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RESEARCH ARTICLE (PEER-REVIEWED)

## Fostering Inclusive Practice in Speech–Language Pathology Undergraduates: Service-Learning Focused on Cultural Diversity

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### Abstract

This study explores the impact of a community-engaged service-learning project designed to foster undergraduate students' cultural humility whilst supporting young children's literacy and understanding of diversity. Over the course of 8 weeks, undergraduate students majoring in communication sciences and disorders delivered reading instruction enriched with cultural diversity themes to children ages 6–8. Pre- and post-program surveys revealed growth in students' awareness of cultural diversity, personal development and clinical insight. Simultaneously, assessments of participating children demonstrated significant improvements in their ability to define diversity, apply inclusive thinking and summarise stories. The findings highlight the reciprocal benefits of service-learning – promoting culturally responsive practice and a commitment to equity and social change among future healthcare professionals whilst fostering inclusive awareness in early childhood learners.

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## Keywords

**Speech–Language Pathology; Service–Learning; Cultural Diversity; Undergraduate Education; Early Childhood; Community Engagement**

## Introduction

Cultural diversity encompasses differences within and among individuals, including variations in language, traditions, values, beliefs, customs and other forms of cultural expression ([Salas et al. 2013](#)). As the United States becomes increasingly diverse, with projections indicating that minority populations may represent approximately 50 per cent of the total population by 2050 ([Colby & Ortman 2015](#)), the need for culturally responsive healthcare professionals continues to grow. Cultural humility is essential for speech–language pathologists to provide effective and equitable services to clients from diverse backgrounds. It emphasises ongoing self-reflection, lifelong learning and an awareness of how cultural variables shape values, beliefs and communication practices, both across and within cultural groups ([Bharadwaj & Daniel 2023](#)). By embracing cultural agility, speech–language pathologists can enhance their practice and better support the diverse populations they serve, ultimately improving patient outcomes and clinical effectiveness in the field.

To support the development of professional competencies, master’s programs in speech–language pathology are required to provide academic and clinical experiences focused on culturally and linguistically responsive practice in order to maintain program accreditation. In response, graduate programs have increasingly sought to promote students’ cultural humility by offering dedicated multicultural coursework or by integrating these topics across the curriculum ([Higby et al. 2024](#)). However, these efforts have largely centred on graduate education, resulting in limited exposure for undergraduate students majoring in speech–language pathology ([Krishnan 2021](#)). This emphasis reflects the structure of professional training in the United States, where undergraduate degrees in communication sciences and disorders are not vocational and do not confer eligibility for independent clinical practice. Although research suggests that introducing cultural diversity concepts earlier in professional preparation allows students more time to reflect on and apply these principles in meaningful ways, current educational practices provide relatively few opportunities for undergraduate students to develop these foundational skills ([Jaiswal et al. 2023](#)). This study aimed to provide experiences related to cultural diversity to undergraduate students majoring in communication sciences and disorders, with the goal of positively affecting their perspectives on cultural diversity and preparing them for future practice in an increasingly diverse field.

In today’s information age, where knowledge is readily accessible, rote memorisation may no longer suffice for effective learning. Recognising this shift, higher education across various disciplines has increasingly embraced active learning strategies, including service–learning experiences ([Salam et al. 2019](#)). Service–learning is an experiential learning pedagogy that extends education beyond the classroom, encouraging students to actively engage in their learning process whilst developing civic knowledge and skills ([Bringle & Hatcher 1996](#)). Whilst traditional service–learning emphasises student learning and community benefit, critical service–learning goes further by explicitly positioning service as a vehicle for social change, aiming to reduce bias, challenge systemic inequity and foster community transformation rather than simply providing service ([Mitchell 2008](#)). Rather than treating community engagement as a charitable act, critical service–learning reframes students as agents of equity who develop both professional competencies and a commitment to inclusive practice ([Mitchell 2015](#)). This approach is particularly valuable in healthcare education, where professionals must navigate complex social and cultural dynamics to provide equitable care. Consequently, service–learning approaches have gained significant traction in speech–language pathology education, offering a more practical and socially engaged learning experience ([Goldberg et al. 2006](#)).

Service-learning approaches have been adopted in healthcare education to enhance future clinicians' understanding of cultural diversity. These experiences provide students with opportunities for transformational learning through direct interactions with culturally diverse populations ([de Diego-Lázaro et al. 2020](#); [Jarosinski et al. 2024](#)). The present study explored a service-learning approach in which college students gain cultural diversity experience by preparing and teaching cultural diversity lessons to children. This method aligns with the pedagogical principle that teaching is one of the most effective ways to deepen one's own learning ([Fiorella & Mayer 2013](#)). Through this process, students can strengthen their understanding of cultural diversity whilst simultaneously fostering inclusive attitudes in young children.

The importance of cultural diversity education for children in the United States has been widely recognised ([Akkari & Radhouane 2022](#)), as it promotes better communication, critical thinking and conflict resolution skills among children ([Ransom 2001](#); [Reid et al. 2019](#)). Furthermore, early education on cultural diversity helps young minds develop empathy, appreciate differences and cultivate open-mindedness ([Yang et al. 2024](#)). Early childhood is a crucial period for setting the foundation for lifelong attitudes and beliefs. Engaging in cultural diversity activities introduces children to the concept of difference in a positive light, allowing them to understand that people may have different traditions, languages and experiences, which are all equally valuable ([Rutland et al. 2024](#)). Therefore, educators and researchers emphasise the importance of creating inclusive learning environments that celebrate and respect all backgrounds, fostering cultural awareness and cultural humility to prepare children for a diverse and interconnected world.

