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Jennifer Katherine Schoffer Closson  
*University of Montana - Missoula*

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SERVICE-LEARNING IN COMMUNICATION SCIENCES AND DISORDERS  
UNDERGRADUATES: OUTCOMES, AUTISM KNOWLEDGE, AND CAREER DECISIONS

By

JENNIFER KATHERINE SCHOFFER CLOSSON

B.S. Communication Disorders, Minot State University, Minot, ND, USA, 1995

M.S. Communication Disorders, Minot State University, Minot, ND, USA, 1999

Dissertation

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in Teaching and Learning

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Approved by:

Scott Whittenburg, Dean of The Graduate School  
Graduate School

Morgen Alwell, Ph.D., Chair  
Teaching & Learning

Trent Atkins, Ph.D.  
Teaching & Learning

Martin Blair, Ph.D.  
Teaching & Learning Affiliate/Rural Institute

Anisa Goforth, Ph.D.  
Psychology

Andrea Vernon, Ed. D., Committee Member  
Experiential Learning and Career Success/ Public Administration & Policy

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**Table of Contents**

Table of Contents ..... iii

Acknowledgements ..... viii

Service-Learning in Communication Sciences and Disorders Undergraduates: Outcomes, Autism Knowledge, and Career Decisions ..... ix

Chapter 1: Introduction ..... 1

    Research Context ..... 3

        CSD 396 - Autism on Campus/SvcLrn ..... 3

        Mentoring, Organization, and Social Support for Autism/All Inclusion on Campus (MOSSAIC) ..... 6

    Statement of the Problem ..... 13

    Purpose of the Study ..... 13

    Research Questions ..... 13

    Role of the Researcher ..... 14

    Definition of Terms ..... 15

        Autism Spectrum Disorder (ASD) ..... 16

        CSD 396 - Autism on Campus/SvcLrn (CSD 396)..... 16

        Off Campus Participant ..... 16

        On Campus Participant ..... 16

        MOSSAIC Program..... 16

## SERVICE-LEARNING IN CSD

Participants.....	16
Peer Mentoring.....	16
Reflection.....	16
Service-learning .....	17
Students.....	17
Significance of the Study.....	17
Summary.....	17
Chapter 2: Literature Review.....	19
Introduction.....	19
Purpose of Literature Review .....	19
Service-Learning .....	19
Theoretical Framework.....	19
Didactic Learning Pedagogy.....	22
Instructional Conversations .....	22
Learning Augmented by Movies.....	23
Outcomes of Service-Learning in Communication Sciences and Disorders.....	24
Academics.....	25
Civic Engagement .....	25
Cultural Competence .....	26
Skill Development.....	27

SERVICE-LEARNING IN CSD

Advocacy .....31

Outcomes of Service-Learning Related to Perception, Understanding, and Attitudes Toward  
Autism .....32

Service-Learning and Career Pursuit in Communication Sciences and Disorders.....36

Service-Learning Concerns .....37

Summary.....37

Chapter Three: Methodology.....39

Research Design.....39

    Artifacts .....40

Participants .....43

    Informed Consent.....43

    Participants: Reflection Papers .....43

    Participants: Semi-Structured Interviews .....44

    Ethical Considerations.....44

Data Collection .....45

    Reflection Papers.....45

    Semi-Structured Interviews .....45

Data Analysis .....45

    Reflection Papers.....45

    Semi-Structured Interviews .....46

## SERVICE-LEARNING IN CSD

Post Coding.....	46
Chapter Four: Results.....	48
Table 1.....	49
Interviewee information.....	49
Participant Backgrounds.....	50
Deep Learning.....	51
The CSD 396 Course.....	51
Course Structure.....	52
Temple Grandin Movie.....	54
Instructors.....	54
Classmate Course Enrichment.....	55
Repeating the CSD 396 Course.....	56
Relationships and Inclusion.....	57
MOSSAIC Program.....	57
Relationships with Mentees.....	58
Friends with Disabilities.....	58
Time with Mentees.....	59
Social Events.....	61
Professional and Personal Growth.....	62
Learning.....	62

SERVICE-LEARNING IN CSD

Skill Development.....65

Personal Development.....67

Future.....69

Development of Advocacy and Increased Access .....73

    Different Not Less .....73

    Identified Needs of the Community .....73

    Advocacy .....75

Closing.....76

    Additional Thoughts.....76

Chapter Five: Discussion.....79

    Deep Learning.....79

    Relationships and Inclusion .....80

    Professional and Personal Growth .....81

    Development of Advocacy and Increased Access .....83

    Limitations.....84

    Conclusion .....85

    Recommendations for Future Research .....87

References .....88

Appendix A: Paper Review Codes .....98

Appendix B: Consent Forms .....106



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**Service-Learning in Communication Sciences and Disorders Undergraduates: Outcomes,  
Autism Knowledge, and Career Decisions**

Chairperson: Morgen Alwell, Ph.D.

Service-learning is often infused into undergraduate courses with the goal of connecting what is learned in the classroom to what is executed in the field. CSD 396 - Autism on Campus/SvcLrn (CSD 396) is a University of Montana (UM) Speech, Language, Hearing, and Occupational Sciences service-learning course linked to the Mentoring, Organization, and Social Support for Autism/All Inclusion on Campus (MOSSAIC) Program. The service-learning component of CSD 396 provides peer mentorship to university students with autism in the MOSSAIC program. In this qualitative study, I have examined the service-learning experience of past and current student mentors, the impact on their knowledge and inclusion practices with relation to autism, and whether the experience influenced their decision to pursue graduate study in speech-language pathology. Results were consistent with other service-learning reports in the literature, peer mentoring in this case led to personal and professional growth, and along with course content specifically about autism, seemed to reinforce or validate the choice to pursue speech-language pathology or a related profession. Results also showed that participants found the teaching and learning aspects of this service-learning opportunity favorably, they developed relationships with peers with ASD that in turn fostered inclusion and developed a mindset for advocacy influencing access for people with autism in our community.

*Keywords:* Service-learning, autism, peer mentor, career

### **Chapter 1: Introduction**

Service-learning is a valued method of imparting knowledge and skill to pre-service professionals. There is strong evidence that the experience of service-learning has overall benefits as well as gains specific to the experience. Service-learning within the field of Communication Sciences and Disorders (CSD) is limited but yields positive results such as academic growth and cultural competence (Peters, 2011).

Many pre-service professional programs integrate service-learning into their course of study. “Service-learning incorporates community work into the curriculum, giving students real-world learning experiences that enhance their academic learning while providing a tangible benefit for the community” (Campus Compact, 2019). The purpose of service-learning is to “infuse service and civic engagement into college academic programs” (Celio, et al., 2011). The impact on participating pre-service professionals is encouraging, and the results for the beneficiaries are also reported to be generally positive.

In a meta-analysis of 62 studies with 11,387 participants Celio et al. (2011) found that service-learning improved participants’ attitudes toward themselves and academics, increased their civic engagement, impacted their social skills development, and increased their academic performance. Peters (2011) reviewed literature regarding undergraduate service-learning programs in communicative sciences and disorders. Like Celio et al., Peters (2011) reported benefits associated with increased course satisfaction, higher academic performance, and critical thinking skills related to application of knowledge to real life settings. Other benefits to participants included developing cultural understanding and reduced stereotypes related to race, as well as increased empathy and perspective taking of others. Students often became committed volunteers upon graduation.

## SERVICE-LEARNING IN CSD

The literature is limited on service-learning within the realm of CSD with little in press about service-learning supporting adults with autism. Nowell et al. (2020) described a service-learning program that had a three-credit didactic component and a 30-hour service component with a community partner that supported people with autism in the form of a camp, secondary transition program, or one of two early intervention programs. A survey was administered at the beginning and end of the program to assess knowledge and understanding of autism spectrum disorder (ASD). Nowell et al. learned that students developed their application of inclusion practices, developed understanding of sensory processing challenges, and learned more about the person depicted in the survey scenario, pointing toward the development of a more inclusive attitude toward people with ASD.

While service-learning is beneficial at the undergraduate level, relatively little is known about the impact of service-learning on career choice or the choice to pursue more schooling with regard to speech-language pathology. We have good understanding of what influences the choice of graduate school. According to Pavelko et al. (2015) students choose graduate schools based on cost, quality advisors, and clinical experience. We also have good understanding of what brings people to the field of CSD such as the promise of interesting work, working with people (Keshishian & McGarr, 2012) and helping people (Byrne, 2007). But there is no documentation of whether service-learning validates the career choice of CSD or informs the decision to pursue required graduate school.

The elective course CSD 396 - Autism on Campus/SvcLrn (CSD 396) developed by Schoffer Closson (2012) has been evolving at the University of Montana (UM) over the past ten years. This two-credit course is characterized by a didactic component and a 15-hour service-learning requirement. The UM requires a minimum five hours of service for every one credit

## SERVICE-LEARNING IN CSD

hour of class (University of Montana, 2021). In most instances, the service-learning component is executed through peer mentoring of adults with autism, on and off campus. As of fall 2020, the program affiliated with CSD 396, MOSSAIC (Mentoring, Organization, and Social Skills for Autism/All Inclusion on Campus), has been restricted to campus participants due to priority and limitations imparted by the Covid 19 pandemic. During spring 2022, off campus students were able to re-engage in the program.

The CSD 396 students elect to participate in this repeatable course (up to three semesters) during their junior and senior years. Students must apply to be admitted to the course and it is open to all students on campus, generally attracting people pursuing careers in service. I have explored how this learning/mentorship experience impacts students' understanding of ASD, outcomes from the experience, and whether this service-learning experience influences the decision to pursue required graduate study to become a speech-language pathologist (SLP) or a related career.

### **Research Context**

#### *CSD 396 - Autism on Campus/SvcLrn*

Known as CSD 396, and often called "MOSSAIC" by the students and instructor(s), this service-learning course provides the foundation for the service-learning experience of mentoring peers with autism. This course meets weekly for one and a half hours for the didactic portion of the cumulative experience. The content of the course is focused on clinical procedures, learning through a theatrical portrayal of a lived experience, topics aligned with Area Health Education Center (AHEC) Scholars Montana program, and topics identified by the current students.

