and accounting students' perception of their attitudes, beliefs, and behaviors changed as a result of working together in an interprofessional learning activity?
[2] Research Question 2 - How do occupational therapy and accounting students describe the value of participating in an interprofessional learning activity?
[3]Research Question 3 - How did the activity enrich the learning environment?
[4]Research Question 4 - What gap(s) do occupational therapy students demonstrate when creating budgets for program development plans?
[5]Research Question 5 - How can the results be used to improve teaching effectiveness and student learning?

Participants

The accounting student members of Beta Alpha Psi (an international honor organization), accounting majors, and business students who had completed a minimum of two accounting courses at Creighton University were recruited via an email. The occupational therapy students who were fourth semester, second year, doctoral students in the program were recruited from enrollment in the required OTD 406 course. The occupational therapy and accounting students consented to participate in the study. Exclusion criteria included surveys and project consultation deliverable reports from students with incomplete or missing information.

Instruments and Measures

A modified version of the ISVS-9A was used pre- and post-intervention. The ISVS-9A is a 9-item tool with a 7-point Likert scale used to assess three key concepts (beliefs, attitudes, and behaviors) of interprofessional practice (King et al., 2016). The ISVS-9a was developed as a short equivalent form of the ISVS-21. King and colleagues (2016) determined that the ISVS-21 has excellent psychometric properties (Cronbach alpha of 0.988, 95% confidence interval [CI] 0.985-0.991) and likewise the ISVS-9a has "excellent agreement [interclass correlation coefficient (ICC) = 0.970, 95% CI 0.963–0.976] and can be used to assess change as a result of interprofessional education" (p. 177). Thus, the researchers used the shorter version of the ISVS scale in consideration of participant time to complete the surveys. Three statements from the ISVS-9a were slightly modified to reflect the healthcare and business focus of the project (e.g., client vs. project) and one item was added to address the acceptance of feedback in team interactions. Since the changes to the items did not change the context of the survey item, the modified version of the ISVS-9a was not vetted or piloted.

Based on the study's research questions and literature, the researchers self-developed the qualitative questions. The questions were vetted by accounting and occupational faculty colleagues. Qualitative data was obtained from the students using the following open-ended questions.

For the occupational therapy students:

1) What aspect(s) of the consultation activity with the accounting students improved your understanding of budgeting for your program development assignment?
2) Do you believe participating in the consultation enriched the learning environment? Explain your answer.
3) How could the consultation activity be improved?
4) In what way(s) did the consultation report assist you in revising your budget component of the program development assignment?
5) If you were to start an occupational therapy program or business in the future, would you hire a business consultant? Why or why not?

DOI: 10.26681/jote.2024.080102

For the accounting students:

1) What aspect(s) of the consultation activity with the occupational therapy students improved your understanding of your future role as a consultant (for healthcare programs and projects)?
2) Do you believe participating in the consultation enriched the learning environment? Explain your answer.
3) How could the consultation activity be improved?
4) In what way(s) did the consultation activity assist you in understanding the complexity of and need for program development in healthcare, and particularly occupational therapy practice?
5) As result of this learning activity, would you be interested in consulting for a healthcare program in the future?

Procedures

Prior to the consultation, both groups of students received training on the project and consultation deliverable report. A checklist of good accounting practices (see Appendix A) was developed as a tool for use by the accounting students to complete the consultation deliverable report. The occupational therapy students received training in OTD 406. The accounting students received training via Zoom video conferencing technology. Following the training, the project investigators assigned each occupational therapy program development plan work group (i.e., 4-5 students) to one accounting student consultant. Each occupational therapy work group scheduled a 30-45-minute consultation session using Zoom with their assigned accounting student. The consultations were conducted within a 3-day timeframe.

The consultation began with the occupational therapy work groups advocating for and presenting their plan to the accounting student, who served as a consultant on the financial portion of the program development plan. Occupational therapy students explained to the accounting students the business need for and relevance of their proposed program. Using the consultation checklist of good accounting practice as a guide, the accounting students applied analytical and problem-solving skills during their review and examination of the budget tables within the occupational therapy students' plan. The accounting students then provided a consultation deliverable report to the occupational therapy students containing formal recommendations regarding the budget and financial sections of the program development plan. Prior to and following completion of the consultation session, the occupational therapy and accounting students completed the modified ISVS-9a survey to evaluate their perception of the IPE learning activity. Following the completion of the consultation session, the students also completed a post-intervention survey of open-ended questions to gather qualitative data describing the students' experience and how the activity enriched, or did not enrich, the learning environment. The checklist and consultation deliverable reports completed by the accounting students were analyzed by the research team to determine what gap(s) occupational therapy students had in relationship to creating and understanding budgets and how the experience could be improved.

Data Analysis

Quantitative data was downloaded from Qualtrics and exported to a SPSS file. Descriptive statistics were conducted and compared the responses on each of the items of modified ISVS-9a pre- and post-surveys. A non-parametric Wilcoxon signed rank test was used to analyze the changes between the two measures, which is appropriate for ordered categorical data (Oyeka & Ebuh, 2012). All quantitative data were analyzed using statistical package for the social sciences (SPSS) software (version 28.0) and the results were considered statistically significant for a type I error of less than 0.05.

