

Language Learning and Career Readiness Outcomes of an Undergraduate Speech Pathology Service-Learning Project

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For speech-language pathology students, service-learning provides the necessary hands-on educational experience to prepare them for their future careers in the health professions. Particularly, through service-learning, students can provide support for and get to know clients in a naturalistic setting outside of the more decontextualized clinic environment. Language activities and therapy for children should be contextually based and educationally relevant (Ukrainetz, 2006), and service-learning offers a natural fit for fostering authentic learning opportunities in contextually valid environments. While Kimberly Peters (2011) offered a detailed model for implementing service-learning in undergraduate communication sciences and disorders curriculum, relatively few studies of the efficacy of service-learning pedagogy in this field have been published since that time.

Examinations of service-learning implementation at the graduate level in speech-language pathology have found positive effects on application of course material (Kong, 2014), collaboration with peers (Kong, 2014), career outcomes (Bushman et al., 2021), cultural awareness or understanding of diversity (Diego-Lazaro et al., 2020; Kaf et al., 2011), civic attitudes (Pace et al., 2019), and self-efficacy (Diego-Lazaro et al., 2020; Pace et al., 2019). As Anthony Pak-Hin Kong (2014) has identified, further research is needed on how service-learning as a form of problem-based learning can be applied to teaching communication sciences and disorders. Additionally, the field of service-learning scholarship more

ABSTRACT

Examinations of service-learning in the context of preparing students for health professions in speech-language pathology have been limited (Bushman et al., 2021; Cooper et al., 2013; Diego-Lazaro et al., 2020; Kaf et al., 2011; Kong, 2014; Pace et al., 2019; Pakulski, 2011; Peters, 2011). This study examines outcomes from a service-learning partnership between an undergraduate speech-language pathology course and a local childcare center providing language development programming for preschool children. Data were collected through language learning session recordings as well as surveys and focus groups of the undergraduate students. Outcomes for preschool children included improved language skills in two of three measured areas of language development (total utterance and idea units); outcomes for college students included reinforcement of career goals, exposure to a professional setting, and development of career-related skills.

broadly has identified the need for more focus on community outcomes relative to student outcomes, and few studies of service-learning in speech-language pathology have engaged partners or community members as research participants alongside university students. This study addresses a gap in the literature examining the experiences of undergraduate students completing service-learning experiences within pre-professional speech-language pathology programs, as well as documenting the outcomes of service-learning projects for community partners.

In this study, 36 senior undergraduate students participated in the Strengthening Kids' Language and Literacy (SKILLS) project in Spring 2023. The students visited an early childhood learning center once per week to provide language learning sessions with 26 children of preschool age. The college students received faculty-led language therapy training over a two-week period. Subsequently, the students developed a semester plan and session plans, as well as creating language improvement goals and activities for individual children. Over the course of nine weekly sessions, the college students collected pre- and post-intervention data to monitor the children's progress. Following the completion of the nine sessions, students completed a survey and participated in a focus group discussion to reflect on their service-learning experience and perceived outcomes.

To measure outcomes for the children's language learning progress, the researchers analyzed the total utterance, idea units, and temporal lexicon recorded in the language learning sessions. The total utterance refers to the number of words the child uses in each utterance, while idea unit encompasses subjects and predicates in single words or phrases. Temporal lexicon includes vocabulary indicating time difference in events or actions. Analysis of the session recordings for these three criteria revealed a significant improvement in both total utterances and number of idea units before and after the intervention. Additionally, several key themes emerged from the outcomes college students reported themselves to have gained from the service-learning experience: (1) reinforcement of their career choice in speech-language pathology, (2) development of skills relevant to their career, (3) exposure to a professional environment, (4) improved peer collaboration, (5) the opportunity to practice working with children, and (6) the opportunity to apply classroom learning in an authentic setting. Students additionally reported an awareness of how their chosen career in a health profession is responsible for social outcomes in their state and local communities.