The current study examined the impact of a service-learning project on college students and children, focusing on reading comprehension instruction enriched with cultural diversity content. We collected data through pre- and post-program surveys from college students and pre- and post-program assessments from children to address two primary research questions. The first question investigated how the project might influence participating college students' perspectives on cultural diversity. We hypothesised that by preparing and conducting sessions to teach children about cultural diversity, the college students would enhance their own understanding and appreciation of cultural diversity. The second research question examined the project's impact on children, specifically their views on cultural diversity and their reading skills. We hypothesised that the project would enhance children's understanding of diversity and improve their story summary skills. By addressing these questions, the study aimed to create a mutually beneficial learning experience for both college students and children, fostering cultural awareness and linguistic development.

## Method

### PARTICIPANTS

A total of 38 undergraduate students enrolled in CSD 3320: *Language Disorders in Children* participated in the service-learning project. Participation in the project was mandatory for the course; however, participation in the research component was voluntary. Of the 38 students involved in the project, 37 completed the pre-project survey, and 36 completed the post-project survey. All students were majoring in communication sciences and disorders. Informed consent was obtained from all participants prior to data collection, and all procedures were approved by the Institutional Review Board at the University of Central Arkansas (IRB #23-171). Demographic data were based on the full cohort of 38 students: 36 identified as female (94.8 per cent) and one as male (2.6 per cent), and one did not report gender (2.6 per cent). The mean age was 20.81 years (SD = 1.47). In terms of ethnicity, 30 students (78.9 per cent) identified as White/Caucasian, four (10.5 per cent) as Black/African American, one (2.6 per cent) as Asian, one (2.6 per cent) as American Indian/Alaska Native and two (5.4 per cent) as another race. The class composition included 27 juniors (71.1 per cent), ten seniors (26.3 per cent) and one post-baccalaureate student (2.6 per cent). To maintain participant anonymity, demographic information was not collected as part of the research

surveys; therefore, demographic characteristics could not be linked to the 37 pre-project and 36 post-project survey respondents.

A total of 24 children, all enrolled in a university outreach program dubbed CubsREAD (Reading Enrichment and Development), participated in this project. Caregivers were informed that the program was affiliated with a research study conducted by the communication sciences and disorders program instructor and students. Informed consent was obtained from caregivers, and when appropriate, assent forms were signed by the children. Participants included 13 boys (54.2 per cent) and 11 girls (45.8 per cent), with an average age of 6 years 3 months (range: 5–8 years). Any child whose caregiver sought additional reading support for the child's reading development could enrol, as no diagnostic documentation was required. All measurements and assessments were conducted in accordance with the guidelines set forth by the Institutional Review Board at the University of Central Arkansas (approval #23-171).

## PROCEDURE

### Cultural Diversity-Enriched Language Program Development

The first author, along with two research assistants, developed a series of cultural diversity-enriched language programs designed for eight sessions. These programs explored various aspects of cultural diversity, including music, clothing, food, sports, language, names, holidays and abilities/disabilities. Each program included a definition of diversity, short videos, guided discussions about the video content, a relevant reading passage and comprehension questions. Additionally, the programs featured interactive scenarios that allow students to practice both positive and negative responses (e.g., how to respond when encountering a new friend wearing unfamiliar clothing). Each section included detailed scripts to guide students' preparation before the sessions and to support their implementation during the sessions. After the initial development, a psychologist (the second author) reviewed the program and provided feedback, which was incorporated into the final version of the program. The program was designed with a dual purpose: to build students' clinical competencies and to embody the principles of critical service-learning (Mitchell 2008, 2015). In accordance with this framework, session themes, particularly those addressing language, abilities/disabilities and cultural traditions, were deliberately selected to challenge implicit bias, cultivate inclusive thinking and prepare students to recognise and respond to inequities within their future professional practice.

### College Student Training

Because the participating undergraduate students had limited prior clinical experience, the first author provided three training sessions prior to intervention implementation. The primary focus of the training was preparation for intervention delivery and assessment procedures. Training included a brief overview of service-learning and essential project logistics (e.g., schedules, locations, team assignments and documentation expectations). Students then practised implementing intervention sessions with peers, reviewed instructional materials for all eight sessions and received feedback to support instructional fidelity. Training also addressed administration of post-program assessment measures, with explicit instructions on avoiding cues or feedback. Documentation procedures, including the session plan (Appendix 1) and audio-recording protocols, were reviewed, and templates were provided. Ongoing support was available to students throughout the eight service-learning sessions.

### Service-Learning Program Administration and Program Implementation Monitoring

Over 8 weeks, the service-learning program was delivered in a small-group intervention format. During each 50-minute session, pairs of college students worked with one or two children. The college student-child groups met simultaneously in three separate classrooms within a campus building. The instructor and three research assistants were present at each session to provide support and feedback. The program

comprised four main components: (1) an introduction to a specific cultural diversity theme accompanied by videos; (2) reading passages related to the theme; (3) interactive practices; and (4) a craft activity followed by a caregiver conference.

Program fidelity was monitored to ensure consistency and alignment with the intended instructional design. One session was selected for formal observation because it occurred after student clinicians had completed initial training and multiple sessions of implementation, allowing fidelity to be evaluated under stable instructional conditions rather than during early-stage skill acquisition. The second author conducted the observation using a structured fidelity checklist assessing four domains: session preparation, rapport building, goal clarity and implementation quality. Overall fidelity was high, with most checklist items rated as fully achieved. Two items were rated as partially achieved, reflecting minor inconsistencies in the pacing and clarity of transitions. These partial ratings did not compromise the delivery of essential program elements and therefore did not substantially affect overall fidelity. The resulting mean fidelity score (1.83 out of 2.00) indicated strong adherence to the program protocol. The instructor and second author discussed the partially achieved items and implemented targeted adjustments in subsequent sessions. These results were also shared with student clinicians to support reflective practice and continuous improvement.