Qualitative data was generated from two sources: post-project answers to open-ended questions about the students' experience and the consultation deliverable reports. Coding was conducted independently by three researchers and then consensus was reached to identify the themes that emerged. The accounting students' consultation deliverable reports was used to conduct a gap analysis of occupational therapy students' financial knowledge. The results from the qualitative data will be used to revise teaching content and approaches to ultimately improve student learning.

Results

Quantitative

Twenty-five occupational therapy program development plan project groups (a total of 115 occupational therapy students) completed the consulting activity assignment. Twenty-one accounting students volunteered to participate in the project; 4 accounting students served as a consultant for 2 occupational therapy project groups. Ninety-two percent (n=106) of the occupational therapy students and 100% (n=21) of the accounting students completed the post modified ISVS-9a survey. Data from the modified pre- and post-ISVS-9a surveys and the accounting students' deliverable reports were analyzed.

Demographic Findings

Demographic results showed that occupational therapy students were older than accounting students (26 vs. 21 years). The data indicated that 94% of occupational therapy students were females while the majority of accounting students were males (62%).

Modified ISVS-9a Results

Related to research question one (i.e., How are occupational therapy and accounting students' perception of their attitudes, beliefs, and behaviors changed as a result of working together in an interprofessional learning activity?), results of the modified post-ISVS-9a survey indicated that attitudes, beliefs, and behaviors of occupational therapy and accounting students were positively impacted through participation in this interprofessional learning activity.

One hundred and six occupational therapy students completed both pre- and post-surveys (see Table 1). For the pre-survey, two items obtained 85% or greater of the maximum score: 91% for the item, "I believe that the best decisions are made when

DOI: 10.26681/jote.2024.080102

members openly share their views and ideas" and 87% for the item, "I feel comfortable in accepting responsibility delegated to me within a team". For the modified post-ISVS-9a survey, all items except, "I feel comfortable in speaking out within the team when others are not keeping the best interests of the project in mind" obtained 85% or greater of the maximum score. Statistically significant improvements were noted in all survey items after the implementation of the project (all p<.001).

Table 1

Occupational Therapy Student ISVS-9a Pre- and Post-Survey

Table 1 Occupational Therapy Student ISVS Pre- and Post-Survey

Survey Item	N	Pre-survey Mean (SD[a])	Post-survey Mean (SD[a])	p-value[b]
I am able to share and exchange ideas in a team discussion	106	4.89 (0.95)	5.39 (0.75)	**<.001**
I have gained an enhanced perception of myself as someone who engages in interprofessional practice	104	4.26 (1.03)	5.07 (0.93)	**<.001**
I feel comfortable in speaking out within the team when others are not keeping the best interests of the project in mind	105	4.30 (1.00)	4.94 (0.96)	**<.001**
I believe that the best decisions are made when members openly share their views and ideas	106	5.44 (0.68)	5.73 (0.47)	**<.001**
I feel comfortable in describing my professional role to another team member	105	4.46 (1.06)	5.28 (0.73)	**<.001**
I have gained an enhanced awareness of roles of other professionals on a team	105	4.19 (1.04)	5.13 (1.04)	**<.001**
I have gained an appreciation for the importance of having a team member with specialized knowledge and skills on a team	106	4.98 (0.97)	5.54 (0.82)	**<.001**
I am comfortable engaging in shared decision making with team members	106	4.96 (0.88)	5.45 (0.73)	**<.001**
I feel comfortable in accepting feedback given to me within a team	106	4.85 (1.00)	5.35 (0.81)	**<.001**
I feel comfortable in accepting responsibility delegated to me within a team	106	5.24 (0.78)	5.54 (0.64)	**<.001**

[a]SD=standard deviation
[b]Wilcoxon signed ranks test

All 21 accounting students completed pre- and post-surveys (see Table 2). Six of the pre-survey items and all post survey items obtained 85% or greater of the maximum score. The items, “I have gained an enhanced perception of myself as someone who engages in interprofessional practice” and, “I have gained an enhanced awareness of roles of other professionals on a team” showed significant improvement from pre- to post-survey (p=.043 and p=.026 respectively).

Table 2

Accounting Student ISVS-9a Pre- and Post-Survey

Survey Item	N	Pre-survey	Post-survey	p-value[b]
		Mean (SD[a])	Mean (SD[a])	
I am able to share and exchange ideas in a team discussion	21	5.10 (0.83)	5.43 (0.75)	.098
I have gained an enhanced perception of myself as someone who engages in interprofessional practice	21	4.43 (1.54)	5.19 (1.17)	**.043**
I feel comfortable in speaking out within the team when others are not keeping the best interests of the project in mind	21	4.81 (1.08)	5.14 (0.79)	.182
I believe that the best decisions are made when members openly share their views and ideas	21	5.52 (0.68)	5.62 (0.50)	.480
I feel comfortable in describing my professional role to another team member	21	5.00 (1.18)	5.29 (1.01)	.327
I have gained an enhanced awareness of roles of other professionals on a team	21	4.52 (1.29)	5.29 (0.85)	**.026**
I have gained an appreciation for the importance of having a team member with specialized knowledge and skills on a team	21	5.29 (0.90)	5.71 (0.46)	.058
I am comfortable engaging in shared decision making with team members	21	5.14 (0.91)	5.52 (0.51)	.071
I feel comfortable in accepting feedback given to me within a team	21	5.14 (0.79)	5.48 (0.60)	.088
I feel comfortable in accepting responsibility delegated to me within a team	21	5.14 (1.01)	5.52 (0.60)	.088

[a]SD=standard deviation
[b]Wilcoxon signed ranks test

DOI: 10.26681/jote.2024.080102

Qualitative Results from Accounting Students

Three primary themes and several subthemes emerged from the qualitative analysis of 21 accounting students' responses to the open-ended questions added to the post-ISVS-9a survey: (1) authentic learning activity, (2) insight into the business acumen/savviness gap of occupational therapy students, and (3) interprofessional reciprocal learning. The themes represent the accounting students' description of the experience, the value of the learning activity (i.e., research question two) and how the activity enriched the learning environment (i.e., research question three).