Literature Review

Community-Based Learning in Speech-Language Pathology

Active learning is an essential component of the curriculum that prepares both undergraduate and graduate students to enter health science professions, with such strategies ranging from episodic use of simulations to semester-long clinical placements. Recent scholarship has demonstrated that students value and provide positive feedback on active learning experiences, especially when they receive clear instruction about the purpose of the learning activities, the out-of-class time commitment and expectations, and the evidence of teaching and learning effectiveness of the activities (Shilling et al., 2023). At the undergraduate level, active learning strategies

have not only increased student engagement with complex course material, but also improved sense of belonging in the discipline (Roberts & Lemoncello, 2023). Kong (2014) documented that graduate students in speech-language pathology perceived project-based learning as an effective method of developing collaboration skills, learning course material, and applying course concepts.

Studies of service-learning as one type of active, project-based pedagogy have documented positive impacts on both the graduate students' learning and the community partner or clients. An empirical study of graduate students in communication sciences and disorders who participated in a service-learning literacy project with children in a family homeless shelter found that the service-learning students had increased confidence in their career skills and felt more prepared for a career in speech-language pathology (Bushman et al., 2021). Graduate speech-language pathology students who implemented a program with parent education and child development workshops designed to enhance the quality of mother-child interactions perceived several positive learning outcomes related to their attitudes towards their chosen profession and knowledge of the target population, while the mothers involved in the study also indicated satisfaction with the program (Pace et al., 2019).

Service-learning experiences for speech-language pathology students have been found to benefit students' cultural awareness and development when conducted with a target population to which the student does not belong. In one example, service-learning participation increased speech-language pathology graduate students' positive attitudes toward older adults with dementia (Kaf et al., 2011), while another study found that undergraduate students in a Deaf Studies program who completed a service-learning project with off-campus partners in the Deaf community reported an increase of civic responsibility (Cooper et al., 2013). Increasingly, institutions are discovering the benefits of international experiences for students preparing for careers in health sciences, and study abroad alone, without a service-learning experience, increased graduate speech-language pathology students' cultural awareness, cultural competence, and self-efficacy (Diego-Lazaro et al., 2020). Another study of the outcomes of an international service-learning experience for graduate and undergraduate students in special education and communication sciences and disorders from the United States in Botswana revealed perceived outcomes related to disciplinary skill development and confidence, as well as cultural competencies that included open-mindedness, boundary spanning, and cultural humility (Rose et al., 2021).

While most applications of community-based learning have been studied at the graduate level of speech-language pathology curriculum, applications at the undergraduate level have reported numerous benefits. Peters (2011) provided an early model for implementing service-learning in an undergraduate communication sciences and disorders program in which students implemented an in-school literacy program for elementary students and applied course learning through reflection on their experiences with typically developing children and children with hearing loss. This study reported positive student perceptions of learning outcomes relative to courses without the service-learning component. A study of a service-learning course in introductory phonetics (Roberts & Lemoncello, 2023) found that not only did redesigning the course to include a service-learning component provide students with opportunities to apply

classroom learning and practice professional skills, but it also increased their perceived engagement with course materials and fostered a sense of belonging within the learning community.

Despite focusing on a service-learning project for graduate students, Sylvan's (2022) study of a virtual service-learning project in speech-language pathology offers a possible model for undergraduate service-learning in the field because of its deviation from the practice of involving graduate students as student clinicians. As Sylvan noted, "This deliberate shift in role seemed to provide a new perspective on K-12 children and provided an authentic context to apply course content" (p. 11). Because undergraduate students in speech-language pathology courses typically do not have the discipline-specific skills or knowledge to act as student clinicians, service-learning projects for undergraduate students also stand to benefit from an intentional focus on the learning opportunities presented by other roles and contexts related to the profession.

Career Readiness Outcomes of Service-Learning

Decades of research on service-learning outcomes for students have demonstrated the value of service-learning for supporting students' career readiness and professional skills development. Students who participated in service-learning have demonstrated a greater understanding of career decision-making (Coulter-Kern et al., 2013), improved leadership skills (Groh et al., 2011), and a greater desire for their career to have a social impact (Seider et al., 2011). Service-learning students have additionally experienced improved self-concept (Celio et al., 2011), self-awareness (Furze et al., 2011), cultural awareness (Desmond et al., 2011), intercultural effectiveness (Kilgo et al., 2015), adaptability (Desmond et al., 2011; Furze et al., 2011), and social skills (Celio et al., 2011), all of which translate to professional contexts in a variety of fields. As McMenamin and colleagues (2014) have argued, as numerous disciplines, including the health sciences, increase their focus on public service as a career outcome for students, more exposure to service-learning in the undergraduate curriculum can help students develop professional skills within the context of a sense of public purpose for their future profession.