## ASSESSMENT MATERIALS

Two survey instruments were administered to the college student participants: a pre-program survey and a post-program survey. The pre-program survey consisted of 13 Likert-scale questions rated from 1 (strongly disagree) to 5 (strongly agree) and four open-ended questions, with the survey available in [Table 1](#) for multiple-choice questions and [Appendix 2](#) for open-ended questions. The post-program survey included ten Likert-scale questions and 12 open-ended questions, detailed in [Table 2](#) and [Appendix 3](#). The survey questions were adapted from the service-learning assessments developed by the [University of Indianapolis Center for Service-Learning and Community Engagement](#) and the [University of Nebraska Omaha Service-Learning Academy \(2025\)](#).

At the end of each session, children were asked three post-program questions: a story summary question, such as ‘Summarize the *All About the Trumpet* story we read together’; a definition of diversity, such as ‘What is diversity?’; and a diversity application question, for example, ‘If your friend is listening to music you’ve never heard before, how would you respond?’ No prompts or cues were provided for these questions. However, if children were unfamiliar with the term ‘summarise’ in the story summary question, college students rephrased it once as ‘Can you tell me about the story we read together?’

## DATA ANALYSIS

### Coding Process for College Student Surveys

Qualitative analysis of college students’ survey responses was guided by thematic analysis as outlined by [Braun and Clarke \(2006\)](#), using a deductive–inductive approach. Deductively, coding was informed by the project’s conceptual focus on cultural diversity and difference in service-learning contexts. Two research assistants not involved in data collection anonymised students’ survey responses by assigning each a random number. Two independent reviewers then read all statements, selecting those related to cultural diversity, given the project’s focus. The selected statements captured reflections on cultural diversity and differences before, during and after the service-learning project. The agreement on diversity-related statement selection was 96.3 per cent, with discrepancies resolved through discussion. Each reviewer then independently labelled selected statements, grouping these labels into emerging common themes across students. Labels, themes and supporting student statements were shared and discussed during regular meetings. In the final coding confirmation phase, both reviewers examined each code quotation and made necessary modifications.

Table 1. Descriptive statistics of the students' responses to Likert-scale pre-experience questions (N = 37)

Question	M	SD
1. The community service I will do through this course will help me to better understand the lectures and readings in this course.	4.41	0.68
2. The community service aspect of this course will help me to see how the subject matter I will learn can be used in everyday life.	4.57	0.64
3. Performing service in the community will help me clarify which major I will pursue.	3.92	1.03
4. The community service in this course will help me clarify my career plans.	4.32	0.70
5. I feel that the community service I will do through this course will benefit the community.	4.35	0.63
6. I can make a difference in my community.	4.59	0.49
7. Addressing community needs affects the quality of life in my town/city.	4.32	0.62
8. University professors and staff should help students think about how their academic work relates to challenges in their communities.	4.46	0.55
9. Growing up, I interacted with people of different races and backgrounds frequently.	3.70	1.24
10. The community service involved in this course will make me more aware of my own biases and prejudices.	4.11	0.80
11. This service-learning course will help me become more comfortable working with people different from myself.	4.62	0.54
12. I feel comfortable working with people who differ from me in terms of race and ethnicity.	4.49	0.50
13. I feel comfortable talking with people who have a different background from me.	4.57	0.50
Average	4.34	0.69

The first round of group coding showed an agreement rate of 85 per cent, prompting the coders to meet and discuss discrepancies. A 100 per cent consensus was reached in the second round of coding and tallying.

#### Scoring Process for Children's Responses to the Post-program Questions

Children's responses to the three post-program questions were audio-recorded with caregiver consent and subsequently transcribed by student clinicians who worked with the individual children. To ensure accuracy, two research assistants independently verified all transcriptions by comparing them with the original audio recordings. Data were excluded from analysis in cases where audio file errors or missing recordings prevented verification. The inter-rater agreement between the two research assistants was calculated at 93.4 per cent. In cases of discrepancies, a third listener (the first author) reviewed the contentious sections and made the initial determinations. These determinations were then discussed with the two research assistants to reach a final consensus.

Subsequently, two researchers independently evaluated the children's responses to the three questions. The rubrics and sample responses for each point were developed by the first author, who specialises in child language development and differences, prior to program administration. These were then reviewed and revised by the other authors. A 4-point scale was employed consistently across all three questions: 0 points for no response or 'I don't know,' 1 point for basic understanding, 2 points for moderate understanding and 3 points for advanced understanding. Detailed descriptions and examples for each score across the three questions are provided in Appendices 4–6. The two researchers initially reviewed and discussed the rubrics and sample responses together. They then collaboratively scored two children's responses as a calibration exercise. Following this, they independently scored all remaining children's responses. The initial inter-rater agreement between the two researchers was 95.6 per cent. Any discrepancies in scoring were subsequently resolved through discussion, leading to a consensus on the final scores.

## Results

### PRE-EXPERIENCE SURVEY

Thirty-seven of the 38 enrolled students completed the pre-experience survey. As shown in [Table 1](#), students reported generally positive attitudes towards service-learning and high expectations for the upcoming experience, with item means ranging from 3.70 to 4.62. Lower ratings were observed for items reflecting students' prior exposure to racial and cultural diversity, whereas higher ratings reflected anticipated benefits of service-learning, including increased comfort working with diverse individuals and greater awareness of personal biases. Overall, this pattern suggests that students entered the course with strong motivation for service-learning but more varied prior experiences with diverse populations.

Out of 152 total comments, diversity was mentioned 37 times. Whilst these comments were not extensive enough to develop distinct themes, three primary categories emerged from the analysis: the importance of diversity (three comments), concerns regarding diversity within our community (ten comments) and the expectation that service-learning will enhance their experiences with diversity (24 comments). For instance, Student #03 emphasised the importance of diversity, stating, 'I believe diversity in your community can make one of the biggest differences in enhancing education. Whenever people are diverse, they have many different experiences and can share beneficial information.' Regarding concerns about diversity, Student #12 expressed, 'Lack of diverse interactions in the community concern me.' Student #21 articulated expectations for service-learning's role in enhancing diversity experiences, stating, 'I think it [service-learning] can enhance your education by allowing you to apply your knowledge as well as be exposed to diverse populations and be socially aware of problems many of your clients may face.'