Theme 1: Authentic Learning Activity Increasing the Accounting Students' Knowledge of Healthcare

The first theme focused the accounting students' description of the experience as an authentic, or real-world experience. Students reported that the experience increased their knowledge about healthcare, the complexity of healthcare practice settings, and the opportunities that exist for program development in healthcare. The following are selected responses from the accounting students that support the theme of an authentic learning activity.

> I learned that there are many areas of healthcare that are underrepresented and that many students have great ideas on how to target these issues.
>
> My biggest take away from this experience was that even the most basic help led to great changes for the team. I was worried that my feedback would not be respected, but the team said that I was able to help them a lot. I realized that there is more than just one way to do things. In healthcare, there are many rules and many ideas, so there is a plethora of ways to create a successful business.
>
> There is a big difference between learning things in the classroom and getting real life experience; plus being able to bring this experience back to the classroom will add even more value to our learning.

Theme 2: The Gap of Business Acumen/Savviness of the Occupational Therapy Students

The accounting students were surprised by the occupational therapy students' lack of business acumen, or savviness.

> I was just kind of blown away at my group's lack of understanding of basic accounting knowledge and Excel skills. It was something I previously took for granted and assumed most people who attended university would have.

The lack of business acumen of the occupational therapy student groups led the accounting students to realize that they had business knowledge and skills that could be of great benefit to the occupational therapy students' program development plans. This realization of skills and knowledge to be shared is evidenced in the following student statements:

> I didn't realize how much knowledge I actually had that could be helpful to students in other disciplines. I see things in a way that they wouldn't think of and they have ideas that I wouldn't be able to think of.

> I have never been in a situation when I was the only one who knew the correct answer, all my past experience with this sort of thing involved submitting it to someone else who could double check me. I think realizing the gap between accountants and other professionals and their understanding of financials is very real and that in most situations there is always going to be someone needed to help bridge the gap. For me, accounting has always just naturally clicked, so I never saw the value in my knowledge and thought that most people had a similar grasp on financials as me.

The validation that the accounting students had business knowledge and skills to contribute to a team, led them to discover an interest in serving as a future consultant in healthcare as evidenced by this student's remark, "It was a great experience and opened my eyes to future career opportunities."

Theme 3: The Value of Interprofessional Reciprocal Learning

Overwhelming, accounting students valued the consultation learning activity with occupational therapy students. One accounting student commented, "There is a big need in this field and a lot of untouched business opportunities. But they need occupational therapy and business people to work together to create these opportunities." Ultimately, many accounting students found this authentic IPE learning activity eye-opening and validating of their business skills and knowledge.

> I realized that I knew a lot more about finance and accounting than I thought I did. It was very cool being able to work with occupational therapy students and learn about their work while also reviewing their financial statements. As a consultant, I learned how to communicate effectively, budget conservatively, and strategize an appropriate business model.

Qualitative Results from Occupational Therapy Students

Four themes and several subthemes emerged from the analysis of the 112 occupational therapy student responses to the open-ended questions added to the post-ISVS-9a survey: (1) increased business acumen/savviness, (2) the value of spending one-on-one time with an expert, (3) improved structure and organization of project, and (4) valuable interprofessional learning activity. The themes represent the occupational therapy students' description of the experience, the value of the learning activity (i.e., research question two), and how the activity enriched the learning environment (i.e., research question three).

Theme 1: Increased Business Acumen/Savviness

Through participation in this authentic IPE learning activity with the accounting students, the occupational therapy students became increasingly aware of their gaps of business knowledge. The consultation activity increased the occupational therapy students'

DOI: 10.26681/jote.2024.080102

business acumen and savviness as evidenced by these comments, “I think [the consultation] greatly improved our program and got us thinking from a business aspect,” and, “The accounting student helped me understand how important numbers, budgets, and financial net incomes are to the success of a business.”

Equipped with an awareness that they lacked business knowledge and skills, the occupational therapy students realized collaboration with experts is an important way to optimize success of their business proposal. Awareness of a gap of business knowledge and the need for collaboration is captured in this occupational therapy student’s comment,

> Considering my lack of knowledge in all things accounting, the activity helped me gain an extreme insight on what it is like to start a business and how much goes into it. However, although difficult, I realized that it can be achieved with hard work and collaboration.

Another student’s comment supported this theme,

> I do believe participating in the consultation enriched the learning environment, because it led us to have an appreciation for other fields. We now understand that we are not good with numbers and that it is important to rely on people who have gone through schooling and gotten a job in that field and to use their expertise to enhance our program. 100%. I encourage this happening every year. This taught us how to collaborate with someone who is completely out of our scope to better understand each person's role in this project. This also created a space for us to build rapport with someone who would be playing a vital role in our project coming to life.

Occupational therapy students benefitted from learning business knowledge and skills through the authentic experience of the consultation activity. The following comments from students support this theme. “It felt like it was more than just a project, but actual real life. It was very informing to know how these types of meetings work.”