Methodology

Study Design

The study used a mixed methods design to answer the following research questions: (1) do weekly language learning activities with undergraduate speech-language pathology students improve the language skills of preschool children as measured by total utterance, idea units, and temporal lexicon, and (2) does service-learning in the form of weekly language learning activities for preschool children improve undergraduate speech-language pathology students' perceived career readiness and professional skills? The study used a quasi-experimental design to assess language learning over time for 26 preschool school and a post-project survey and focus group to assess the professional learning outcomes 36 senior undergraduate speech-language pathology students participating in the Strengthening Kids' Language and Literacy (SKILLs) project in spring 2023. Approval was obtained for the study from the University of Central Arkansas Institutional Review Board (IRB#23-012).

Before participating in the SKILLS project, the undergraduate students completed a two-week unit on language therapy training and worked in groups to develop a semester plan, session plans, and language improvement goals for each child. During the project, undergraduate students visited an early childhood learning center once per week for nine weeks to provide one-hour language learning sessions. The undergraduate students were each assigned three of the nine sessions to attend and worked with two preschool children at each session. During each session, the preschool children completed a sequencing comprehension activity, which included determining which action came first, second, third, and fourth when looking at picture cards, with different cards at each session. Each sequencing activity was followed by a language-infused craft activity.

At the end of the project, each child's parent or guardian was provided a final report that included the learning outcomes of the project, the child's progress on sequencing comprehension (correct ordering of the cards) and sequencing production (use of sequencing words to describe the actions depicted on the cards), and recommended activities for continuing to improve language skills at home. Following the completion of the SKILLS project, the undergraduate students completed a survey and participated in a focus group interview to reflect on their service-learning experience and perceived outcomes.

Participants

Preschool participants included 26 children ages 3-5 who attended a private early learning center in a small city in the southern United States. The undergraduate student participants included 36 students enrolled in a senior-level speech-language pathology course, with demographic characteristics reflected in Table 1. Demographic data were not collected for the preschool children participating in the study.

Table 1*Demographic Characteristics of Undergraduate Student Participants*

| Characteristic | <i>n</i> | % |
|---------------------------|----------|-------|
| Gender | | |
| Female | 35 | (97%) |
| Male | 0 | (0%) |
| No response | 1 | (3%) |
| Race | | |
| White | 28 | (78%) |
| Black or African American | 3 | (8%) |
| Asian | 3 | (8%) |
| Other | 1 | (3%) |
| No response | 1 | (3%) |
| Major | | |
| CSD | 34 | (94%) |
| Post-baccalaureate CSD | 1 | (3%) |
| No response | 1 | (3%) |
| Classification | | |
| Junior | 2 | (5%) |
| Senior | 33 | (92%) |
| No response | 1 | (3%) |

Data Collection

Data on the preschool children's utterances were collected by recording each language learning session for transcription and analysis. Each recording and transcription was reviewed by two members of the research team for reliability of data. Data on the undergraduate students' outcomes were collected through completion of a post-project survey consisting of demographic characteristics, 10 Likert-type items, and 12 open-ended questions about their service-learning project experience, and through a focus group interview, which was recorded for transcription and analysis. The focus group interview protocol contained nine open-ended questions, as well as several probing questions to elicit more in-depth discussion. Four focus group interviews were conducted to accommodate all participants, each with a duration between 30-45 minutes.