### POST-EXPERIENCE SURVEY

Thirty-six of the 38 enrolled students completed the post-experience survey. As shown in [Table 2](#), students reported generally positive perceptions of the service-learning experience, with item means ranging from 3.78 to 4.42. Higher ratings were observed for items reflecting perceived personal impact, strengthened relationships and understanding the value of their service, whereas lower ratings were associated with broader programmatic requirements (e.g., whether service-learning should be mandatory for graduation). Overall, the pattern of responses suggests that students perceived the service-learning experience as meaningful and beneficial whilst holding more varied views regarding its required inclusion in the curriculum.

Out of the 456 total student statements analysed, diversity was mentioned 115 times. The qualitative data from these statements were organised into three primary themes – enhanced academic learning, clinical competence and personal growth – each of which was supported by subthemes, as shown in [Table 3](#).

**Table 2.** Descriptive statistics of the students' responses to Likert-scale post-experience questions (N = 36)

Question	M	SD
1. Doing this service-learning project helped me to better connect to what I am learning in my class.	4.17	0.91
2. I feel that my time in a service-learning project had a positive impact on me as a person.	4.39	0.93
3. Completing this service project improved my relationship with my classmates and/or instructor.	4.39	0.72
4. After completing this service project, I have a better idea of what I want to do with my life.	4.33	0.71
5. This service-learning experience increased my understanding of problems or challenges other people or groups face in society.	3.81	1.00
6. I learned something new about my community through this experience.	3.83	0.87
7. The representatives where I completed my service project helped me to understand how my work would help make a difference for others.	4.42	0.64
8. I would recommend this project to other students.	4.25	0.99
9. I wish my other courses included service-learning opportunities.	3.86	1.12
10. Every student should do a service-learning project in order to graduate.	3.78	1.33
Average	4.12	0.92

**Table 3.** Diversity-related thematic structure: primary themes, associated subthemes and number of references from student post-survey (N = 36)

Primary themes	Subthemes	Number of references
Enhanced academic learning	Applying diversity lessons from classroom to real-world situations	12
Clinical competence	Diverse clientele	26
	The value of early education on diversity	34
	Understanding contextual influence on the concept of diversity in children	7
Personal growth	Recognising the significance of diversity learning	28
	Embracing community diversity and active involvement	8
Total		115

## Theme 1: Enhanced Academic Learning

One of the primary objectives of the service-learning project was to provide undergraduate students with real-world experiences that enhance their understanding of course materials – an opportunity often unavailable until graduate-level training. Specifically, for this project, we aimed to observe how students could apply their classroom knowledge about diversity to practical situations. Students demonstrated their ability to connect classroom learning with real-world observation during their service-learning experiences. For instance, Student #13 noted, ‘Diversity was made a really big point in our class lectures in regards to how people from different backgrounds and different cultures may learn things or understand different concepts different than I may learn and understand them.’ Similarly, Students #03 and #32 remarked, ‘In class we talk a lot about the diversity of different disorders that may be seen within individuals. For example, in class we discuss differences in disorders and how each one is diverse’ and ‘In class, we also talked about how to deal with/respond to different behaviors, so that helped me as well during the sessions,’ respectively.

## Theme 2: Clinical Competence

The second theme that emerged from analysis of the student statements was clinical competence, which was the most frequently referenced theme, appearing in 59 per cent of the statements. Although the emergence of this theme was expected, as this represented many students’ first clinical experience, students’ reflections extended beyond general skill acquisition. Rather, they demonstrated growth in culturally responsive clinical reasoning, particularly in relation to working with diverse child populations. This theme was further categorised into three subthemes: diverse clientele, the value of early education on diversity and understanding contextual influence on the concept of diversity in children.

*Diverse Clientele* Students expressed that they learned the importance of recognising individual differences, noting that even the same person can behave differently from session to session. For instance, Student #04 observed, ‘Working with my kid and watching others work with theirs, I noticed how different each child is and how unique their strengths and weaknesses are.’ Similarly, Student #30 remarked, ‘I learned that the child you are working with might not always cooperate. I was expecting him to act the same and behave well every week, so I learned how to deal with that and adapt to different behaviors, both good and bad.’ Additionally, students discovered that a label of disability does not define a person’s capabilities. As Student #28 stated,

*I learned that even if someone has a disability with learning or reading, that it does not mean they are not smart. Our client was very smart in many aspects and seemed to have a good work ethic. His ability to read has not stopped him from partaking in things he enjoys and he has not let it discourage him yet.*

The importance of understanding clients’ individual backgrounds and cultures was also noted by students. Student #29 noted, ‘[I] understood diversity more and how it is especially important in our field as we will treat a multitude of people all from diverse backgrounds and cultures.’ Finally, students recognised the diversity among children and the necessity of developing individualised sessions. They highlighted the need for flexibility in meeting each client’s unique needs. Student #13 stated, ‘Each kid may learn differently than the next, so making adjustments and doing the best to make sure they understand everything effectively,’ whilst Student #27 added, ‘All kids have their own unique challenges and abilities, and as a future SLP I will have to be very flexible in my therapy approaches.’