**Clinical Procedures.** Students are required to learn about policies and procedures that protect the health and safety of the MOSSAIC participants. Students complete a background

## SERVICE-LEARNING IN CSD

check, must pass a blood borne pathogen exam, become HIPAA (Health Insurance Portability and Accountability Act) certified, and attest to adhering to confidentiality procedures aligned with the DeWit RiteCare Speech, Language, and Hearing Clinic (SLHC), the entity that houses the MOSSAIC program. Students are provided a handbook on peer mentoring with an associated assignment. Students are also trained on basic documentation procedures for their mentoring engagements.

**Temple Grandin (2010).** During the first semester of attendance in CSD 396, students watch the HBO film Temple Grandin (2010). This movie gives a detailed account of Dr. Grandin's experience of attending college in the 1960s and having autism. It highlights her struggles and successes through her lifespan while also bringing to light the history of the disorder. While moving through the movie, the instructor stops at strategic places and explains what they were witnessing such as the concept of "refrigerator mothers," issues with confidentiality, recommendations for institutionalization, discrimination, using strengths to focus academics, intervention practices, etc. For students that are engaging in the course for the second and third time, they take the time apart from the class during the movie-centered instruction to work on a special project of their choice.

**Special Projects.** Students in the second and third rendition of the course are required to do a special project. These projects are in response to identified community needs resulting from their first semester of instruction in CSD 396. Students are welcome to work in groups or independently. The goal is to have an outcome that educates, serves, or supports people in our community with and without autism to create safer and more inclusive environments. Some examples of special projects have included first responder trainings, brochures on inclusive practices, and trainings designed for campus personnel.

## SERVICE-LEARNING IN CSD

**Topics Aligned with AHEC Scholars.** AHEC Scholars is a certification program with national recognition that focuses on a team approach to healthcare (University of Montana, 2021). By including the topics, students may use CSD 396 as part of their certificate coursework. The topics that are included every semester include social determinants of health/rural disparity, interprofessional practice, cultural competency, and current and emerging health issues. These topics are explored in relation to autism.

**Topics Identified by Students.** The students are given an opportunity each semester to choose two to three topics for learning. Some topics have included food chaining, ableism, advocacy, and behavior interventions. In the spring 2021 semester the students asked to role play difficult scenarios for team meetings so they could learn how to respond to challenging situations and use neutral language. Recently students wanted to explore animal assisted intervention, trauma informed care, and social media interpretation of evidence-based practices.

**Fifteen Hours of Service.** Students are required to participate in 15 hours of service minimum through the course of the semester. Many students engage in peer mentoring which could be one on one weekly meetings with MOSSAIC participants or attending the Tuesday evening meetings/social events. When either the class enrollment was high or MOSSAIC participation was low, students could take advantage of a special opportunity and volunteer with clients in the DeWit RiteCare SLHC. These opportunities involved supporting direct speech-language intervention for people experiencing developmental delay. Lastly, during the pandemic when social engagement was minimized, students provided service by putting together blog posts and fact sheets for the MOSSAIC webpage.

The skills learned in the class are translational to other populations and experiences. By addressing student topics, the class promises to meet the students where their interests lie. The

## SERVICE-LEARNING IN CSD

nontraditional approach of using a movie to teach about autism and the discussion-based learning brings a level of engagement to the students that spills over to their experience as peer mentors.

### ***Mentoring, Organization, and Social Support for Autism/All Inclusion on Campus (MOSSAIC)***

While there is ample evidence that students benefit from service-learning opportunities, there are benefits to the recipients as well. In addition, adult peer-mentoring programs for people with ASD are reporting positive outcomes. For example, Siew et al. (2017) analyzed the outcomes of a pilot program called the Curtin Specialist Mentoring Program (CSMP). CSMP provided peer mentoring in college to ten students with autism. The mentees revealed that through coaching, motivation, practical support, group support, and emotional support that they were motivated to enroll in the second semester with only one student withdrawing. According to *CollegeAtlas.org* (2019), 30% of freshman drop out, leaving CSMP's statistic exceptional. The student mentees shared that CSMP supported their transition to college life, they benefited from academic support resulting in understanding coursework better and effectively completed assignments, they were able to communicate their needs more effectively with the support, they increased positive emotions while managing negative thoughts, and took advantage of the opportunity to make new friends.

Peer-mediated instruction and intervention (PMII) is considered to be an evidence-based practice (Sam et al., 2015), and has an implementation option of peer networking. MOSSAIC employs peer networking, among other supports, and refers to the peers as mentors. Research (Sam et al., 2015) on PMII has been reviewed with the high school population and has implications of effectiveness for people with autism; peer networking can easily be applied to the campus setting. As a rule, peer networking takes place outside of instructional time and involves



## SERVICE-LEARNING IN CSD

developing social networks. Peer mentoring through MOSSAIC expands this to include supports identified by the participants. For one participant, it might be the need to practice conversation skills, for another, it could be developing a schedule for the week, while others may want to explore and learn about the campus, and yet another would like to just hang out and talk.

Regardless of the participants' individual needs, adult peer mentoring provides a connection to the campus and the community for the participants. Mentors gain knowledge and familiarity with people with ASD through service-learning while providing valued support.

Locke, et al. (2022) through qualitative inquiry of the University of Washington's (UW) MOSSAIC program learned the outcomes of peer mentoring. Mentors reported that they learned about autism from their mentees. Furthermore, they learned how to support people with autism and be more attentive to needs.

The MOSSAIC program is unique to the University of Montana campus and has expanded to the UW campus. MOSSAIC at UM is a system of support with multiple components that offers the following choice combinations to meet individual needs: 1) direct speech-language therapy services, 2) peer mentoring, 3) Tuesday evening social opportunities, and the expansion services of 4) campus wide training for students, employers, instructors, and interventionist on autism, neurodiversity, and inclusion, and 5) a program director to offer consistency and support. Beyond the offerings of MOSSAIC, students with ASD often access the Office of Disability Equity (ODE) and TRIO for accommodations and academic support, and campus counseling services for mental health needs. Though the MOSSAIC program has morphed over the last ten years since its inception, the peer mentoring aspect and associated service-learning has been a consistent component.

## SERVICE-LEARNING IN CSD

Many programs have been initiated around the world to address the specialized needs of people with ASD such as Transition Pathways at Drexel University, The ASPIRE Program at St. Joseph's University (Think College, 2021), and the Curtin Specialist Mentoring Program, Curtin University (Curtin University, 2021). The MOSSAIC program initiated alongside these programs; however, literature on program design was not available at its establishment. I developed the program based on what could be offered through the Communicative Sciences and Disorders Department at the University of Montana, evidence-based practices, and what was known about the needs of people on campus with autism from the literature.

Myrvold et al. (2021) through a mixed methods study found evidence for the need of programs like MOSSAIC. Thirteen university students with ASD participated in a standardized measure for executive functioning, a questionnaire that provides classification information for sensory needs, and semi-structured interviews. Outcomes revealed that students experience more executive functioning challenges than age peers according to the standardized measure. This was validated by the interview analysis and the need for clear expectations academically was expressed. The sensory profile indicated hypersensitivity by the subjects and the need for sensory-friendly spaces. Interviews revealed that academic performance was influenced by executive functioning challenges. Disability service accommodations supported student success and other campus resources were accessed. The students identified that they need help in the area of executive functioning and also felt challenged by developing relationships. Relationships with neurotypical peers progressed over time as did those with faculty members. Most felt supported by their families. There was a range within friendships of close to none at all. This may be related to the barriers of anxiety, social communication challenges, and lack of social opportunities reported by some of the interviewees. Overall, executive functioning challenges,

## SERVICE-LEARNING IN CSD

sensory challenges, and barriers to relationships were reported by students with autism on campus. The recommendation is for university support programs specifically designed for autism such as MOSSAIC at both UM and UW campuses.

Locke, et al. (2022) followed up on the Myrvold, et al. (2011) research with a qualitative analysis of mentors and participants of the MOSSAIC program hosted by the University of Washington. While not identical to the MOSSAIC program at the University of Montana, there is consistency with having mentors assigned to mentees. Locke, et al. (2022) learned that mentees joined MOSSAIC for support in the areas of academic, emotional, and social needs. Mentees identified goals that they targeted with their mentor to include social, time management, academic, and professional skills. Like UM, UW had socials as part of their MOSSAIC program. Mentees perceived them as favorable and would like the number of events to increase.

Gardner, et al. (2012) reported occupational therapy students setting up a service-learning experience on a university campus for high school students with secondary transitions needs. Feedback from the high school student participants reveals confidence about attending college, ability to now find resources on campus, the need for organization, and social opportunities on campus. The high school students found the experience quite beneficial.

The literature has grown in demonstrating the needs of people with ASD in higher education. Hewitt (2011) identified the needs of transitioning these students to higher education settings to include social communication and social skills, executive functioning skills, particularly self-advocacy, planning and problem solving, learning the complexities of the higher education system, and access to support services. Hewitt noted that student compliance, co-existing conditions, consistency with services, and the need for concrete presentation of information all be considered when developing a college support plan.

## SERVICE-LEARNING IN CSD

Building on Hewitt's (2011) contributions, Van Hees et al. (2015) learned through qualitative inquiry that college students with ASD had experienced challenges. Main concerns included managing significant amounts of new information, trying to establish routines in a fluctuating environment, and learning how to be flexible within that environment. These challenges translated to worry about transitioning to work after college. Fitting in and developing relationships may have been easier than while in high school due to like-minded people in their coursework; despite kindred interests, participants reported that social skill challenges such as conversation skills and reading social cues interfered with their social success. Students reported feeling lonely and found ease away from the campus setting by engaging in online conversations. Time management and sensory issues often contributed to directing focus in unbeneficial areas. The participants were challenged by knowing when to disclose their diagnosis; usually, they disclosed to obtain support services but did not disclose with peers and faculty. The challenges that students with ASD experience beyond those of their peers often lead to mental health issues. Despite these challenges, students could identify their strengths and attribute them to college success. Van Hees et al. (2015, pp. 21-26) went on to recommend that supporters offer:

1. Comprehensive and individualized services and that increased awareness of ASD that may develop staff perceptions on the topic.
2. A structured, transparent learning environment with clear communication and a dedicated point person for confusing situations.
3. Accommodations including extended time on exams with no overlapping exams, single-person space to take the exam, and individual options on tasks as opposed to group work.
4. Support or coaching for academics, student life, and independent living.