> Our accountant student treated our program as if it were a real-life project. Again, he gave us an insight to how investors would treat it, and what they would want to see in order to invest their money into a program like ours and had us modify our budget Excel spreadsheet to make it look professional and easy to follow.

Theme 2: The Value of Spending One-on-One Time with an Expert

The occupational therapy students found great value in the dedicated time spent with their accounting student during the consultation. Frequently the occupational therapy students referred to the accounting student as an “expert.” The occupational therapy students found the experience of one-on-one time with an “expert” helped them answer their questions about their project financials. The following responses from two students support this theme.

> This experience allowed us to gain more knowledge in an area that occupational therapy students don't typically excel in. This was an excellent opportunity to collaborate, consult, and ask questions to make our ideas attainable and realistic.

> I learned a lot talking with the accounting student. It felt more personal rather than being talked at like a lecture might have felt. Also, I felt much more comfortable asking him questions than I would've been in a larger class setting.

Not only did one-on-one time with an "expert" help answer the occupational therapy students' questions, but it also helped some of the students to resolve discrepancies in their project or group. The following student excerpts support the resolution of discrepancies.

> Having a consultation with an accounting student helped clear up discrepancies and questions we had amongst our direct occupational therapy team.

> My team had different ideas and couldn't come to an agreement. The consultor provided expert opinions for us, which helped us to make decisions.

Finally, the occupational therapy students reported that the one-on-one time with an "expert" led to new ideas about their program. For example, students noted, "Our program was absolutely not making money prior to our meeting with our consultant. He was able to help to brainstorm growth ideas to move into a sustainable program." The following quotes further describe this finding.

> I think it was helpful and provided me with some ideas I didn't think about before.

> Our accounting student brought up ideas that came from a more financial thought process vs. an occupational outlook. For me, I do not have a strong background in dealing with finances and so meeting with the accountant student provided great communication and an outlet to ask inquiries.

Theme 3: Improved Structure and Organization of Project

For the occupational therapy students, the consultation learning activity improved the structure and organization of their project particularly as related to how to format a budget table, the organization of budget tables, and presentation of realistic financial information. Occupational therapy students made the following comments:

> The consultant helped us change the formatting of our budget spreadsheets (highest number to lowest, each item capitalized) so that it met professional standards. Another student commented, "The accounting student provided specific feedback about how to display the grant funding and how to display our revenue in our budget tables.

DOI: 10.26681/jote.2024.080102

> Meeting with the accountant was a great experience and provided me with a better understanding of how to organize a budget, identify revenue sources, and how to identify specific expenses. I also learned how to concisely write assumptions and the purpose of them in a budget.
>
> The consultation report helped us recognize materials and items that we failed to incorporate in our first budget. Additionally, there were different layout and excel caveats that we were able to learn from the accountant. We made some of our tables more detailed (itemized) and we color-coded our different cost categories. We also arranged the costs in our tables from highest to lowest.
>
> They thought very realistically about the money. I think we were so pumped about our idea that we overlooked some minor details, which ended up affecting us greatly in the end.

Theme 4: Newfound Perspective on the Value of Interprofessional Learning

For the occupational therapy students, the consultation activity gave them a different business perspective on healthcare that contributed to their learning and understanding. Occupational therapy students commented:

> Yes, I thought it was an enriched learning experience to talk to someone from a different program who knows more of how to handle the business side of things. It was much more of a real-world experience.
>
> I definitely think it enhanced our understanding! It was neat to be able to work with someone in a profession other than healthcare, while still working on a project centered around healthcare. I feel like we gained a wonderful new perspective.
>
> I think that he not only really helped us with our project, it truly showed me how important it was to have different team members with different specialties.
>
> I thought the consultation promoted professionalism and working with different disciplines to reach a common goal.

Many of the occupational therapy students believed the consultation IPE learning activity was reciprocal; meaning both students learned more about one another's profession as expressed by this student, "We all learned from the accountant, and I believe they learned more about occupational therapy."

Qualitative (Accounting and Occupational Therapy Students)

Qualitative comments from the post-surveys also indicated nearly all the occupational therapy students would likely hire a business consultant in the future when, or if, they started a business or program. One occupational therapy student offered this rationale, "There are just too many things I might miss that could affect the success of my company." Similarly, as a result of participation in this learning activity, all the

accounting students indicated that they would be interested in a future position in healthcare consulting. One accounting student stated, “I would actually love to find an accounting job connected to health care in the future.”

When the accounting and occupational therapy students were asked what recommendations they would offer for future IPE learning activities, both groups largely recommended no changes as expressed by this occupational therapy student, “I thought it was a good experience and no improvements come to mind.” If the students did recommend a change, the most frequently expressed change was to add one or more consultation sessions to the learning experience. An occupational therapy student commented, “I maybe wish we would have been required to have two consults and maybe tell them our idea and then do the budget and chat again.” And an accounting student commented,

> The consultation activity could be improved if there was a preliminary meeting between the consultant and the group before any consulting was done, so that I have a comprehensive understanding of what I am critiquing and how I can make it better without using iteration.

Finally, related to recommendations on how to improve the learning activity, a few of the accounting students would have appreciated more information on how to consult and the occupational therapy students requested more time to revise their financial section of the plan.