*The Value of Early Education on Diversity* Students reported that this project enhanced their understanding of children’s perspectives on diversity and highlighted the importance of early diversity education. They gained new awareness about how children view and understand diversity, with Student #03 noting, ‘I am now more aware of the way children see diversity.’ Many students emphasised the significance of introducing diversity concepts at a young age. Student #12 stated, ‘It’s so important to stay educated on diversity and teach children about it from an early age.’ Student #33 echoed this sentiment, saying, ‘It is

never too early to teach children the importance of diversity.’ Notably, students were surprised by children’s capacity to comprehend cultural diversity concepts. Student #15 shared an observation:

*I didn’t expect there to be so much growth throughout the course of the two months of seeing our client. She began to fully understand the concept of diversity and was applying it to other aspects of her life in her answers. It was cool to see that our lessons were actually making an impact on her.*

Students also recognised the need to tailor diversity education to children’s level of understanding and daily experiences. Student #03 observed, ‘for the children, we talk about diversity in a way that it relates to their life as children. Within the children’s aspects we talk about music, clothing, and food which they see in their everyday life.’

*Understanding Contextual Influence on the Concept of Diversity in Children* Several students emphasised the importance of caregivers’ influence on children’s perspectives regarding diversity. Student 3 noted, ‘I believe that I learned a lot about a child’s upbringing can influence their views on things. I think in the future it is important to remember that each child is brought up in a different manner.’ Some students expressed concerns about the potential for caregivers to negatively impact their children’s understanding of diversity. For instance, Student #06 highlighted this concern, noting, ‘I just learned that the parents of my child need to watch what they say around their kids. Kids learn how to be prejudiced toward different groups because of their parents.’ Students shared their aspirations to promote cultural diversity in raising their own children. Student 3 reflected that

*I know parents can sometimes have a negative connotation with their children learning about diversity, but I feel as if it really benefits the children. Whenever I have children, I believe that they would benefit from something like this because I want them to know that everyone is different and to learn about some of the stuff that makes us different.*

### Theme 3: Personal Growth

The third theme that emerged was personal growth. Students acknowledged the importance of first educating themselves about cultural diversity in order to effectively teach it to children. They also recognised their potential to contribute to the community by fostering an environment that embraces diversity.

*Recognising the Significance of Diversity Learning* Students reported that their participation in this service-learning project deepened their understanding of diversity’s importance. As Student #24 stated, ‘This also opened my eyes to diversity in the world.’ This newfound awareness sparked a desire for continued learning about diversity among many participating students. Student #21 expressed this sentiment, saying, ‘I would like to learn more about the different topics of diversity. I never thought of diversity being such a range of topics and it opened my eyes to what true diversity is and can be.’ This comment highlights how the project expanded students’ conceptualisation of diversity beyond their initial understanding. The crucial role of educators in shaping students’ perspectives on diversity was highlighted in the feedback. Student #07 noted, ‘Dr. [instructor’s name] made a strong positive impression on me regarding the importance of diversity and knowing the importance of giving to the community.’ This underscores the significant impact that instructors can have in shaping students’ perspectives on diversity and community engagement. Students recognised that to effectively teach diversity, they needed to deepen their own knowledge and understanding. Student #21 articulated this realisation, stating,

*The service-learning made me a more well-rounded individual who sees a greater value in teaching diversity to young children as well as learning more about diversity myself to further my knowledge and share it and implement it in my sessions as a future clinician.*

This reflection demonstrates how the project not only enhanced students' current understanding but also motivated them to continue learning about diversity for their future professional practice.

*Embracing Community Diversity and Active Involvement* Students' reflections revealed a reciprocal relationship between themselves and the community regarding diversity. Through their experiences, students gained a deeper appreciation of the community's diverse nature whilst also recognising their own potential to contribute to and enhance this diversity in the community. This mutual learning process was evident in several student comments. For instance, Student #19 noted, 'I also learned more about the diversity there is in this town,' and Student #13 remarked, 'I got to see the diversity of the community that we live in when beforehand I didn't really know how diverse our community was in many different aspects of life.' These observations highlight the nature of the project in terms of community diversity awareness. The service-learning project also provided unique opportunities for interaction. Student #17 appreciated, 'I liked getting to interact with and help members of the community with whom I would not have normally come in contact with in this way.' This interaction led to a realisation of their potential impact on community inclusivity, as expressed by Student #21: 'I have learned that teaching diversity to young populations is important for the future of our communities to ensure that everyone can be accepting and inclusive members of society.' Moreover, students observed the community's receptiveness to learning about diversity. Student #34 noted,

*I learned that when provided with the opportunity, the community will use the resources given in order to provide [for] their child, in this case ... parents provided their child with the opportunity to grow and practice those skills as well as develop their awareness [of] diversity.*

Summarising the overall impact, Student #17 concluded that the service-learning project 'taught me the overall importance of respecting and appreciating the diversity that appears around the world.'

## CHILDREN'S LEARNING OUTCOME

Children's performance on the three questions – story summary, diversity definition and diversity application questions – was compared between the initial session and the final session to assess differences. For the story summary question, the mean score improved from 0.74 (SD = 0.81) in the first session to 1.74 (SD = 1.01) in the last session. A paired *t*-test revealed that this difference was statistically significant,  $t(18) = -4.14, p < .001$ , with a large effect size, Cohen's  $d = -0.95$ . Similarly, for the diversity definition question, the mean score also increased from 0.36 (SD = 0.50) in the first session to 1.36 (SD = 0.75) in the last session. This difference was also statistically significant,  $t(13) = -4.27, p \leq .001$ , with a large effect size, Cohen's  $d = -1.14$ . Finally, for the diversity application question, the mean score also improved from 1.00 (SD = 0.87) in the first session to 1.76 (SD = 0.97) in the last session. A paired *t*-test confirmed that this difference was statistically significant,  $t(16) = -2.75, p = .007$ , with a moderate effect size, Cohen's  $d = -0.67$ . Overall, these results indicate that children demonstrated significant improvements across all three questions from the first to the last session.