Table 2

Focus Group Interview Questions

1. What were your personal learning goals for this community-based learning experiences? How would you describe the learning goals of the class?
 2. How would you assess your experience? (Was it a success? Why or why not? What factors contributed to the success or failure of the experience? What obstacles did you encounter and how did you overcome them?)
 3. Describe your interactions with the community partner organization and the children that you worked with. What role did the community partner and/or the children that you worked with have in your learning?
 4. What did you learn about the community or society in general from this experience?
 5. Did this community experience leave you with new questions or concerns?
 6. What connections can you describe between the community-based project and the classroom discussions, required reading, assignments? (Was there a good balance of course time and community activity?)
 7. What role did your instructor play in your community-based project?
 8. What recommendations do you have for future community-based learning courses?
 9. Do you have any other comments you would like to share?
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Data Analysis

To assess the preschool children's language learning, the researchers transcribed the recorded sessions and coded them for total utterance, idea units, and temporal lexicon. Total utterance refers to the total number of words the child uses in a given instance, while an idea unit refers to the combination of a subject and predicate. Temporal lexicon includes vocabulary telling when or in what order an event or action occurred, as well as the frequency or duration of the event or action.

The researchers conducted descriptive statistics of the Likert-type survey items administered to the university students and coded the focus group transcripts and the responses to the open-ended survey questions. Initial coding produced 16 codes, and the researchers constructed memos for each code with a definition and data excerpts from multiple sources of data. The list of codes and definitions were shared with university student participants in a member-checking survey asking participants to read

each of the themes that emerged from the research and rate on a Likert-type scale how similar or different the theme is from their own experience with the service-learning course. After member-checking, the researchers narrowed the list of initial codes to seven themes for discussion.

Results

Research Questions

Research Question 1: Language Learning Outcomes. Analysis of the session recordings comparing total utterance, idea units, and temporal lexicon across all nine sessions for each preschool child participating in the SKILLS project revealed a significant improvement in total utterances and the number of idea units from the first session to the final session. No significant difference was found in temporal lexicon from the first session to the final session.

Table 3

Children's Language Learning Performance

| | Mean in session 1 | Mean in session 9 |
|---------------------------|-------------------|-------------------|
| Total number of utterance | 14.5 | 19.50 |
| Number of Idea Unit | 2.90 | 3.70 |
| Temporal lexicon | 0.60 | 1.00 |

Research Question 2. Career Readiness Outcomes. Analysis of undergraduate speech-language pathology student participants' survey responses and focus group recordings revealed several key themes related to career readiness and professional skills development: (1) reinforcement of their career choice in speech-language pathology, (2) development of skills relevant to their career, (3) exposure to a professional environment, (4) improved peer collaboration, (5) the opportunity to practice working with children, and (6) the opportunity to apply classroom learning in an authentic setting. Students additionally reported an awareness of how their chosen career in a health profession is responsible for social outcomes in their state and local communities.

Table 4*Responses to Likert-Type Survey Items*

| Item on Questionnaire | Mean Rating |
|--|-------------|
| 1. Doing this service learning project helped me to better connect to what I am learning in my class. | 3.69 |
| 2. I feel that my time in a service learning had a positive impact on me as a person. | 3.60 |
| 3. Completing this service-learning project improved my relationship with my classmates and/or instructor. | 3.40 |
| 4. After completing this service-learning project, I have a better idea of what I want to do with my life. | 3.97 |
| 5. This service-learning experience increased my understanding of problems or challenges other people or groups face in society. | 3.11 |
| 6. I learned something new about my community through this experience. | 3.49 |
| 7. My instructor and the staff at my service-learning project location helped me to understand how my work would make a difference for others. | 3.69 |
| 8. I would recommend this project to other students. | 3.51 |
| 9. I wish more of my other courses included service-learning opportunities. | 3.29 |
| 10. Every student should have to do a service-learning in order to graduate. | 3.23 |

Note. 4=Strongly Agree, 3=Agree, 2=Disagree, 1=Strongly Disagree

Discussion**Themes**

After completing member-checking of the qualitative codes and definitions with the undergraduate student participants and receiving participant feedback on the most salient codes, the researchers identified seven emergent themes, all of which related to undergraduate students' career readiness and professional skills development.