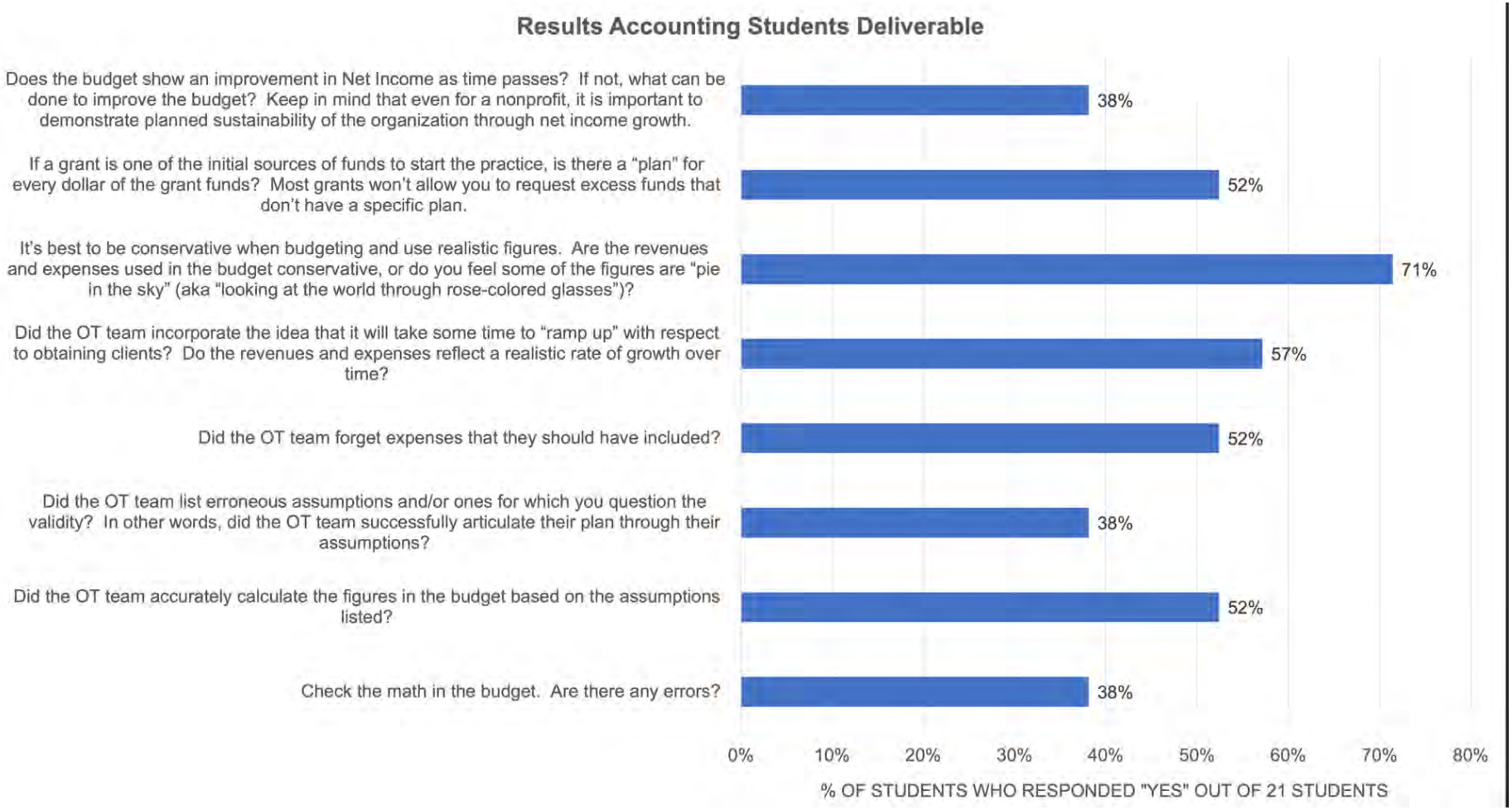
Learnings from the Project Consultation Deliverable Reports

To provide a consistent approach to providing feedback and to enhance teaching effectiveness, the accounting students were asked to follow a consultation checklist containing twenty items involving concepts such as accuracy, assumptions, revenue and expenses, net income and growth, and other topics when reviewing the occupational therapy students’ projects. The completed checklists were analyzed and exposed gaps the occupational therapy students demonstrated when creating budgets for their program development plan. The most frequently noted findings are outlined in the Figure 2 below. This data addresses research question four (i.e., What gap(s) do occupational therapy students demonstrate when creating budgets for program development plans?) and research question five (i.e., How can the results be used to improve teaching effectiveness and student learning?).

DOI: 10.26681/jote.2024.080102

Figure 2

Occupational Therapy Students' Gaps in Understanding Related to Creating Program Budgets: Findings from the Accounting Student Consultation Deliverable Reports



Discussion

In this mixed methods study, we teamed business (accounting) and healthcare (occupational therapy) students to participate in an IPE learning activity in order to: (1) evaluate changes in the students' attitudes, beliefs, and behavior toward IPE; (2) determine how the students' described the value of IPE learning; (3) understand how the activity enriched learning; (4) identify gaps in the occupational therapy students' knowledge of creating and understanding of program budgets; and (5) utilize the results for informing the teaching and learning environment. A modified version of the ISVS-9a was used to measure quantitative changes and open-ended post-survey questions measured qualitative results of the value and enrichment of the learning experience. Overwhelming narrative comments received from the students about participating in this study indicated the IPE learning activity between business and healthcare students was interesting, informative, and beneficial. This finding is consistent with Temple and Mast (2016) who paired nursing students with health administration students for an IPE service-learning activity.