## SERVICE-LEARNING IN CSD

5. Access to adequate mental health services.
6. Opportunity for leisure and rest.

The University of Montana is able to meet these identified needs of students with autism through a combination of programmatic supports. Accommodations are met through the Office of Disability Equity; mental health needs are met by counseling services through the Curry Health Center and individualized needs associated with ASD are met through the MOSSAIC program. The MOSSAIC program has a number of choices and combinations from which participants may choose.

**Direct Speech-Language Therapy Services.** Anecdotally, I can report that the majority of MOSSAIC participants choose to enroll in direct speech-language services at one time or another. I can also report that most people that access these services require assistance with cognition in the form of executive functioning and problem solving, pragmatics to specifically address language understanding and use for social purposes, language usually addressing written language and reading comprehension, and, at times, speech production specifically articulation skills, all part of the purview of the speech-language pathologist (ASHA, 2021). The speech-language services in the DeWit RiteCare SLHC are conducted by a team consisting of a clinical educator and graduate student clinicians. Services are usually performed in person, but due to the pandemic, teletherapy was implemented March 2020 through May 2021. Most students elect one or two hour-long sessions a week. During the Spring 2021 semester, a weekly hour-long social skills speech-language therapy group was implemented engaging three MOSSAIC participants.

**Peer Mentoring.** MOSSAIC participants sometimes require support with campus knowledge and social opportunities. As described, undergraduate students enroll in CSD 396, a two-credit service-learning course that entails 15 hours of service, usually peer mentoring adults

## SERVICE-LEARNING IN CSD

with autism on and off campus. MOSSAIC participants meeting with program mentors are encouraged to advocate for their interests and needs with their matched mentor resulting in an experience that they value.

**Tuesday Evening Social Engagements.** To support MOSSAIC participants socially, these weekly meetings were developed to meet their needs. Participants request topics and activities such as learning about how to complete a job interview or the ins and outs of dating. These evenings also offer social opportunities and have included puppy parties, modified Dungeons and Dragons role playing games, game nights, and murder mysteries. Participants and mentors attend together to build relationships and offer support.

**Campus Education.** MOSSAIC participants, CSD 396 students, graduate student clinicians, and the MOSSAIC director engage in opportunities to educate the campus on neurodiversity and inclusion. Trainings have been developed for housing staff, medical providers, counselors, instructors, students, and support service staff to help the campus community understand the unique needs associated with autism and neurodiversity and provide strategies and practices that help meet those needs.

**Program Director.** As the MOSSAIC program director, I not only oversee and execute the above four components; I act as the main point person as suggested by Van Hees et al. (2015). In spring 2021, I was able to engage a graduate student director and in Fall 2021 and Spring 2022 an undergraduate student director increasing access to support and highly enriching the social opportunities. I will often meet individually with participants to help them with unique needs that may not be addressed by the program such as completing an academic re-instatement plan, looking into insurance reimbursement, locating mental health services, writing a letter of support for housing, etc.

## SERVICE-LEARNING IN CSD

While there are many components to the MOSSAIC program, I have specifically explored the experience of the students in CSD 396 that engaged in peer mentorship. There is little research in this area.

### **Statement of the Problem**

Service-learning, described as the “next generation in education” by Prentice and Garcia (2000), continues to present areas that require further research. First, it is currently unknown if peer-mentoring service-learning opportunities yield positive results similar to those described in research of other service-learning activities. Second, there is little known about service-learning involving people with autism and the outcomes for the service-provider. Lastly, literature is lacking in the area of service-learning informing career decisions and the choice to pursue required graduate school for people wanting to become speech-language pathologists.

### **Purpose of the Study**

The purpose of this study was to evaluate the outcomes for undergraduate students that participated directly in peer mentoring adults with ASD as a service-learning experience. Specifically, I explored mentor perceptions and reflections about their experiences and compared these with reports in extant literature; explored mentors’ knowledge of ASD post experience; and explored outcomes of mentors in terms of subsequent academic and career choices.

### **Research Questions**

The following are the research questions that drove the inquiry:

1. What are the perceptions, reflections, and outcomes of CSD undergraduate students who have participated in a service-learning peer mentoring experience for adults with ASD through the MOSSAIC Program?

## SERVICE-LEARNING IN CSD

2. Are there impacts of service-learning (on their skills? attitudes? other?) in the form of peer mentoring people with ASD with regard to understanding of ASD?
3. Does service-learning in the form of peer mentoring people with ASD influence career choice and furthering one's education in CSD or a related field? If so, how?

### **Role of the Researcher**

As the developer and administrator of the MOSSAIC program, I have vested interest in the program's success. The items at stake involve the on-campus experience of the participants and the service-learning experience of the mentors. I proceeded with the research while continuing as the program director, CSD 396 course instructor, and supervising speech-language pathologist for the MOSSAIC participants.

I am a speech language pathologist by training and have 27 years of experience. I am also a White, female professional in my forties and a mother and wife. I experience privilege in that I have had family financial support to obtain my undergraduate degree, currently have a full-time position with benefits, and do not feel financial burden as a member of the middle class.

I also have and do experience non-membership as an immigrant with landed status, first-generation student, person with a learning disability, and a person confused about my Jewish heritage. I have and do experience discrimination, fear, and the feelings of "less than." I know what it is like to feel like you do not belong. Like my clients in the MOSSAIC program, we share the label of neurodiverse. When developing my programs, I often look through the lens of what I wish my college experiences would have been like. I am highly empathetic and committed to my clients and teaching, almost to a fault. I am passionate about inclusion. These



## SERVICE-LEARNING IN CSD

reflections make me the perfect person to teach CSD 396 and direct MOSSAIC. They also bear a significant amount of bias.

Throughout my career, I have had a heavy focus on clients with autism. Since starting at the UM in 2011, I learned that I enjoy working with adults with ASD as much as children. This population has become of particular interest to me, and I am interested in the many dynamics of the disorder. My personal proverb is “everybody belongs” and I find it particularly challenging for people with hidden disabilities such as ASD and attention deficit (hyperactivity) disorder (ADHD) to belong. I work hard for this population to provide interventions that will help them move through this world more effectively and efficiently. My passion for this population and my established services as fully participatory in MOSSAIC and CSD 396 run the risk of multiple biases in this work.

To safeguard against my biases, I have had a) a research assistant code 25% of my narratives and interviews in addition to my coding and use this process to come to consensus on any discrepant coding, and b) had an expert in qualitative inquiry code a sample of approximately 10% of the documentation to also gauge for consistency. I examined multiple data sources and used member checking with interviewees to ensure accuracy in my documentation of their perceptions. With these additional methodological elements in place, I have accurately studied the patterns and explanations while reflecting on, being transparent about, and reducing misinterpretation of findings due to my biases.

### **Definition of Terms**

The following terms were used in this study:

## SERVICE-LEARNING IN CSD

### *Autism Spectrum Disorder (ASD)*

A neurological disorder characterized by social challenges and restricted or repetitive behaviors and interests.

### *CSD 396 - Autism on Campus/SvcLrn (CSD 396)*

The didactic service-learning course associated with the MOSSAIC program that provides peer mentors to the MOSSAIC participants.

### *Off Campus Participant*

Adult community members with autism affiliated with the MOSSAIC program.

### *On Campus Participant*

University student with autism affiliated with the MOSSAIC program.

### *MOSSAIC Program*

A system of support with multiple components for people with autism and/or related disorders on the University of Montana campus.

### *Participants*

People enrolled in MOSSAIC that likely receive some form of peer mentorship.

### *Peer Mentoring*

Students enrolled in CSD 396 mentor MOSSAIC participants, university students and community members with autism, to support them with campus knowledge and social opportunities. This could be in one-on-one meetings or group settings.

### *Reflection*

Consideration of the service experience and documentation of the “take-aways” from the experience.

## SERVICE-LEARNING IN CSD

### *Service-learning*

Service components associated with a didactic course offering.

### *Students*

People enrolled in CSD 396 providing service in the form of peer mentorship.

### **Significance of the Study**

This study will contribute to the service-learning efficacy literature. Peer-mentoring service-learning experiences have little representation in current literature. The study will also contribute to literature on effective supports in higher education for persons with ASD. Lastly, this research study will contribute to understanding the outcomes of the MOSSAIC program and the associated CSD 396 course.

### **Summary**

MOSSAIC is a multi-component program designed to support people on campus and in the community with autism. There are perceived benefits to the participants, the student service providers, and the campus community. Service-learning in the form of peer mentoring people with autism is a component part of CSD 396, the course associated with MOSSAIC. Through detailed review of 40 reflection papers collected over nine semesters and semi-structured interviews with 10 selected informants, outcomes related to the experience of service-learning through peer mentoring persons with ASD was explored. As the CSD 396 course instructor, supervisor of speech-language therapy provisions, and director of the MOSSAIC program, I have worked to safeguard my biases through examination of multiple data sources, member checks, and independent and consensus coding of papers and interviews with a research assistant. This study resulted in some practice transformation for the MOSSAIC program and programs like it

## SERVICE-LEARNING IN CSD

being developed on several other campuses nationwide and will contribute to the body of knowledge in service-learning.

## **Chapter 2: Literature Review**

### **Introduction**

Since the 1990s, service-learning has been utilized in undergraduate coursework (Einfeld & Collins, 2008). Service-learning is viewed as a practice of applied learning. Overall, the research reports that service-learning is beneficial and helps with specific skill development (Celio et al., 2011; Peters, 2011). Jones (2002) identified that some students “don’t get it” and fail to benefit from the experience, but this is uncommon. Service-learning is part of many programs and is offered as an elective course in the Communicative Sciences and Disorders department house in the School of Speech, Language, Hearing, and Occupational Sciences at the University of Montana.

### **Purpose of Literature Review**

The purpose of this review is to explore the existing literature on service-learning specifically related to Communication Sciences and Disorders, with particular consideration of overall outcomes, specific skill development, and potential career influence.

### **Service-Learning**

“Service-learning incorporates community work into the curriculum, giving students real-world learning experiences that enhance their academic learning while providing a tangible benefit for the community” (Campus Compact, 2019). Service-learning is built on Kolb’s (1984/2015) Experiential Learning Theory.