Reinforcement of Career Choice. Student survey and focus group responses on the theme of reinforcement of career choice reflected ways in which the service-learning project validated students' prior interests or intentions to pursue a career in speech-language pathology and, more narrowly, to work with a specific population. For example, as one student described, the experience confirmed a prior commitment to working with children:

[The service-learning project] solidified [my career choice] for me. I've always known I wanted to work with kids and so this just really confirmed it for me and kind of gave me an idea of what it would look like. You know, you're going to need to practice more patience or, you know, being flexible...stuff like that. And so I felt that was really good to have going into grad school.

While several participants described having a previous interest in working with children underscored by the service-learning experience, others noted that they did not have an interest in working with children, and that this predisposition too was confirmed throughout the project. As one student responded to her classmate, "I'm in the same boat, but opposite sides. I never want to work in a school setting, ever...I learned that kids aren't so terrible, but I also learned that kids are not my strong suit."

Throughout the open-ended survey responses and focus groups, as students noted the usefulness of reflecting on their interest (or lack of interest) in working with children, they also shared a desire for more community-engaged projects throughout their undergraduate curriculum that would expose them to other populations and other professional settings. Respondents were aware that their service-learning project had led them to reflect on their career choice based on experience with one population in one setting, but that a variety of such experiences would benefit their career planning. As one student reflected, "I wish more of my classes personally did this, even though at times it can be kind of [challenging]. You're putting a lot of effort into it, but if you're passionate towards it and this is what your future is leading you towards, why not go more?"

Career Skills Development. Findings on the theme of career skills development demonstrated how service-learning helped students learn or practice a skill that they viewed as relevant to their chosen career. Students perceived the development of career skills prior to a formal internship or practicum placement as an intended learning outcome of the project. As one participant noted, "I think [our instructor] was looking for us to get experience in more of a low stakes environment, just working on certain activities and tasks that we would probably use in the future as SLPs." Given that the students were undergraduates, this project was the first time that any of the students had been encouraged to practice the professional skills related to speech-language pathology in an authentic setting, with practicum and clinical experiences reserved for the graduate level curriculum. As one student explained, "I would say it was successful [in achieving this learning outcome] because I've never really had experience planning a certain amount of activities or giving even a little bit of an assessment."

Other students similarly shared that lesson planning for the language learning sessions, structured notetaking during and after sessions, and assessment were all reported as discipline-specific career skills. Students noted that lesson planning

required a great deal of “room for error” to “have additional stuff prepared just in case something goes wrong.” Assessment was one of the career skills for speech-language pathology that students emphasized most in their responses. Another student shared the following description of the assessment process that they followed throughout the SKILLS project:

So for each kid we had to document their process and start with a baseline and then where they were at the end of the semester, and describe what their experience was like in the semester, and provide them recommendations that we think that they would benefit from. And I feel like that was challenging in a good way because...I feel like this is going to make us be a little bit more comfortable and have some skills in our pocket when we're doing it for clients.

Students recognized that challenging tasks within the service-learning project would have long-term benefits for them as they gained confidence applying the skills of their discipline.

Another skill that students focused on was adaptability to individualized client circumstances and the ability to use disciplinary and professional skills to make adjustments in the moment. As one student reflected,

I learned that not always will plans work out. You can have something so structured, so organized, go into it head first and be like, “Yeah, we got this!” And then you go in and it’s just not that child’s day. It’s like everything just turns head over heels and you have to be able to think on your feet and adapt weekly to circumstances that are constantly changing.

In addition to responding to children’s personalities and moods, other participants described needing to adapt to respond to cultural differences that they had not anticipated. Several students described learning how to talk to children about family and holiday traditions without assuming that the child was part of a certain family structure or celebrated specific holidays. One student noted that “We’ve been taught that, you know, individualization is so important because everyone is not the same,” but it was not until she had an interpersonal interaction that challenged her cultural norms that she grasped that families “are not like what we have seen in the movies and shows...and so we’ve got to remember to be very sensitive to family structures.” Cultural agility, then, represented an important application of adaptability for several participants in the SKILLS project.

Exposure to a Professional Environment. As students discussed their service-learning experience, they reflected on how the project compared to the environment they expected to work in as professionals. Students perceived the exposure to a professional environment as another intended outcome of the service-learning project, and described the project as “a little bit of a preview of what a therapy session could look like.” As undergraduate students, few of the participants had experience in a clinical setting, and exposure to the environment increased their level of comfort. As one student summarized,

I think it's definitely a beneficial experience just to expose you if it was your first time. Because I think it was probably most of our first time in a clinical setting with a child. So I think that it was really beneficial and will probably make us a lot more comfortable if [we] are going on to grad school.