For the occupational therapy students, significant changes in their attitudes, beliefs, and behaviors toward IPE occurred on all categories of the modified ISVS-9a. Given the occupational therapy students had previously participated in IPE learning with other healthcare students throughout their curriculum, it was quite surprising that significant change occurred in all categories for the occupational therapy students. For the accounting students, the learning activity led to significant changes in their perception of themselves as a person who would engage in interprofessional learning and it increased their awareness of roles of other members of a team. The positive changes in students' attitudes we found in our study are consistent with other findings (Butterworth et al., 2018; Elkington et al., 2021)

Students in our study overwhelming positively described their experience and valued learning in this authentic IPE experience. Findings suggest both groups of students appreciated the authenticity of the learning activity and felt working as an interprofessional team led to better understanding of the complexities of business and healthcare. O'Dell and colleagues (2015) shared a model for incorporating health information management (HIM) students into their university's traditional healthcare-focused IPE simulations and activities. They found the model led to more requests for the use of HIM students in other IPE activities and a greater understanding of how non-clinical students can contribute to patient care outcomes (O'Dell et al., 2015). Given the results of our study, we envision the possibility of adding IPE activities with marketing and law students. We also envision a process to make this IPE experience sustainable through the development of an accounting service-learning project or course.

No studies were found that examined IPE between undergraduate (accounting) students and graduate (occupational therapy) students. Given that accounting students in our study were undergraduate and the occupational therapy students were graduate students, we were surprised that neither group of students commented on this difference in age and educational preparation. Interestingly in our study, the graduate occupational therapy students referred to the undergraduate accounting students as

DOI: 10.26681/jote.2024.080102

"experts." Perhaps, this was an indication that the professionalism exhibited during the consultation activity resulted in shared respect of all group members. Björklund and Silén (2021) reported similar mutual trust and respect was expressed by occupational and physiotherapy students participating in a virtual interprofessional setting. In their study, creating a meaningful and open learning environment allowed students to communicate and collaborative through posing questions and sharing their professional knowledge and perspectives with one another (Björklund & Silén, 2021).

We found the learning activity enhanced learning for the students in several ways. For the occupational therapy students, not only did they learn how to develop and organize financial tables; on a deeper level they benefitted from a profounder understanding of the business side of healthcare. The occupational therapy students realized they had a gap of understanding related to the financial management of a healthcare program. This realization led almost all the occupational therapy students to believe collaboration is vitally important for the success of a healthcare program. "Tackling today's healthcare challenges requires a collaborative team of clinical and non-clinical professionals learning and working together while appreciating the contributions each member brings to the table" (O'Dell et al., 2015, p. 27). The accounting students benefitted from realizing they had a skill set and "expertise" to share, and their knowledge positively contributed to improving an occupational therapy-based program development plan. Consequently, many of the accounting students were able to envision themselves in a future consultant role as a result of participation in this learning activity. The qualitative results of our study are similar to Temple and Mast (2016) who found shared learning between undergraduate health administration and nursing students increased the students' awareness of role differences, created respect for each other's discipline, demonstrated the importance of interprofessional practice, and contributed to overall learning from another discipline.

The findings of the accounting students' consultation deliverable reports can be used to improve teaching effectiveness and student learning. When delivering course content on creating program budgets, the instructor can place greater emphasis on the importance of checking the accuracy of figures used from both a mathematical and practical standpoint. In addition, the instructor can incorporate a walk-through of an example budget to highlight important considerations and pitfalls the occupational therapy students might encounter when creating their budgets for program development plans.

A checklist of good accounting practices was used by the accounting students to guide and provide feedback on the occupational therapy student groups' financial section and tables. As the checklist was originated for this study, there are no comparable studies. However, it is interesting that most occupational therapy student groups created conservative budgets for their programs. Far fewer of the occupational therapy students' projects (1) demonstrated an improvement in net income over time and (2) articulated assumptions that supported the financial plan. The occupational therapy students were not well experienced in Excel, so it is not surprising that many financial plans contained mathematical errors.

Limitations

There are several limitations of this study. The ISVS-9a survey was modified to make the questions applicable for this unique healthcare and business interprofessional budget which may affect the reliability and validity of the survey. Another limitation was that the accounting students volunteered to consult and thus may have had a positive mind set coming into the project. The results of this research may have limited generalizability.

Future Research

Future research is needed to describe interprofessional projects and learning between clinical and non-clinical students. The study could be expanded to allow the occupational and accounting study project groups to have more than one face-to-face consultation session and/or to have the accounting students advise on different aspects of the Program Development Project assignment including the final proposal and presentation. Additionally, future research could also utilize the same study procedures to incorporate other non-clinical disciplines, such as marketing, finance, or management students likely to interface within the business side of healthcare programs.

Conclusion

As a result of the IPE project, the occupational therapy students enjoyed increased business acumen/savviness, experienced the value of spending one-on-one time with an expert, improved the structure and organization of their project budget and financial sections, deliverables, and gained a newfound perspective on the value of IPE. Through participation, the accounting students increased their knowledge of healthcare, confirmed their knowledge of accounting practices by witnessing the gap of business acumen/savviness of the occupational therapy students, and realized the value of IPE. Healthcare is a business that involves caring for and working with people. Many different skill sets are needed to operate a successful and sustainable healthcare business or program. Healthcare professionals, such as occupational therapists, spend a great deal of time studying and preparing to address the clinical and functional needs of clients entrusted to their care. Thus, their business acumen is limited. There is benefit to interprofessional collaborations between healthcare and business students in the classroom setting, and real-world learning activities may increase the probability of future collaborations, both in the classroom and in practice. As instructors, it is important to enhance and optimize curriculum to best prepare future therapists and accountants who are poised to establish new and financially sustainable healthcare services.