### ***Theoretical Framework***

Service-learning is based on Kolb’s Experiential Learning Theory (Kolb, 1984/2015). Learning through engagement, according to Kolb, is done by obtaining and transforming experience resulting in knowledge (1984/2015). Through the partnered models of concrete

## SERVICE-LEARNING IN CSD

experience and abstract conceptualization, one obtains the experience. Concrete experience is engaging in an activity related to the learning, and abstract conceptualization means learning from the experience. The learner then transforms the experience through reflective observation and active experimentation. Reflective observation is executed by connecting their knowledge to their experience. Active experimentation is acting on knowledge to drive their personal performance goals. Through the ongoing relationship between the four learning approaches, one develops their learning. Kolb (1984/2015) describes the four models as a “learning spiral” where they are concurrently, sequentially, and continually engaged resulting in “new implications for action.”

Kolb’s (2015) experiential learning theory is the product of many other theories and concepts. William James’ radical empiricism emphasizes the value of experience, and his dual knowledge theory stresses in the moment experience. John Dewey offered experiential education resulting in laboratory (lab) schools. Mary Parker Follett expressed that our actions are built on a culmination of our past experiences. Kurt Lewin provided action research, the art of using data to inform change. Jean Piaget contributed constructivism; cognitive growth from concrete to abstract. Lev Vygotsky offered up social constructivism, growth through mentoring, and the zone of proximal development, going from supported learning to independent performance also known as scaffolding. Carl Jung contributed to the whole person through individuation by acknowledging complimentary dyads in ourselves such as the conscious and the unconscious, feeling and thinking, etc. that contribute to the complete person. Carl Rogers had three significant contributions with the first being the importance experiencing in exacting change and learning; the second being the development of self-worth by engaging in educational conditions that include respect, unconditional positive regard, and psychological safety allowing for

## SERVICE-LEARNING IN CSD

freedom of thought; lastly, Rogers shared self-actualization through the process of experiencing; essentially putting aside the influence of others and developing concepts based on one's internal sense of self and allowing that to guide behavior. Paulo Freire contributed the concept of "naming the experience" for the purpose of conversation with other learners resulting in conversational learning.

As a researcher, I value learning the spiral foundation of experiential learning theory. Within this framework foundation, the contributions of constructivism (Piaget), scaffolding (Vygotsky), developing self-worth through respectful relationships (Rogers), and self-actualization through experiencing (Rogers) resonate with me. Service-learning through peer mentoring has the opportunity to take the concrete learnings of the classroom and expand them to the abstract generalizations of the real world. Service-learning can be viewed as a rung in the scaffolding of professional development and developing self-worth and engaging in self-actualization are the anticipated outcomes of the event.

**Written Reflection.** Peters (2011) noted the importance of reflection and how, through the process, the didactic portion of the experience takes on meaning. Reflection provides the link between learning and doing and is a recommended practice (Celio, et al., 2011). Arguably, reflection is how one makes sense of the experience, integrating book learning with life experiencing. Guthrie and McCracken (2014) found reflection to be an essential element in service-learning. Pereira et al. (2016) shared that the act of reflection through written work allows for extended thinking; allowing one to engage in meta-cognitive processing of the event. This leads to Kolb's (2015) assertion that reflective observation is executed by connecting knowledge to the experience. Reflection is essential when making meaning out of the experience.

### **Didactic Learning Pedagogy**

Dale (1948) describes the Cone of Experience in his literature. This concept has morphed into the Pyramid of Learning, a widely used model of teaching methods effectiveness. The pyramid and its accompanying percentages are touted as mythical by Masters (2018) as there is no evidence in the literature to support its development. Going back to the original concept and theoretical foundation of pedagogy, the Cone of Experience layers the strongest teaching methods to the weakest in terms of learner retention from the bottom up (Dale, 1948). The first three layers have the learner as an active participant. “Direct, purposeful experiences” creates the foundation of the triangle. This would be akin to service-learning. “Contrived experiences,” the next powerful learning measure would include teaching methods such as simulations. “Dramatic participation,” such as role-play, creates the next layer. The upper five layers describe the learner as an observer and this includes demonstrations, field trips, exhibits, motion pictures, radio/recordings/still pictures, visual symbols, and at the top verbal symbols. One can surmise that based on the Cone of Experience that active learning is preferred to passive learning.

### ***Instructional Conversations***

Instruction conversations are discussion-based opportunities for instruction and grew out of the Socratic seminar (Goldenberg, 1991). In keeping with Dale’s (1948) encouragement for active learning, there has been advocacy for more use of discussion in the classroom (Goldenberg, 1991). The instructor has the ability to create a respectful climate in their classroom (Wilén, 2004) where small group discussions are more effective (Pollock, et al. 2011). Classroom discussions promote critical thinking skills (Wilén, 1990). The discussion builds on provided information and encourage ideas (Goldenberg, 1991). Instructional conversations are categorized into two parts, the first being instructional elements that includes theme focus,



## SERVICE-LEARNING IN CSD

activation of knowledge, direct instruction, complex vocabulary and language development, and development of positions. The second part references conversational pieces that include questions that have less known answers, responsivity to contributions, safe space, and participation by all students (Goldenberg 1991 & 1993). Goldenberg's (1991) study revealed that instructional conversations as learning, compared to a comprehension with recall learning structure, resulted in the students having a more sophisticated and complex conceptualization of the topic. Goldenberg (1991) acknowledges that instructional conversations is an expansion of one's teaching practices, not a replacement for all methods.

Classroom discourse is well established as an effective teaching tool in the education literature. Through implementation of the facilitate-listen-engage model (Lloyd, et. al. 2016) students engage in an equal partner with the instructor. In the facilitation phase, the instructor lays the foundation to support the subsequent phases through sharing information. The listening portion requires students and instructors to listen to each other's reflections and comments. The engagement phase that layers on top of and with the listening phase, gives opportunity for thought development and expression. These opportunities are where learning occurs and problem-solving, listening, and speaking skills are refined (Grifenhagen & Barnes, 2022). Learning through discourse contributes to student outcomes (Howe, et al. 2019).

### ***Learning Augmented by Movies***

Raghu and Narash (2018) describe movies as "rich and insightful" as teaching tools while Harper and Rogers (1999) refer to them as "effective instructional tools." Wade, et al. (2018) felt that constructivist learning can be encouraged through movies. Movies make concepts, materials, and subjects easier for learners to understand (Parker, 2009). Wade et al. (2018) provided

## SERVICE-LEARNING IN CSD

evidence that faculty and students felt movies useful to meet competencies and learning objectives.

According to Lavelle (1992), teachers report that historical documentaries can encourage further research, promote discussion, and stimulate an emotional response to something that seems distant. Beyond the entertainment value, movies can clarify confusing or vague concepts from materials (Parker, 2009). Without causing interruption of the dramatic flow, stopping the movie at points to answer questions or prompt critical thinking, possibly through discussion, creates an active experience of questioning, exploration, and learning (LaVelle, 1992). LaVelle (1992) described learning through films as a “pedagogically efficient” means of education.

### **Outcomes of Service-Learning in Communication Sciences and Disorders**

Many pre-service professional programs integrate service-learning into their course of study. The literature reviewed in the area of communication sciences and disorders reveals a variety of service areas with an array of benefits. A journal associated with CSD recently published an article in the area of autism (Nowell et al., 2020).

Service-learning overall yields improved attitudes toward self, attitudes toward academics, increasing civic engagement, developing social skills, and increasing academic performance according to Celio et al. (2011). Peters (2011) revealed benefits associated with increased course satisfaction, higher performance academically, and critical thinking skills related to application of knowledge to real life settings for service-learning in CSD. Other benefits included developing cultural understanding and reduced stereotypes related to race. Empathy and perspective taking were other noted attributes. Students often became committed volunteers upon graduation.

## SERVICE-LEARNING IN CSD

### *Academics*

Service-learning can bridge knowledge to application. Peters (2011) reported about Western Washington University hosting a course called CSD 485: Children with Hearing Loss in Schools started in 2008 and provides service-learning. Students were asked to generate pros and cons of their service experience in their final reflections. Students relayed in the pros that they were able to connect academics to real-world applications and application of knowledge was valuable. None of the cons were related to academics. On a rating scale of 1-5, the participants averaged a 4.25 (between strongly agree and agree) that “My service-learning experience helped me better understand the course content” and a 4.5 on “the service-learning experience in the course helped me see how the subject matter I learned in class can be applied.” Service-learning supports didactic learning.

Sylvan (2022) studied a graduate level service-learning course that required SLP students to engage in tutoring services in an elementary school. The students reported that the associated project enhanced their understanding of course content. Service enhances learning for SLP undergraduate and graduate students.

### *Civic Engagement*

Students are more likely to become involved civically as a result of engaging in service-learning. Peters’ (2011) study of the CSD 485 service-learning course revealed that students ranked “I have a civic responsibility to become involved in my community” at a 4.5 (between strongly agree and agree) and a 4 (agree) with the statement “If I had the opportunity, I would do service-learning again.” Future civic engagement is a hopeful by-product of the experiential learning experience.

## SERVICE-LEARNING IN CSD

### *Cultural Competence*

Peters (2011) identified development of cultural understanding and reduced stereotypes related to race as benefit of service-learning through meta-analysis. As a requirement of accredited CSD programs, cultural competence can be nurtured through service-learning according to Goldberg (2007). Chakraborty and Proctor (2019) researched the service-learning experience of Study Away Nicaragua (SAN). This program had audiology, speech-language pathology (SLP), and occupational therapy (OT) students creating an inter-professional collaboration opportunity with a culturally diverse population. A focus group was held at the conclusion of the trip and Chakraborty and Proctor (2019) learned that as a result of the interprofessional experience, audiology and SLP students learned about the occupational therapy scope of practice. The themes that emerged included acknowledging different perspectives, not only looking through the lens of an OT and then the lens of a SLP when interacting with a child, but rather acknowledging the Nicaraguan culture in comparison to the American culture. Multiple learning strategies was a second theme that emerged from the focus group. The students found it meaningful to observe the faculty in multiple interactions with parents, teachers, and clients, to develop their skills and real-world applications. A third theme emerged with regard to understanding the role of another profession. Specifically sensory needs, seating, accessibility, and positioning became evident in the scope of practice of the OT. Lastly, working with interpreters was identified as theme for students. Specifically, students noted that they had to change their communication style, such as simplifying language and waiting for the relay between the interpreter and the partner, and behavioral changes, such as making sure that one looks at the communicative partner rather than the interpreter. The SAN service-learning

## SERVICE-LEARNING IN CSD

opportunity resulted in skill development, increased understanding of OT practice by SLP students, and development of cultural competence for the participants.