Students mentioned being exposed to environmental factors that included expectations for professional behavior and demeanor, professional communication styles, and distractions in the physical environment, and they perceived being “immersed in that setting” as an important learning experience in its own right.

One student who had previous experience working with children noted the difference between how they were accustomed to interacting with children and the expectations of a professional setting, stating that the service-learning project “gave [them] a glimpse of...the more professional setting.” As she elaborated, “You’re here to do therapy with them. You’re not trying to entertain them and play and stuff like that.” Students described experiencing growth from the first session in the professional environment, when they were uncertain of what to expect, to the final session, when they felt more confidence as a result of “exposure of what to expect.” Overall, students described the professional environment as a space in which they increased their confidence through exposure and experimentation.

Improved Peer Collaboration. Students reported that the service-learning project required them to collaborate with their classmates, which they did while planning language learning activities and during a mid-semester check-in with other students paired with the same children. Students described the mid-semester checkpoint as a particularly beneficial aspect of the project, as it provided an opportunity to identify “what was working and what wasn’t working” as well as to learn from “the things that they did wrong.” Students described peer collaborations as a space where they could share mistakes, be vulnerable, and support one another.

While most peer collaboration took place in class rather than in the service-learning project setting, one student shared an example of a time when a classmate helped her adapt to an unexpected situation in one of the language learning sessions. The student recalled,

I know my first session, my kids were— they really wanted to do this coloring activity with [another student]. And so she allowed me and my kids to actually get involved with her kids. So it actually really helped me out because I wasn't stressing and they weren't running [around the facility].

The lesson that the student took away from this instance of peer collaboration was “don’t be afraid to ask for help.” Other students echoed this sentiment in describing examples of how collaborating with classmates who were working with the same child allowed them to gain a more complete understanding of the child’s personality, behavior, and background.

Experience Working with Children. Given that the target population for the service-learning project was preschool children between the ages of 3-5 years, many of the undergraduate student participants reported gaining experience working with children as one of the project outcomes. Specifically, participants gained awareness of developmental expectations for young children. As one noted, “My kids sometimes were really, really motivated to do certain activities and other times they were wanting nothing to do with any of it...it was kind of hard to keep them motivated.” Participants highlighted the importance of patience and flexibility in working with children on language learning tasks in order to manage their attention spans and level of

engagement with particular topics or activities. They described experiences such as “learn[ing] how to successfully redirect the students whenever they would get very distracted,” using reinforcements like stickers, and “explain[ing concepts] in a way that incorporates as much action and play as you can.”

Several participants shared stories of ways in which they adapted their lesson plan to accommodate children’s behavior or interests and observed positive results. As one student recalled,

I noticed like my kids were having a hard time paying attention and staying interactive, and so something we started doing was like acting out each card [in the sequencing activity]...And then that also helped them remember, because then in the post-assessment, even though they were tired, they would like act it out as they were choosing each card.

Another student shared a similar experience, offering,

I found that my two— they really liked gesturing and miming things out. So if we were discussing baseball, we would go “Whack! You hit the baseball. And then you run to the base.” And they both seemed to like doing it. It’s more of a game. And I think that probably helped them to learn it later.

While participants shared many examples of lessons that they learned through failure, their repeated experiences with children provided ample opportunities to reflect, adapt, and observe success in their language learning activities.

As students frequently engaged in a process of trial and error, several of them emphasized the importance of treating children as people. One described the importance of “just getting to know the kid and them getting to know you” in order to establish rapport. Another explained the importance of being transparent with any client, child or adult, when explaining the structure of a session, stating, “They deserve to know what’s coming next. It makes them more calm, cool, and collected, as much as they can be as children, and I feel like, you know, they’re people and they deserve to know what they’re going to be entering into.”