## Discussion

This study aimed to integrate a service-learning component into an undergraduate speech–language pathology course and examine its impact on two related outcomes: college students' perspectives on cultural diversity and children's performance in diversity understanding and reading skills. Junior- and senior-level students majoring in communication sciences and disorders participated in an 8-week service-learning project in which they taught cultural diversity concepts to children ages 6–8. The findings demonstrated that the project positively influenced both groups. College students reported meaningful changes in their understanding of diversity and its relevance to professional practice, whilst children showed improvement

in reading-related outcomes and diversity awareness. These findings align with prior research (e.g., [Sylvan 2022](#)) identifying service-learning as a high-impact educational practice that integrates academic learning with meaningful community engagement in speech-language pathology.

## IMPACT OF SERVICE-LEARNING ON COLLEGE STUDENTS' PERSPECTIVES ON DIVERSITY

Student reflections revealed three overarching themes: enhanced academic learning, clinical competence and personal growth. These themes illustrate how teaching diversity in a community-based setting supported students' learning beyond traditional classroom instruction.

### Enhanced Academic Learning: Applying Diversity Lessons from Classroom to Real-World Situations

Whilst classroom-based instruction is essential for introducing foundational concepts of diversity, deeper and more meaningful learning occurs when students apply this knowledge in authentic contexts. Fink's Taxonomy of Significant Learning emphasises that effective learning extends beyond foundational knowledge to include application, integration, the human dimension, caring and learning how to learn ([Fink 2013](#)). In the present study, service-learning experiences enabled students to apply diversity concepts by teaching and discussing them with children, integrate theoretical knowledge with real-world practice and engage with the human dimension through reflection on their own beliefs and emerging professional roles. These experiences also fostered caring, as students developed greater empathy and a stronger commitment to culturally responsive practice, and supported learning how to learn through structured reflection and iterative teaching experiences. Using this framework, prior research (e.g., [Barnes & Caprino 2016](#); [Thao et al. 2025](#)) has demonstrated that service-learning promotes deeper conceptual understanding, increased personal relevance and longer retention of learning. Importantly, our study does not diminish the value of classroom instruction; rather, it highlights that when traditional coursework is intentionally complemented with experiential learning opportunities, students are more likely to achieve the integrated and meaningful learning that Fink characterises as 'significant.'

### Clinical Competence

Student reflections indicated meaningful growth in clinical competence, particularly in working with diverse populations. Students described developing the ability to adapt instruction, respond flexibly to children's verbal and behavioural cues and engage respectfully with individual differences among learners. These findings align with prior service-learning research, which demonstrates that experiential learning fosters cultural awareness, instructional flexibility and clinical confidence ([Bringle & Clayton 2012](#); [Krishnan et al. 2021](#)). A second theme reflected students' increased recognition of the importance of introducing diversity concepts during early childhood. Teaching children ages 6–8 enabled college students to observe how early exposure to diversity can shape children's understanding of difference, inclusion and respect. This awareness is supported by developmental research indicating that children begin forming concepts related to social identity, fairness and inclusion at a young age and that early, intentional instruction can positively influence these emerging understandings ([Lundy et al. 2024](#); [Magos & Kalopita 2020](#)).

A third subtheme reflected students' growing awareness of contextual influences on children's diversity learning. Students frequently noted that caregiver attitudes, language and everyday comments shaped how children interpreted diversity concepts introduced during the sessions. These observations reflect an emerging understanding of ecological perspectives on development, which emphasise the interconnected roles of family, school and community contexts in shaping children's learning and social development ([Magos & Kalopita 2020](#)). Accordingly, effective diversity education for children may benefit from intentionally integrating family engagement and educator training into intervention and outreach efforts. Empirical evidence supports this approach. [Heberle et al. \(2024\)](#) demonstrated that anti-racist caregiver training for parents of White 4- and 6-year-old children led to improvements in caregivers' racial beliefs

and their capacity to support children's social connections. Similarly, [Banko-Bal and Akman \(2025\)](#) found that anti-bias education training for teachers improved educators' attitudes towards diversity, which was associated with preschoolers' increased respect for diversity and greater appreciation of differences in cultural backgrounds and abilities.

### Personal Growth

Beyond academic and clinical outcomes, students reported meaningful personal growth in recognising the broader significance of diversity education through their participation in the project. Engaging in the teaching of diversity prompted students to critically examine their own beliefs and assumptions, thereby fostering the development of cultural humility and reflective practice. This growth is particularly salient given that pre-survey findings suggested limited prior exposure to diverse populations for many students, with pre-survey item 9 receiving the lowest mean rating ( $M = 3.70$ ) among all Likert-scale items. These findings highlight the importance of providing explicit, structured learning opportunities to support the development of cultural humility – opportunities that are not yet consistently embedded across higher education curricula. Supporting this need, [Farrelly and colleagues \(2022\)](#) demonstrated that a 6-week cultural humility learning module for psychology undergraduates effectively promoted students' self-reflection and awareness of cultural differences, suggesting that similar instructional approaches may be beneficial across health professions, including speech–language pathology.

Students also described an increased appreciation for diversity within the local community and a heightened sense of responsibility to engage in inclusive practices. Collectively, these findings underscore the role of service-learning in fostering civic engagement and professional identity development through reciprocal university–community partnerships. Consistent with this interpretation, [Manning-Ouellette and Hemer \(2024\)](#) found that first-year college students who participated in a semester-long service-learning project more frequently articulated solution-focused plans for civic engagement and identified concrete ways that they could contribute to systems-level change.

Beyond individual development, the present findings further suggest that service-learning can function as a social change pedagogy within undergraduate speech–language pathology education by shaping students' commitments to equity and inclusive practice. Through repeated interactions with children and caregivers, students moved beyond understanding diversity as a conceptual or classroom-based topic and began to recognise their emerging professional role in contributing to more equitable and inclusive community environments. In this way, the project supported not only personal and professional growth but also an orientation towards reducing bias, fostering belonging and promoting culturally responsive practices that may influence children, families and communities over time. This interpretation aligns with critical service-learning perspectives ([Mitchell 2008, 2015](#)), which position service-learning as a pedagogical approach that links academic learning with civic responsibility, equity and broader social transformation. This pattern is further supported by prior research documenting service-learning's capacity to promote civic responsibility, social justice orientation and sustained community engagement (e.g., [Celio et al. 2011](#); [Eyler & Giles 1999](#)).