When considering other foreign opportunities, service-learning in Zambia resulted in increased cultural competence and applied clinical skills according to Krishnan et al. (2016). Students in Speech, Language, and Hearing Sciences participated in a series of service-learning events. During Spring semester, they attended two class sessions, followed by a one-week intensive summer course with a lab, followed by two weeks in Zambia working with multiple sites, followed by two debriefing meetings. Work in Zambia involved supporting schools for the Deaf, primary schools, early intervention opportunities, non-profit work with children with disabilities, and cultural excursions. Data was collected through pre- and post-administration of the Public Affairs Scale (PAS) and reflection in the form of journals, papers, videos, and field notes. According to the results of the PAS, students increased their perceptions in community engagement, cultural competence, and ethical leadership areas. Qualitative data revealed themes of cultural awareness, understanding of foreign healthcare, perceptions of disability and educational opportunities for those that have disabilities, value of hands-on learning such as confidence building, applied knowledge, and client interaction, and emotional experiences such as challenges, positive experiences, and personal growth. The recurring themes of cultural competence and the value of applied learning are evident through this research.

### ***Skill Development***

As mentioned by Peters (2011), service-learning can be integral to skill development. Allman (2013) reviewed a service-learning program centered around literacy and “Response to Instruction” (RtI) in local schools as part of a literacy course. Based on meeting the university mission, community needs, and providing practical application, this service-learning course was

## SERVICE-LEARNING IN CSD

developed. The students provided reading tutoring in the schools once a week for 12 weeks. Their experience was measured through completing a pre- and post-test questionnaire called “Being Active in Your Community” designed by Conrad and Hedin in 1981. Open-ended questions were also part of the post-test. Forty students completed the pre-test and 36 the post-test. Lower scores on the post-test in the area of evaluative indicated that participants had more positive attitudes about being active in the community. Furthermore, higher post-test scores on the difficulty subtest indicated that it became easier to be community active. Finally, lower post-test scores with regard to future interest revealed that there was interest in being community active in the future. Novelty had no gain or decline as a subscale. Thirty-five of the students completed the open-ended questionnaire. Interpretation revealed that 31 of the students responded positively to the questions while 4 provided neutral responses. Thirty-four of the students saw the experience as beneficial while only 1 provided a neutral response. All students recommended that the service-learning project continue. When asked “what did you learn,” seven themes emerged. Students learned literacy teaching strategies, book selection, creating engaging and positive lessons, and session management. Creative lesson planning and behavior management were identified as skills that would be employed in the future. Twenty-seven of the students reported that their beliefs regarding teaching changed while eight remained neutral. The students were able to identify challenges such as getting started, book and reader matching, creative lesson planning, behavior management, and scheduling. Outcomes of this study lent more to professional skill development; however, the positive outcomes of this study are consistent with those from other research on service-learning. Beyond schools, service-learning can be implemented in other institutions such as detention facilities.

## SERVICE-LEARNING IN CSD

Responding to the need for early intervention in vulnerable populations, Pace et al. (2019) reviewed a program that supported infants of incarcerated mothers. Programs are emerging where children are housed with incarcerated mothers. Thirty master's level graduate students in speech-language pathology participated for a full year. Clinical educators and students provided a workshop one to two times per quarter. Information lecture was provided for 10 minutes by the clinical educator, then mother-child groups had 20 minutes of individualized interaction with student clinicians. The process was then repeated. Two pre- and post-surveys were utilized; the Civic Attitudes and Skills Questionnaire (CASQ) and the Community Service Self-Efficacy Scale (CSSES). Students were also required to write reflections from prompts designed to facilitate critical thinking. The CASQ ratings did not change between pre- and post-administration, however, students showed an increase on the CSSES in self-efficacy. Reflections revealed that learning was the biggest outcome with students developing their skills in family-centered intervention, confidence in working with mothers that were incarcerated, and improved awareness of self in relation to bias and prejudice. Cultural competence, self-efficacy, and practical application were positive outcomes of this service-learning opportunity. Prompted writing provided the most insight into this experience.

Service-learning components can sometimes be the highlight of a learning experience. Cokely and Thibodeau (2011) gained some insight to a service project associated with an auditory rehabilitation course. As part of the adult rehabilitation course, students were required to research an issue, design and implement a project that included a feedback tool, and reviewed outcomes. Like many of the studies reviewed, reflection was required in the form of weekly journal entries. This retrospective study gained insight into the experience. After reviewing the course evaluations, researchers discovered that course ratings were slightly lower upon the

## SERVICE-LEARNING IN CSD

conclusion of the course. Overall, the course remained favorable, however, learning amount, relevance, workload, responsibility clarification, and instructor contribution dipped in comparison to a pre-course survey. Comments revealed that the service component strengthened their understanding of core concepts. Several students shared that the service component improved confidence professionally, applied problem-solving opportunities, or improved self-awareness. It was learned that approximately half the students did not understand the reflection process through journaling suggesting the need for more guidance when implementing this strategy.

Skill development, as an ongoing theme, seems to be a large part of experiential learning. Reading and Padgett (2011) looked at service-learning associated with American Sign Language (ASL) instruction in the Deaf community. Service-learning was implemented through an ASL class as a choice and 10 of 32 students took advantage of the opportunity. They implemented 17 to 20 hours of service with the Deaf community and completed weekly reflections in a journal. A questionnaire was administered at the end of the semester. Students also provided a video of their signing skills at three points during the semester. The video analysis uncovered gains in ASL fluency scores for service-learning students as compared to the students that did not do service-learning. Students in the service-learning option reported that they felt that they had developed their ASL skills as well as respect and understanding for the Deaf culture. Cultural competence is another ongoing theme of service-learning.

Service-learning can be employed to promote understanding of a profession. Weaver et al. (2018) of Auburn University researched a professional learning community called Music and Science, established in 2013. Both music majors and CSD undergraduates took part in this service-learning opportunity. Prior to the experience, students completed a survey based on their



## SERVICE-LEARNING IN CSD

current knowledge and then completed a similar survey after the experience. The service involved providing three evidence-based music activities in either a health and rehabilitation center or a childcare facility. Results indicated that beliefs regarding the influence and benefits of music listening, as well as music training, increased positively. Awareness of CSD professions by non-CSD majors was also noted.

Sylvan (2022) found that with academic enrichment from a service-learning graduate course, graduate students were able to develop skills specific to the role of the SLP in public schools. Students were able to apply course content to intervention, learned about education frameworks and policies such as Common Core State Standards, the role of the SLP in the schools, and lastly, they felt more prepared for their future work in the schools.

### ***Advocacy***

The pursuit of advocacy skills can be lifelong (Grapin et al., 2021). Service-learning pedagogy can inspire advocacy among participants (Moore, 2013). Grapin et al. (2021) exposed that a service-learning experience through a psychology department lead to social justice. The participants in the qualitative study were able to identify the need for change. The participants reported engaging in advocacy efforts through taking action on behalf of marginalized peoples, expanding awareness, and building relationships to support change.

DeBonis (2015) found similar outcomes from a study that involved nursing students in service-learning. In reaction to health provision inequities, students identified advocacy as their response with regard to client engagement, education, referrals and resources. Moore (2013) found similar results of English language teachers self-describing as advocates for their students and families after a service-learning experience. Other service-learning experiences will likely lead to embracing advocacy on behalf of the populations they support.

## SERVICE-LEARNING IN CSD

Celio et al. (2011) and Peters (2011) through literature review revealed recurring themes. Cumulatively, these studies found that students experienced improving attitudes toward themselves and others through empathy and perspective taking. Their attitudes toward academics increased and influenced increased academic performance and heightened course satisfaction. Students increased their civic engagement and became committed volunteers upon graduation. Cultural competency developed through understanding and reduced stereotypes related to race. Specific skills developed such as reading instruction strategies and ASL skills as well as more generalized skills such as social skills and critical thinking skills related to application of knowledge to real life settings. Advocacy can develop as students understand the populations they serve and their specialized needs.

### **Outcomes of Service-Learning Related to Perception, Understanding, and Attitudes**

#### **Toward Autism**

As service-learners develop their skills, cultural competence, and knowledge, they also become aware of their attitudes. Interdisciplinary service-learning students consisting of audiology and speech-language pathology students worked with adults with dementia for 15 sessions. Through analysis of journal entries, 79% of these students developed more positive attitudes toward the population in comparison to their non-participating peers, according to Kaf et al. (2011). Service-learning with elderly people is likely to develop more positive attitudes toward that population. This concept could likely be extended to other populations such as autism.

Unfortunately, there are problems with perceptions of people with ASD on college campuses. Gillespie-Lynch et al. (2015) reported that peers, professors, and staff may not understand autism therefore posing a challenge to those with the disorder that attend college.

## SERVICE-LEARNING IN CSD

Current research reveals that the attitudes associated with autism can lead to social exclusion and perceptions of cognitive inferiority. These sentiments were evident in Huws and Jones' (2010) qualitative research study employing interpretative phenomenological analysis and Foucauldian discourse analysis. Ten people, three women and seven men, between the ages of 26 and 39 years of age volunteered for the study. They reported that they knew nobody with autism and had little to no knowledge of the disorder. Information was gathered individually through semi-structured interview. Huws and Jones (2010) found that lay people perceived people with autism to be breaking societal rules and were not part of "normal society." The interviewees also relayed that they did not think people with autism would live independently. Those with autism were also viewed as not wanting to socialize. Some participants confused autism with cognitive delay, mental illness, or learning disability. Of most concern was the concept that people with autism do not want to socialize, which could lead to further social isolation. Huws and Jones (2010) suggested a need for strategies to increase positive attitudes regarding those with autism.