Ultimately, students came away from the service-learning project with experience that allowed them to recognize that children are individuals who have different backgrounds, preferences, personalities, and experiences. Furthermore, students observed through experience that children might behave differently from one session to the next, and that individualizing their approach to the child and the particular session helped them achieve the language learning goals.

Authentic Application of Learning. The final theme that emerged from students’ open-ended survey responses and focus group discussions was that students valued the opportunity service-learning provided to apply what they learned in the classroom in a real-world setting.

In some ways, the experience of learning through application created discomfort. As one student described, “I was kind of like doing it on the go. And so I felt like it was harder [than classroom learning].” In order to allow students to operate outside of their comfort zones and grow as a result, the instructor took a “more hands-off” approach at the service-learning site. As one student described, “I think that was her way of doing it because she wanted us to learn more,” with several participants noting that the

instructor remained present through each language learning session as a resource to help students troubleshoot challenges or redirect children who strayed from their group.

Students recognized that learning concepts and skills in a classroom, even with case studies or simulated scenarios, is not the same as applying them in an authentic context. In discussing the contrast between classroom learning and authentic application of assessment, one student explained,

[We have] learned a lot about pre- and post-assessment and intervention in our lectures and our slides. And we have done some reports and SOAP notes before, but they've always been based off fake scenarios that were given. And so it was really cool to actually do that, but with you actually taking the data and you actually doing the intervention, because it was just something we had learned all throughout our undergrad and now we're actually like doing it before we have to go to grad school and do it on an actual client. I think that was a central connection that needed to be made, and so I'm glad that we got to do that.

Another participant emphasized the importance of learning “how it works with actual children and not just a case study.” Students expressed excitement seeing familiar concepts from the classroom come to life in their interactions with children. As one shared, seeing how children performed on language learning activities “after we’ve learned it about it for so many semesters was kind of cool to see.”

Implications for Practice

The results of this mixed methods study demonstrated positive outcomes for both the undergraduate students and the community members involved in the service-learning project, with the preschool children experiencing language learning improvement in two of the three areas measured and undergraduate students reporting perceived improvement in several areas of career readiness and professional skills development. Students also reported that the community-based project had a positive impact on their self-concept, relationships, understanding of course concepts, and understanding of the community. Students recognized and valued the role that their instructor played as a facilitator of the service-learning experience, including in managing the partnership, training students on needed concepts and skills, and structuring the students’ planning, implementation, and assessment of the project.

This study contributes to the evidence base for institutions to provide undergraduate students in pre-professional health science programs with multiple and diverse opportunities to interact with target populations and practice professional skills as they refine their career choices. Exposure to professional and community contexts allows students to move from the discomfort of unfamiliar settings and situations towards confidence in applying disciplinary knowledge, adapting to the unexpected, and learning through repeated experience. While the instructor plays a critical role in facilitating any active learning environment, students must feel empowered to learn by doing and have opportunities to seek and offer support.

Limitations and Future Directions for Research

This study used a quasi-experimental design to assess the children’s language learning and a non-experimental design to gather students’ perceptions of their learning outcomes of the service-learning project. While excluding any of the children at the early

learning center from the language learning activities to create a control group was neither practical nor desirable from a partnership standpoint, the lack of a control group limits the validity of the language learning findings. Future studies of language learning might include a second community partner or recruit preschool children from the local community to participate in the study as members of a control group. Similarly, students' outcomes were limited to those that students perceived and reported; future research should expand upon these findings by incorporating pre- and post-project assessments of students' civic attitudes, career skills, or other intended outcomes in addition to soliciting open-ended responses through surveys and focus group discussions.

Conclusions

Service-learning remains an important and effective means of achieving outcomes for students, faculty, institutions, and communities. This study offers support for the use of service-learning in undergraduate speech-language pathology programs as a means for concretizing students' career aspirations, building students' confidence through experience working with target populations and in professional settings, reinforcing and extending classroom learning through application, and supporting students' development of a variety of professional skills. In addition to these and other well-documented benefits for student learning, service-learning connects faculty and students with the community through reciprocal partnerships, shared goals, collective impact. Instructors and administrators across academic programs who are interested in supporting students' career development and developing stronger communities can achieve these goals together with students and community partners through service-learning.

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