### IMPACT OF SERVICE-LEARNING ON CHILDREN'S DIVERSITY UNDERSTANDING AND READING SKILLS

Children who participated in the program demonstrated improvements in story summarisation, diversity definitions and diversity application from the initial to the final session. These gains suggest that embedding diversity instruction within literacy activities can simultaneously support reading comprehension and social understanding. A key strength of the service-learning approach lies in its capacity to integrate diversity education within core instructional domains rather than treating it as a standalone topic. In this project, literacy instruction was intentionally paired with diversity-focused lessons, allowing children to develop comprehension skills whilst engaging with meaningful social content. This approach aligns

with literacy research demonstrating that engagement with diverse texts supports deeper comprehension through meaning-making, perspective-taking and discussion ([Johnson et al. 2025](#)). In one session of our project, reading passages that introduced a range of family names naturally prompted discussions about encountering unfamiliar names and responding respectfully, thereby reinforcing both literacy skills and social awareness. This integrated approach illustrates how diversity themes can be meaningfully embedded across a variety of service-learning initiatives. For instance, when college students design lesson plans and instructional materials to support children's language development in the local community, they can incorporate diverse communication methods – including verbal, nonverbal and tactile modalities – whilst also addressing respectful and inclusive ways of engaging with different forms of communication. By intertwining diversity education with other instructional goals, service-learning projects offer rich, multifaceted learning experiences that support children's academic and social development whilst also preparing future professionals to work effectively in an increasingly diverse society.

### CHALLENGES AND OVERCOMING BIAS: CONTEXTUAL INFLUENCES ON DIVERSITY EDUCATION

Teaching diversity to children can sometimes raise concerns among parents and caregivers. In our project, we encountered a parent who expressed apprehension about the diversity themes being introduced to their child at what they perceived as too early an age. Despite our efforts to share teaching materials and explain our learning goals and curriculum, they ultimately chose to withdraw their child's registration. Some participating college students observed how caregivers' attitudes and comments could significantly influence children's understanding of diversity. This underscores how a child's environment, including family, schools and community, directly and indirectly plays a crucial role in shaping their perspectives on diversity ([Magos & Kalopita 2020](#)).

Given these challenges, effective diversity education requires intentional communication and engagement with families and communities through multiple channels. Although a single project or training experience may be insufficient to shift caregivers' beliefs or attitudes towards diversity, providing repeated and varied opportunities for engagement may increase understanding and openness over time. Notably, one college student reflected that she hoped her future children would have opportunities to learn about diversity as early as possible, emphasising the perceived value of early exposure to inclusive concepts. This perspective reinforces the importance of creating accessible opportunities for communities to engage with diversity education. College–community collaborations, in particular, offer a promising approach for bridging this gap by enabling universities to share research-based knowledge and evidence-informed practices related to diversity with local communities ([Ferrer-Aracil et al. 2022](#)). By involving not only children but also parents and caregivers, such initiatives can foster shared understanding, reduce misconceptions and support the development of more inclusive community environments.

### LIMITATIONS AND FUTURE DIRECTIONS

One limitation of this study was the absence of a control group of children for comparison, as well as the lack of direct observation of how children applied the cultural diversity concepts they learned in real-world situations. Children demonstrated significant improvement across all three measures – story summary, diversity definition and diversity application – from the first to the final session. However, without a control group, we could not determine whether this improvement resulted from participation in the project or natural maturation. Future research should consider including a control group to better assess the program's impact. Additionally, our assessment of diversity application relied primarily on scenario-based questions, such as 'What would you do or say if you met a person wearing unfamiliar clothing?' Whilst these questions provided valuable insights, they may not fully capture how children integrate these concepts into their daily lives. To address this limitation, future studies could incorporate direct observation of children's interactions

in natural settings to assess how they apply cultural diversity concepts or conduct interviews with parents, caregivers or teachers, which could provide additional perspectives on any changes in children's behaviours or attitudes towards cultural diversity.

We also noticed that college students did not leave specific statements about how they would incorporate diversity lessons into their literacy sessions, which may be due to the fact that the instructor developed the program beforehand, or the students were undergraduates with limited clinical experience. For future studies, it would be beneficial to explore ways to actively engage students in the program development process, allowing them to think critically about its structure and purpose. One idea could be to have students develop one session themselves under the instructor's guidance, providing them with hands-on experience in curriculum design.

## Conclusion

The current service-learning project provided significant opportunities for both college students and children to enhance their understanding of cultural diversity. By teaching children about cultural diversity, college students deepened their knowledge of diverse communities and gained insights into the importance of introducing diversity concepts early in education. Children participating in the project demonstrated improved understanding of diversity concepts and enhanced reading skills. Beyond these reciprocal educational outcomes, the project also further demonstrates how service-learning can contribute to broader social change by fostering students' active commitment to equity, inclusion and community engagement. Ultimately, this project exemplified the mutual benefits of service-learning in diversity education, contributing to the development of more culturally aware professionals and fostering a more inclusive next generation.

## Authors statement

Sunjung Kim Thao conceptualised the study, developed the curriculum, supervised data collection and analysis and led manuscript writing. Yeseul Nam provided expertise in cultural and emotional development, reviewed curriculum content and contributed to data interpretation and manuscript revision. Lesley Graybeal offered guidance on service-learning design and community engagement practices and contributed to manuscript editing. Reuel J. Shepherd facilitated community partnerships, supported program implementation, reviewed data and contributed to manuscript revision. Emma Pasierb assisted with data collection, transcription and literature review. Abigail Bone assisted with data collection, transcription and literature review. All authors reviewed and approved the revised manuscript.