References

Accreditation Council for Occupational Therapy Education®. (2018). *2018 Accreditation Council for Occupational Therapy Education (ACOTE®) Standards*. https://www.aota.org/~/media/Corporate/Files/EducationCareers/Accredit/StandardsReview/2018-ACOTE-Standards-Interpretive-Guide.pdf

Addy, C. L., Browne, T., Blake, E. W., & Bailey, J. (2015). Enhancing interprofessional education: Integrating public health and social work perspectives. *American Journal of Public Health (1971), 105 Suppl 1*(S1), S106-S108. https://doi.org/10.2105/AJPH.2014.302502

DOI: 10.26681/jote.2024.080102

American Interprofessional Health Collaborative [AIHC]. (2018). *What is AIHC?* https://aihc-us.org/what-is-aihc

American Occupational Therapy Association. (2017). Vision 2025. *American Journal of Occupational Therapy*, *71*, 7103420010. https://doi.org/10.5014/ajot.2017.713002

Bell, J. (2016). Do future occupational therapists require a different skill set?...39th annual conference and exhibition of the College of Occupational Therapists, Brighton and Sussex, England. June 30-July 2, 2015. *British Journal of Occupational Therapy*, *79*(8_suppl), 116–117. https://journals.sagepub.com/loi/BJO

Björklund, K., & Silén, C. (2021). Occupational therapy and physiotherapy students' communicative and collaborative learning in an interprofessional virtual setting, *Scandinavian Journal of Occupational Therapy, 28*(4), 264-273. https://doi.org/10.1080/11038128.2020.1761448

Boshoff, K., Murray, C., Worley, A., & Berndt, A. (2020). Interprofessional education placements in allied health: A scoping review. *Scandinavian Journal of Occupational Therapy*, 27(2), 80-97. https://doi.org/10.1080/11038128.2019.1642955

Brack, P., & Shields, N. (2019). Short duration clinically-based interprofessional shadowing and patient review activities may have a role in preparing health professional students to practice collaboratively: A systematic literature review. *Journal of Interprofessional Care, 33(5),* 446-455. https://doi.org/10.1080/13561820.2018.1543256

Butler, A., Finch, D., Merrill, S. & Simmons, D. (2019). Expanding occupational therapy practice: Student projects in program development and business planning. *OT Practice, Supplement,* 11-13.

Butterworth, K., Rajupadhya, R., Gongal, R., Manca, T., Ross, S., & Nichols, D. (2018) A clinical nursing rotation transforms medical students' interprofessional attitudes. *PLoS ONE, 13*(5), e0197161. https://doi.org/10.1371/journal.pone.0197161

Coker-Bolt, P., Doherty, R., Doll, J., James, L., Keehn, A., Piernik-Yoder, B., & Zakrajsek, A. (2022). Importance of interprofessional education for occupational therapy. *American Journal of Occupational Therapy, 76*(3), 1-14. https://doi.org/10.5014/ajot.2022.76S3007

Creswell, J.W., & Creswell, J.D. (2018). *Research design* (5th ed). Sage.

Demik, D., Paul, C., Nellis, J., Sciegienka, S., Mchugh, M., & Reed, A. (2017). Med school students getting the business. *Physician Leadership Journal, 4*(2), 16-21.

Elkington, S., Summers, C., Pechak, C., Lara, P., & Hernandez, F. (2021). A longitudinal study of interprofessional education in graduate students from rehabilitation sciences. *American Journal of Occupational Therapy, 75*(S2), https://doi.org/10.5014/ajot.2021.75S2-RP391

Fox, L., Onders, R., Hermansen-Kobulnicky, C., Nguyen, T., Myran, L., Linn, B., & Hornecker, J. (2018). Teaching interprofessional teamwork skills to health professional students: A scoping review. *Journal of Interprofessional Care, 32*(2), 127-135. https://doi.org/10.1080/13561820.2017.1399868

George Washington University Milken Institute of Public Health. (n.d.). *Guide to careers in health care consulting*. https://cdn1.mha.gwu.edu/content/0ed9304a1d8949e483a8a33899940738/GWU-MHA_IC 1054_Guide_tp_Careers_in_Health_Care_Consulting_FINAL.pdf

Halle, A.D., Kaloostian, C., & Stevens, G.D. (2019). Occupational therapy student learning on interprofessional teams in geriatric primary care. *American Journal of Occupational Therapy, 73(5),* 1-10. https://doi.org/10.5014/ajot.2019.037143

Hanners, A., Alston, A., & Masciola, R. (2022). The busines of Doctor of Nursing (DNP) education: Practical strategies to apply business concepts in DNP education. *Journal of Professional Nursing, 46*, 45-51. https://doi.org/10.1016/j.profnurs.2022.11.008

King, G., Orchard, C.A., Khalili, H., & Avery, L. (2016). Refinement of the Interprofessional Socialization and Valuing Scale (ISVS-21) and Development of 9-Item Equivalent Versions. *Journal of Continuing Education Health Professions, 36*(3), 171-7. https://doi.org/10.1097/CEH.0000000000000082