Nevill and White (2011) identified similar concerns with their study that involved the perceptions of college students with autism. The *Openness Scale* developed by Harnum et al. (2007) was modified to depict a college-aged student with a gender-neutral name. The modified narrative was followed by seven statements to be rated by the reader on a five-point Likert scale spanning from strongly disagree to strongly agree. Nearly two thirds of the 685 respondents were female. Fear associated with the person in the vignette was not reported by 73.5% of the participants and 75.3% were comfortable with the person living in near proximity. More than half of the participants, 54.9%, agreed that the person in the vignette was not as smart as they were. Reporting that they were unsure if they would hang out with Jamie, the character depicted, were 38.5% of participants and 34.9% said that they would not hang out with Jamie. Less than

## SERVICE-LEARNING IN CSD

half, 40.5%, of participants reported that they would feel comfortable around Jamie, while 85.3% of participants identified Jamie as being different from themselves, and 50.8 % of respondents said that they would like Jamie as a person. Overall, students that reported having a first-degree relative with autism had higher openness results. In conclusion, the study presented evidence that college students with autism are often viewed as having lower cognitive abilities, could experience social isolation with only about a quarter of their peers willing to hang out with them, and will have more acceptance from those that have first degree relatives with autism. These findings align with Huws and Jones' (2010) suggestion of finding strategies for developing positive regard for people with autism. One strategy could be training.

Gillespie-Lynch et al. (2015) conducted a study to see if perceptions of adults with autism changed with training designed to increase knowledge and reduce stigma. The training involved reviewing 71 slides in a slide show with periodic comprehension checks. Information about a broad range of topics was presented and it was self-paced. An identical pre- and post-test was administered to the 365 participants before and after the training to assess knowledge and perceptions of autism. Like Nevill and White (2011), those with immediate family members demonstrated less stigma associated with autism. Women also showed evidence of less stigma in comparison to men from data collected before the training.

Hamilton et al. (2016) was able to assess the outcomes of university students that participated in peer mentoring of people with autism at the college level. They implemented a four-level assessment model used to evaluate training. Seven students from the psychology and occupational therapy programs participated in this study. Participants underwent training specific to ASD then five of the participants acted as peer mentors while two ran weekly social skills groups, similar to the MOSSAIC program. Using a Likert type survey and semi-structured

## SERVICE-LEARNING IN CSD

interview, Hamilton et al. (2016) learned that the training was considered valuable. Through the questionnaire, students indicated a 29% increase in knowledge scores regarding autism. The participants shared that overall, the experience of being a peer mentor was positive.

Wilson, et al. (2017) researched first year graduate students as they provided service for their campus adult autism center. SLP students were tasked with supporting social and communication skills as well as functional reading including comprehension and fluency. Upon the conclusion of the experience, SLP students were administered a Likert scale assessment called “The Autism Knowledge Survey-Revised” and an open-ended five item questionnaire. The results indicated that the SLP students developed their knowledge of ASD. Participants described interactions with multiple people with ASD beneficial with reference to the diversity of the disorder and many of them appreciated the understanding of autism as a spectrum disorder. Collaborative practices enhanced the overall experience according to the participants and they all increased their clinical knowledge with respect to ASD. Many students came to understand the specific needs of adults with autism on campus. Students gained clinical skills related to ASD as well as confidence. Lastly, of significant importance, many students became more open to interacting with adults on the autism spectrum.

Stigma is associated with a diagnosis of autism. This could lead to social isolation for those attending college as well as other venues of life. Strategies are needed to support people on campus with autism to encourage inclusion and belonging. The good news is that a recent study by Nowell et al. (2020) revealed that students that participated in service-learning that involved people with autism had more inclusive attitudes after the experience.

### **Service-Learning and Career Pursuit in Communication Sciences and Disorders**

As noted in chapter one, we have a good understanding of factors that influence the choice of graduate school for many, including cost, quality advisors, and clinical experiences (Pavelko et al., 2015). We also have good understanding of what brings people to the field of CSD such as the promise of interesting work, working with people (Keshishian & McGarr, 2012) and helping people (Byrne, 2007). Brodsky and Cooke (2020) were able to identify early coursework as contributors for people pursuing the field of speech-language pathology. This is encouraging because service-learning is largely conducted at the undergraduate level. Personal factors were the most significant contributors to deciding to pursue the field with the top three influences being friends, family, and relatives. Specific academic influences included high school courses and teachers as well as undergraduate course content. Undergraduate course content revealed no specifics; therefore, it is unknown if service-learning content contributed. Lastly, potential SLPs were swayed by employment factors such as income, availability of work, and job security. It is unknown whether service-learning experiences may influence career pursuit in CSD, but there is information about service-learning in general informing career pursuit.

Academic, social, and service experiences influence career development (Warchal & Ruiz, 2004), and service-learning can inform the exploration of careers (Mitchell & Rost-Banik, 2019). Rehearsal of these service roles can help students understand their interests and develop their skills. (Mitchell & Rost-Banik, 2019). Otto and Dunens (2021) found a connection between service-learning and career preparedness and advocate the prioritization of community engaged learning in institutions including higher education. They also identified personal development as an outcome beyond career preparation. Employers want effective communication, critical

## SERVICE-LEARNING IN CSD

thinking skills, ethical decision-making, teamwork, initiative, and skill application and according to Otto and Dunens (2021) service-learning fosters growth in these areas. Within this list of skills, Otto and Dunens (2021) reported that students are able to determine their proficiency in each area through community-based experiences and therefore express their strengths and areas to grow to their potential or current employers. Logically, we can infer that service-learning influences workforce development (Mitchell & Rost-Banik, 2019).

### **Service-Learning Concerns**

Service-learning may not yield results for every participant. Jones (2002) describes students that “don’t get it.” She acknowledges that these instances are not that common and that there are some key factors that may keep a student from fully benefitting from the experience. Jones (2002) identifies background, privilege, and maturity as potential barriers for some learners. She does not fault the student, rather she identifies critical features of being considerate of the developmental level of the learner, creating a course that is meaningful to the learner, and preparing the instructor to address complex issues that is likely related to the learner’s maturity, cognitive level, and knowing oneself. With advancements in service-learning instruction, instructors will hopefully reach more engaged students.

### **Summary**

Service-learning yields results such as civic engagement, cultural competence, skill development, and the opportunity to connect book learning to application (Celio et al. 2011, Peters, 2011). Didactic learning is part of the service-learning structure and is well served by active learning opportunities. We know that many college students view people with autism as “less than” but can change their attitudes with education and service in the field (Gillespie-Lynch et al., 2015, Hamilton et al. 2016). Professional pursuit is often motivated by personal factors,

## SERVICE-LEARNING IN CSD

however, undergraduate coursework that may or may not include service-learning contributes to commitment to the profession of SLP and related fields (Brodsky & Cooke, 2020). Few students are impervious to change through quality service-learning experiences (Jones, 2002). This leaves us with the need to understand if service-learning in the form of mentoring peers with ASD yields the same results as other experiences; if attitudes and knowledge regarding autism change through exposure and relationship development; and whether this type of service-learning influences the choice to pursue further study and perhaps a career in SLP.



### **Chapter Three: Methodology**

#### **Research Design**

In this study, I utilized an interpretive exploratory collective case study (Creswell & Poth, 2018; Yin, 2018) approach implementing interviews and a retrospective review of documents (Creswell & Poth, 2018). This study lent itself to case study because it was a unique case that investigates peer mentoring people with autism as service-learning. The study offered interpretation through deductive and inductive analysis of the artifacts. The information gathered was used to explore the experience of undergraduate students that have participated in the University of Montana service-learning course CSD 396 - Autism on Campus/SvcLrn. The course is linked to the Mentoring, Organization, and Social Support for Autism/All Inclusion on Campus program.

Knowing I wanted to explore this case through qualitative inquiry, I did entertain other study methods. Narrative research (Creswell & Poth, 2018) was considered, but it was more aligned with reporting lived experience rather than reflection. Phenomenological research (Creswell & Poth, 2018) was evaluated, and despite all participants having the shared experience of peer mentorship, a phenomenon was not identified going into the study. Grounded theory (Creswell & Poth, 2018) was considered; however, the research did not have the prospect of generating a theory. Ethnographic research was not applicable despite the fact that I was immersed in the experience. The study did not support understanding a culture, but rather outcomes of an experience. I landed on case study research (Creswell & Poth, 2018) because it gave consideration to a shared experience of the subjects within a certain setting. The service-learning students were bound by the experience offered each semester associated with CSD 396 and I had multiple sources of information including reflection papers and interviews.

## SERVICE-LEARNING IN CSD

The case is unique in that it explores outcomes of peer mentoring people with autism as the execution of service-learning through the CSD 396 course. This case is understood in depth through full participant observation, I am the developer and instructor of the CSD 396 course, and director of the affiliated MOSSAIC program. Through the careful review of unguided reflection papers and semi-structured interviews, along with member checks, and work with outside coders, we identified patterns and explanations with regard to the research questions. The exploratory case study design also lends itself to the discovery of new or unique themes. The investigation of service-learning benefits to mentors was conducted through qualitative analysis of reflection papers submitted as a course requirement and interviews with selected participants. The papers reviewed will be of CSD 396 students that participated in in the reflection paper assignment initiated in fall, 2017 through fall, 2021.

Students that register for CSD 396 participate in supporting people in the MOSSAIC program in different ways. Many of the enrollees meet weekly as a peer mentor with a UM student or career seeking person with autism. This time is used to meet the needs of the individual. Sometimes participants (people with autism) would like to just talk or hang out. Sometimes they would like support with organization. Some participants really enjoy board games while others wanted to explore art or cooking. The mentee and mentor agree on how they would like to use that time together during scheduled meetings and meet individual needs and requests. Upon completion of the course, the students are asked to write a two-page unguided reflection paper about their experience.

### *Artifacts*

**Reflection Papers.** Reflection is an integral part of the service-learning process. Often, as part of a service-learning course, students are required to participate in a reflection activity.

## SERVICE-LEARNING IN CSD

Students in the CSD 396 course were asked to generate an unguided two-page reflection paper based on the course experience. Unguided meant that students were able to express their thoughts, feelings, reactions, and take-aways as they saw fit at the end of their service-learning experience, without explicit guidance or judgment. These papers were identified as a source of data for this study.

**Semi-Structured Interview Design.** The Civic Attitudes and Skills Questionnaire (CASQ) (Moely et al., 2002) is often administered pre and post experience to determine any change as a result of the service-learning. It looks at civic action, interpersonal and problem-solving skills, political awareness, leadership skills, social justice attitudes, and diversity attitudes using Likert type questions. Items from the CASQ that influenced my question design focused on future community service, problem solving, relationships, perspective taking, current issues, making a difference, public policy, equality, and cultural diversity.