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## Appendix 1 Sample Session Plan (CubsREAD: Diversity of Food)

Session Number: 0X

Client: XXX

Student Clinicians: XXX, B.S. and XXX, B.S.

Instructor: XXX, PhD, CCC-SLP

Location: XX Hall Room 112

Session Length: 60 minutes (4:00–5:00 PM)

### SESSION OBJECTIVES

- Increase awareness of cultural diversity in foods across cultures
- Practice respectful communication when encountering unfamiliar foods
- Support language comprehension through shared reading
- Promote engagement through structured activities and a hands-on craft

### SESSION SCHEDULE AND ACTIVITIES

Time	Activity	Description
4:00–4:05	Warm-Up & Review	The clinician will greet the child and review the session schedule using a visual sticker chart. As each activity is completed, the child will place a sticker on the chart. Key concepts from the previous session will be briefly reviewed to support continuity.
4:05–4:20	Cultural Diversity Introduction: Food	The clinician will introduce the concept of food diversity using a short video (“World Foods”) followed by guided discussion. A role-play activity will be conducted in which the child practices respectful responses when introduced to unfamiliar foods (e.g., responding politely to food suggestions in a restaurant setting).
4:20–4:25	Break	The child will engage in a brief sensory break using kinetic sand to support regulation and sustained attention for the remainder of the session.
4:25–4:45	Interactive Story Comprehension	The clinician will read <i>So Many Kinds of Food!</i> with the child. Comprehension questions and discussion will focus on identifying different foods, recognising cultural differences, and connecting story content to the earlier video and role-play activity.
4:45–4:55	Craft Activity: Paper Taco	The child will complete a paper taco craft to reinforce the concept of food diversity. The clinician will provide a model and give clear verbal step-by-step instructions. All materials will be pre-cut.
4:55–5:00	Review Questions	The clinician will administer post-session questions to assess the child’s understanding of session content. Responses will be audio-recorded following established recording procedures.

## Appendix 2 Pre-experience survey open-ended questions for college students

1. Have you ever participated in community service? If so, what kind of activities did you do? How did you feel about your efforts in this activity?
2. What issues in the community concern you? How do you imagine yourself contributing to solving these issues while in college? In ten years?
3. In what ways do you think community service can enhance your education? (For example, how can it broaden your knowledge of diversity, career choices, or social awareness?)
4. Ideally, what do you think is the most important aspect of doing a community service project?

## Appendix 3 Post-experience survey open-ended questions for college students

1. How is your service-learning experience related to the lectures, readings, and discussions in class?
2. How is your experience different from what you expected?
3. Identify three strengths you demonstrated in your service placement.
4. Identify three areas where you feel you could use additional guidance and learning in order to be more effective.
5. What new skills have you learned since beginning your service?
6. What did you like/dislike about the experience?
7. What did you learn about the community/people?
8. What was the most important lesson you've learned?
9. What would you like to learn more about, related to this project?
10. If you could do the project again, what would you do differently?
11. Describe a person you've encountered in the community who made a strong impression on you, positive or negative.
12. Complete this sentence: Because of my service-learning, I am...

## Appendix 4 Examples of grading rubric for story summary question for children

- Advanced understanding (3 points), Comprehensive recall with specific details and understanding
  - Example for session 7: "Chinese New Year is a big holiday in China and some people in the U.S. celebrate it too. It happens between January 21 and February 20. People spend time with family, have a big dinner with fish and noodles, and wear red for good luck."
- Moderate understanding (2 points), partial recall with some details
  - Example for session 7: "Chinese New Year is in winter and people eat noodles and wear red."
- Basic understanding (1 point), minimum recall, very basic or vague information
  - Example for session 7: "It's about Chinese New Year."
- No response or off-topic (0 points):
  - Example: "I don't remember anything."

## Appendix 5 Examples of grading rubric for diversity definition question for children

### SESSIONS 1 ~ 8 WHAT IS DIVERSITY?

- Advanced understanding (3 points)
  - Description: The child provides a comprehensive definition, including various aspects of diversity and the importance of inclusion and respect.
  - Example: “Diversity means people are different in many ways, like their race, gender, culture, and abilities. It’s important to include everyone and respect these differences.”
- Moderate understanding (2 points)
  - Description: The child includes multiple aspects of diversity, such as race, gender, and culture, but may not fully explain the concept.
  - Example: “Diversity means people have different skin colours, speak different languages, and come from different places.”
- Basic understanding (1 point)
  - Description: The child provides a very simple definition, focusing on one or two aspects of diversity (e.g., “Diversity means different people”).
  - Example: “Diversity is when people look different.”
- No response or off-topic (0 points):
  - Response: The student does not provide any relevant information about the lesson. They might say they don’t remember or give an unrelated answer.
  - Example: “I don’t know what diversity is.”

## Appendix 6 Examples of grading rubric for diversity application question

### SESSION 2: WHEN YOUR FRIEND IS WEARING A TYPE OF CLOTHING THAT YOU’VE NEVER SEEN BEFORE, WHAT WOULD YOU DO OR SAY?

- Advanced understanding (3 points):
  - The student shows curiosity and respect for different clothing styles.
  - They suggest asking about the clothing or complimenting it.
  - Examples: “I’d say, “That’s a cool outfit! Where did you get it?” “I would ask them to tell me about their clothes because they look interesting.”
- Moderate understanding (2 points):
  - The response is positive but less specific.
  - They show some interest in the different clothing.
  - Examples: “I would say it looks nice.” “I’d ask about it.”
- Basic understanding (1 point):
  - The answer is neutral or vague.
  - They don’t show clear interest or disinterest.
  - Examples: “I wouldn’t say anything.”
- No response or off-topic (0 points):
  - The response is no response or negative.
  - They suggest mocking or criticising the clothing.
  - Examples: “I don’t know.” “I’d tell them it looks weird.”