Ko, A., Burson, R., & Turner, J. (2022). Strengthening DNP business acumen: An educational intervention. *Journal of Nursing Education, 61*(4), 201-204. https://doi.org/10.3928/01484834-20211128-05

Millsteed, J., Redmond, J., & Walker, E. (2017). Learning management by self-employed occupational therapists in private practice. *Australian Occupational Therapy Journal*, *64*(2), 113–120. https://doi.org/10.1111/1440-1630.12331

Neill, D., Hammer, J., & Linnstaedter Mims, J.K. (2012). Navigating the waters of interprofessional collaborative education. *Journal of Nursing Education*, *51*(5), 291-293. https://doi.org/10.3928/01484834-20120224-05

O'Brien, D., McCallin, A., & Bassett, S. (2013). Student perceptions of an interprofessional clinical experience at a university clinic. *New Zealand Journal of Physiotherapy*, *41*(3), 81-87.

O'Dell, R. M., Belz, N., Bielby, J., Folck, K., Moqbel, M., & Pulino, L. (2015). Breaking down healthcare's silos. *American Health Information Management Association, 86*(9), 26.

Oyeka, I. C. A., & Ebuh, G. U. (2012). Modified Wilcoxon signed-rank test. *Open Journal of Statistics*, *2*(2), 172-176. https://doi.org/10.4236/ojs.2012.22019

Temple, A., & Mast, M.E. (2016). Interprofessional education through service learning with undergraduate health administration and nursing students. *Journal of Health Administration Education, 33*(1), 5-21

Wynarczuk, K.D., Hadley, D.E., Sen, S., Ward, J.F., Ganetsky, V.S., & Sen, S. (2019). Pharmacy, physical therapy, occupational therapy, and physician assistant professional students' perspective on interprofessional roles and responsibilities. *Journal of Interprofessional Care, 33(6),* 832-835. https://doi.org/10.1080/13561820.2019.1572599

Yuen, H. K., Spicher, H. S., Semon, M. R., Winwood, L. M., & Dudgeon, B. J. (2017). Perceptions of occupational therapists on the Patient Protection and Affordable Care Act: Five years after its enactment. *Occupational Therapy in Health Care*, *31*(1), 84–97. https://doi.org/10.1080/07380577.2016.1270480

DOI: 10.26681/jote.2024.080102

Appendix A

Checklist of Elements to Consider for Occupational Therapy Budget Consultation

✓	Element	Accountant Notes
Accuracy		
	Check the math in the budget. Are there any errors?	
	Did the OT team accurately calculate the figures in the budget based on the assumptions listed?	
Assumptions		
	Did the OT team list erroneous assumptions and/or ones for which you question the validity? In other words, did the OT team successfully articulate their plan through their assumptions?	
	Did the OT team fail to list applicable assumptions?	
Revenues and Expenses		
	Did the OT team include expenses that aren't really expenses (for example, did they include an equipment purchase greater than $2,500 as an expense instead of inserting a capital asset purchases line at the bottom after net income)?	
	Did the OT team forget expenses that they should have included?	
	Did the OT team incorporate the idea that it will take some time to "ramp up" with respect to obtaining clients (meaning that they won't be at full capacity on the first day they open their doors)? Do the revenues and expenses reflect a realistic rate of growth over time?	
	It's best to be conservative when budgeting and use realistic figures. Are the revenues and expenses used in the budget conservative, or do you feel some of the figures are "pie in the sky" (aka "looking at the world through rose-colored glasses")?	
	Are there opportunities for additional revenue streams that the OT team should consider including in order to diversify their revenue generation efforts?	
	If a grant is one of the initial sources of funds to start the practice, is there a "plan" for every dollar of the grant funds? Most grants won't allow you to request excess funds that don't have a specific plan.	
Net Income and Growth		
	Did the OT team included a net income figure at the bottom for each period presented?	
	Does the budget show an improvement in Net Income as	

	time passes? If not, what can be done to improve the budget (i.e., increase revenues and/or decrease expenses)? Keep in mind that even for a nonprofit, it is important to demonstrate planned sustainability of the organization through net income growth.	
Formatting and Presentation		
	Did the OT team list the expenses in either alphabetical order or order of greatest to smallest? Did they do the same with the revenue section?	
	Are there any spelling, grammatical or formatting errors (dollar signs used sparingly and consistently, no cents shown, negative numbers shown in parentheses, etc.)?	
Other		
	What other recommendations would you make to strengthen or "polish" this OT team's budget for their business plan?	
	As an accounting student at Creighton, you likely have a lot more business acumen than the members of the OT team (just like they likely know a lot more about OT than you do). Are there any elements or topics you think would be beneficial to share with them in an effort to improve their business plan?	
	If you were in the market to invest in an OT practice, would you invest in this one? Why or why not? Your response to this might be something you could incorporate into constructive feedback for the OT team.	
	What are the strengths of the existing budget (in other words, what did the OT team do a really great job on and should leave as is)?	
Your Deliverable Presentation		
	Pick out what you consider to be the 5-7 most important recommendations to include in your deliverable presentation and populate the deliverable template (one recommendation per slide).	
	Be sure to include a slide at the end of your presentation to allow time for the OT team to ask you questions. After the Zoom presentation is over, email the presentation and this completed checklist to the OT team.	

DOI: 10.26681/jote.2024.080102