**Interview Questions.** After reviewing the CASQ questions (Moely et al., 2002), the following questions were developed with relevance to the CSD 396 service-learning experience:

Participation:

1. When did you participate in the MOSSAIC program during \_\_\_\_\_?
2. Did you participate more than one semester?
3. (If participant was involved in more than one semester) What determined your participation in more than one semester of this course?
4. In what capacities did you provide service? For example, some students were mentors to adults with autism, some helped develop autism acceptance activities, some attending the adult social evenings, some supported direct services in the clinic. Please describe the ways you contributed.

## SERVICE-LEARNING IN CSD

5. What was your major at the time of participation?
6. Had you participated in a service-learning course prior to this one? What did you learn from that experience?

### Attitudes Toward Disability:

1. Tell me about any experience with a person or persons with ASD prior to this opportunity?
2. Tell me about any experience with adults with ASD prior to this opportunity?
3. Prior to engaging in MOSSAIC, did you have any friends with disabilities?
4. If yes, can you say more about that?
5. After the MOSSAIC experience, have you had any friends with disabilities?
6. If they were a direct result of your involvement in MOSSAIC, are you still friends with them in some capacity? How would you describe your friendship?

### Knowledge of Autism:

1. How would you characterize your knowledge of ASD prior to the CSD 396 experience?
2. What do you think you learned about autism as a result of the experience?
3. Can you share some specifics?
4. Can you identify any specific skills that you brought away from the experience?
5. How did you feel about your interactions with your mentee? Did it change during the semester?

### Professional Development:

1. Prior to this experience, were you planning to become a speech-language therapist? Describe how you felt.

## SERVICE-LEARNING IN CSD

2. Did your service-learning experience have an impact on your decision in any way?
3. Do you see yourself volunteering in the future as a result of this experience? In what capacity?
4. Is there anything else you'd like to share with me about this experience?

In keeping with the form of semi-structured interview, I utilized follow-up questions for each item. They took the form of “I heard you refer to \_\_\_\_, could you please elaborate on that thought” or “you mentioned \_\_\_\_, could you please tell me a little more so I can fully understand what you are trying to convey.”

Interview questions were designed to investigate informants' experience outcomes with peer-mentoring students with ASD, its impact on their understanding of ASD, and their subsequent career choices after the experience.

### **Participants**

#### ***Informed Consent***

Upon Institutional Review Board (IRB) approval of documents and the research study, participants were required to complete informed consent documents for both reflection papers and semi-structured interviews (appendix B). Documents were collected in person or via email. In person documents were scanned for compliance purposes and a copy was emailed back to the research participant.

#### ***Participants: Reflection Papers***

Former CSD students from CSD 396 (or past equivalent) were approached about having their reflection papers analyzed for the purpose of this study. Collectively, students were undergraduate or leveling (already have a degree and are taking coursework so they could apply

## SERVICE-LEARNING IN CSD

to graduate school) and were mostly majors in the Communicative Sciences and Disorders (CSD) department, with a few students representing other service professions; some disciplines represented were Special Education, Psychology, Athletic Training, and Social Work.

Past CSD 396 students from fall, 2017 to fall, 2021 courses were contacted via email requesting the use of their final reflection paper assignments. A copy of the consent form was attached to the email. Students who were agreeable signed the consent form authorizing use of their papers and returned it to me.

### *Participants: Semi-Structured Interviews*

Hennink & Kaiser (2022) found through systematic review that 9-17 interviews reached saturation. I selected 10 past and current participants in the CSD 396 service-learning course to engage in semi-structured interviews. These interviewees reported varied backgrounds; for example, students that participated early in the program, students with a first-degree relative with autism, a student from another major, students from rural and populous areas, and students of varying ethnic backgrounds provided rich information for this study.

There were 10 purposefully selected diverse interviewees to best inform my research. Once selected they were contacted via email or instant messaging. Upon agreement, interviewees were asked to sign and return consent forms via email for participating in recorded interviews via Zoom.

### *Ethical Considerations*

Pseudonyms were created for the participants and inserted during transcription and narrative write up to avoid any accidental exposure. Other identifying information was identified and altered to ensure the anonymity of the participants and the people that they referenced.

### **Data Collection**

#### ***Reflection Papers***

Using convenience sampling (Marshall, 1996) twenty-seven authors responded with signed consent forms resulting in the use of 40 of 75 potential papers. They were collected from former CSD 396 students through the teaching platform Moodle. These papers were obtained from archived areas with the assistance of technology support professionals from Moodle, the UM online learning platform. Once retrieved they were de-identified and ready for analysis.

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

Ten interviews were conducted via Zoom video conferencing technology. They were recorded and transcribed and then member checked. Pseudonyms were applied to the transcripts for confidentiality reasons. Member checking ensured the highest degree of accuracy in the thoughts that the participants shared. Three interviewees edited or added to their transcript through member checking.

### **Data Analysis**

Creswell and Poth (2018) describe data analysis as a process of data organization for the purpose of analysis, then, through coding and refinement, the information is reduced to themes. Through the process of decontextualizing and recontextualizing the data, results are shared through narratives and tables. Creswell and Poth (2018) describe reading and memoing as the first step in the process to identify emergent themes.

#### ***Reflection Papers***

Data analysis began with the process of memoing; an initial attempt to identify themes. Next, the reflection papers were uploaded into qualitative software, NVIVO, and processed to identify initial parent codes and subsequent child codes. They were analyzed and coded for

## SERVICE-LEARNING IN CSD

initial constructs using participants' own words, then examined across cases to compare and develop common categories and outlier themes. I processed all 40 papers, while the research assistant reviewed 10. After initial review, consensus was low between me and the research assistant. The initial lack of consistency was likely due to the density of the material interpreted. Tables were developed to reinforce data comprehension. Results were analyzed and conclusions were drawn. Suggestions were discussed and upon consensus, themes were adjusted (Hill et al., 2005). Upon the conclusion of this process, we refined our work into what eventually became 19 parent codes and 299 child codes. Due to software challenges, we agreed to change to Dedoose for ease of use. We then reviewed the same 10 papers each only using the 19 parent codes and obtained 79% consensus. I then proceeded to work through all 40 papers to assign each excerpt to parent and their subsequent child codes. Finally, an experienced qualitative researcher independently sampled an additional 10% of transcriptions to gauge for consistency.

### *Semi-Structured Interviews*

Member checked and de-identified transcripts were initially memoed by me. Then they were hand coded and organized through an Excel spreadsheet. The research assistant reviewed three of the interviews and organized them through Excel as well. Through comparison we had 93% consensus. Lastly, an experienced qualitative researcher independently sampled a transcript to gauge for consistency.

### *Post Coding*

With regard to both reflection papers and interviews, the themes were interpreted and contextualized to provide an understanding as it emerged through analysis. In other words, I used the interpretative structure of the exploratory collective case study approach for both reflection papers and interview transcriptions. Finally, themes were recast into narrative form and tables,



## SERVICE-LEARNING IN CSD

summarizing features of participants' experiences while staying true to original data sources. The resultant broad themes were 1) deep learning, 2) relationships and inclusion, 3) professional and personal development and 4) development of advocacy and increased access. Appendix A demonstrates the parent and child codes that were reorganized into these four broad themes.

### **Chapter Four: Results**

Twenty-seven of 56 students emailed agreed to share their unprompted reflection papers from the CSD 396 course yielding 40 of a possible 75 papers. These papers were de-identified and subjected to deductive qualitative analysis.

Ten past and current CSD 396 service-learning students participated in interviews at my request. Interviews were transcribed, de-identified, and inductive qualitative analysis was applied. Interviewees were purposefully selected based on their diversity. Eight of the participants had completed at least one semester of CSD 396, while two were currently taking the course and at the mid-term mark. The chart below (Table 1) demonstrates their diversity and relationship to the service-learning experience.

Through decontextualizing and recontextualizing the content of the papers and the interviews, four themes emerged including 1) deep learning, 2) relationships and inclusion, 3) professional and personal development and 4) development of advocacy and increased access.

SERVICE-LEARNING IN CSD

**Table 1**

Interviewee information

Pseudonym	Contribution to diversity	Course Status	Peer Mentored	Attended Social Events
Emerald	Raised in rural area	Took course three times	Yes	
Jasper	Latina, student director, cousin with ASD	In second repetition of course	Yes	Yes
Amber	First degree relative identifies as ASD, cousin with ASD, non-traditional student	Single course participant		Yes
Garnett	Integrated Physiology and Athletic Training (pre-physical therapy), nephew with ASD	In first course experience		Yes
Jade	Raised in urban area, cousin with ASD	Repeated course	Yes	Yes
Opal	Raised in foreign country	Took course three times	Yes	Yes
Beryl	Latina, participated mid-program six years ago	Repeated course	Yes	
Pearl	College athlete, raised in urban rea	Repeated course	Yes	Yes
Coral	First peer mentor of program ten years ago, mid-career change, married with children	Repeated course	Yes	
Ruby	Mid-life career change, non-traditional student	In first course experience	Yes	Yes

## SERVICE-LEARNING IN CSD

### **Participant Backgrounds**

Paper analysis and interviews revealed much about the backgrounds of the participants. Eighteen of the papers shared information about the student's life prior to the course. Nine of the papers volunteered a background in ASD ranging from textbook knowledge to caregiver roles. Five shared that they had little to no knowledge of ASD. Two students shared that they had different views of ASD prior to the course. For example, Lily wrote,

Although I had explored the topic of Neurodiversity throughout my undergraduate experience and worked to spread awareness for the value of personal differences throughout my time as a Resident Assistant in the Social Justice Quality Circle (SJQC) with UM Housing, I do not believe I fully understood the impact on daily life and interpersonal interactions that ASD has on an individual.

Six of the papers demonstrated interest in ASD coming into the course. Four of the students shared that they had a relative with ASD and one expressed uncertainty with their future career path. Shanna shared her interest and uncertainty when she wrote "I always knew that I wanted to be involved with people experiencing autism or other disabilities, but I wasn't sure how I could."

Nine of the interviewees were Communication Sciences and Disorders (CSD) majors while one was an Integrated Physiology and Athletic Training (IPAT) as a pre-physical therapy student. Of the ten interviews, eight students had never taken a service-learning course prior to CSD 396, while two people took a service-learning course concurrently with CSD 396. When asked, nine of the interviewees had some experience with ASD prior to the course, ranging from academic to past peer mentoring experience, and experiences ranging from acquaintances to

## SERVICE-LEARNING IN CSD

family members with autism. When asked about experience with adults with ASD, six interviewees had none.

### **Deep Learning**

The papers and interviews revealed reflection on CSD 396 in relation to teaching and learning. Students shared about the CSD 396 course and its structure, learning by watching the Temple Grandin Movie, the instructors, classmate contributions, and reasons for repeating the course.

### ***The CSD 396 Course***

Thirty-six papers referenced the didactic service-learning course CSD 396 in their reflections. Three papers reported that this was their first service-learning course. Ten papers shared that they were excited for the course and upon completion five people recommended the course and three wished they could repeat it. Ivy wrote:

I absolutely 100% would recommend this class to anybody, CSD student or not, as it allows you to get out of your comfort zone, get involved with your community, and become more aware of autism and the people with autism in our campus community, and really community as a whole in general.

Despite 8 papers reflecting not knowing what to expect, 21 demonstrated that it was that the course was transformative like Amy who wrote “I believe these two credits were incredibly valuable to my education at the University of Montana, and the hands-on service-learning aspect of the course assisted in contextualizing the content covered throughout the semester and throughout my undergraduate education.”

Seven of the papers thought that students outside the CSD department would benefit from the course while two thought it should be mandatory for CSD majors. Hazel reported, “Not only

## SERVICE-LEARNING IN CSD

is this class helpful for speech language pathologists, but it could also benefit psychologists, occupational therapists, nurses, and many other healthcare providers.” Students took the course to further their knowledge (2), skills (1) and help determine their future profession (1). Aster told the story of “Last spring during registration I was talking with Professor Fitz-Gale about this dilemma, and she suggested I take the MOSSAIC course to help me determine what I wanted to do.”

### *Course Structure*

Thirty of the papers commented on the course structure. Eleven felt favorable about the “hands on learning” or the service part of the learning, such as Ivy who shared:

I learned so much just by doing and getting hands-on interactions with my mentees, and I found that taking this class and doing the whole MOSSAIC experience helped me and gave me an insight for my future career in a way that I hadn’t gotten to experience yet thus far in my education.

Nine valued the discussion-based learning. Sage said “... I felt that this class broke down the wall between instructor and student, cultivating genuine classroom discussions and encouraging transparency about the emotional and psychological struggles we may face as interventionists.” Willow wrote “I think that as classmates we were able to have really valuable discussions that really benefited the class, and gave different points of views.”

Seven papers shared appreciation for the experience. Rose stated that “Knowing how to communicate well with people is so important and this class was able to give me that experience and understanding to help me in my career.” Four were pleased with the opportunities, two were excited for mentoring, and two valued the opportunity to build relationships. Five of the students liked the small class size, like Martina who shared, “I feel that in small classes like this one, it

## SERVICE-LEARNING IN CSD

really gives students an opportunity to build relationships with the ones around them, which is something that I strongly value.”

Students also reportedly liked the problem-solving activities. Clover wrote:

I really enjoyed the last few class periods in which we discussed topics like rural disparities, social determinants of health, and cultural competency because we worked as a team to discuss and problem solve areas of inequality in the public health system.

Three of the papers showed that the authors liked that course was not driven by textbooks. “Throughout this semester, Professor Closson provided us with knowledge I will carry with me throughout my career, and I can guarantee I will remember this better than any readings out of a textbook” wrote Rebecca.

Four papers referred to the “laid back” learning environment. One student liked being able to request topics. Viola shared:

Typically, I am a very structured individual, and at the beginning of the semester, the professors talked to the students in class and notified us that this was going to be a less structured course, and there was going to be a lot of flexibility within the activities and assignments that were allotted within each class. Initially, this was something that worried me, but as the semester went on, I realized that there was no need to worry and that this course was something that I really enjoyed.

Four of the papers reported that they liked the topics while three liked learning through the documentaries. Rebecca wrote:

Watching the Aging Out documentary and Temple Grandin, taught me something beyond any textbook or PowerPoint could teach. They provided real-world applications of different evidence based practice strategies as well as the struggles faced with having

## SERVICE-LEARNING IN CSD

autism. Seeing how this affects real people in the real world is a completely different way of learning than just out of a textbook. Seeing the lives of real families was effective.

### *Temple Grandin Movie*

Temple Grandin (2010), the movie, is the first course activity for students taking the class for the first time. At critical points of the movie, the instructor paused and offered profession commentary as a teaching tool. Thirteen of the papers referenced the movie, 11 of them indicating it was a favorable experience and three of those felt it was impactful. Aster commented that “Being able to watch made me appreciate the impact that I could have as an SLP on peoples lives.”

Seven of the papers referenced learning about ASD from the movie while five shared that they developed understanding of the challenges people with ASD experience. Four of the students identified the commentary as beneficial. Two of the students mentioned reflecting on the movie at times while two shared the significance of the quote “different not less.” Rose explained:

Watching Temple Grandin was another stand out during the semester. I think it was a really good way to get an introduction to ASD that isn't just reading out of a textbook. Her story was phenomenal and it brought so much new insight into ASD and what challenges people with ASD face. It also showed how people with ASD aren't "less" than anyone else but just different. I remember that quote from the movie and it really stuck with me.

### *Instructors*

Eleven papers reflected favorably on the instructor(s). Holly says, “Thank you, Professor Closson and Professor Fitz Gale, for creating interactive opportunities and cultivating a learning



## SERVICE-LEARNING IN CSD

environment where open and honest discussions are encouraged and students are challenged to problem solve and critical think.” Four of the papers referenced a safe learning environment and additionally one referenced a welcome environment for MOSSAIC participants created by the instructor. Three referenced the guidance provided by the instructor(s) while two acknowledged the good work of the instructor(s). The instructors’ teaching was described as providing real world examples (1), interactive learning opportunities (1), allowed “discussions to unfold naturally” (Dahlia), and enjoyable lectures (2). Holly was “looking forward to continuing to learn from” the instructors while Sage shared this:

Professor Closson... has created remarkable environments within the UM community. It has become evident that the individuals that [she] interacts with as clients, cohorts, or students have benefited greatly by her passion that perpetuates her celebration and understanding of neurodiversity.

### *Classmate Course Enrichment*

Papers referenced their CSD 396 classmates enriching the course in their reflections. Of the 15, 8 students shared their appreciation of their classmate’s contributions, while 6 made reference to developing relationships with classmates. Four of the papers reflected appreciation that their classmates had similar interests in special populations while three alluded to having fun with their classmates. Three of the students liked the diversity of the students specifically referencing experience, geographical upbringing, and including other majors. Heather brought this into perspective by sharing:

From Haley working with students with ASD on her dorm floor and being able to bring that to the table, to having students outside our major in our class, as well as having Sola and Ashley, two past MOSSIAC students, with other knowledge to bring to us, it helped

## SERVICE-LEARNING IN CSD

bring new perspectives to our everyday discussions which I really valued and got much more out of the class than I think I would've otherwise.

### *Repeating the CSD 396 Course*

Nine of the papers demonstrated that their authors plan to repeat the class. Dahlia wrote “I am so excited to continue my education and eventually a career in the field, and cannot wait to participate in MOSSAIC next semester.”

Of the ten interviewees, seven were people that chose to repeat the course while one elected to take it once and two were currently in the course. CSD 396 can be taken up to three times. When asked why they chose to repeat the course, five identified learning as a contributor, four enjoyed the mentorship, three reported that they enjoyed the course, and three referenced personal growth. Two mentions were made for providing the peer consistency, being interested in the work, making a difference, and hands on experience. Coral shared:

...I think just my interest in the therapy and um you know those types of components just being able to increase my skill level and just the learning pieces. But the other piece that I think really contributed was just my connection to my peer and the enjoyment I got out of it, um not only for my specific peer that I was working with but for when we started having other peers just that whole group dynamic and that piece really contributed to wanting to continue to proceed and to sort of be a stable consistent person in the peer's life and journey.

In summary, the papers and interviews revealed that the CSD 396 course was transformative. Students felt others, in and out of the CSD department should take this course. Students appreciated the hands-on learning, discussion-based learning, and learning through the documentaries such as Temple Grandin (2010). Students appreciated the experience they

## SERVICE-LEARNING IN CSD

obtained, small class size, and problem-solving activities. The climate of the classroom, being laid-back, having the ability to choose topics, and not being driven by textbooks, appealed to students. The instructors were viewed as favorable and supportive, and the classmates enriched the experience. Students shared that they chose to repeat the elective because they enjoyed the course, the learning, the mentor experience, and experiencing personal growth. Deep learning was a robust theme in the data.

### **Relationships and Inclusion**

Thoughts about relationships and inclusion were shared through the reflection papers and interviews. Students commented on the MOSSAIC program itself, time spent with mentees including the social events, friends with disabilities, and relationships with mentees.

### ***MOSSAIC Program***

Eighteen papers referenced the MOSSAIC program supported by the service part of the CSD 396 course. Nine of the writers shared that it is a good program, while three thought that the participants appreciated the program. Ivy wrote “This class and program is such a great thing, and I believe that it truly changes and makes an impact upon the participants, the mentors, and the campus as a whole.” Eleven papers reflected on peer mentoring. Alyssa wrote:

I hope other[s] feel the same way as I do, so that we are able to all work together on the education that is needed to show people that don't know the statistics and fact of how well this “buddy system”, if you will, works.

Aster shared “Being a mentor was not a new experience for me, but getting to mentor someone with autism who is in college was one of the best mentor experiences I have had.”

Three students were champions for MOSSAIC's growth, with Bay sharing “I strongly believe in MOSSAIC and I know that with further education and support, it will continue to grow and

## SERVICE-LEARNING IN CSD

spread to other universities.” Three others saw the program as an opportunity to develop relationships. Sage expressed “I would not have had the opportunity to meet or establish relationships with many of the individuals I did if it wasn’t for MOSSAIC.”

### *Relationships with Mentees*

When asked about their relationship with their mentee(s), nine of the ten interviewees felt positive about the experience while one disclosed that she struggled. When asked if their relationship changed over the semester, all eight interviewees that had completed a full semester reported change. Seven of those people shared that it became more comfortable. Jasper experienced challenge with her mentee in that she was displeased with Jasper’s decisions as the student director. However, Jasper reported that she remembered “...my mentee telling me at the end of like the last time we were meeting that they were really glad that I listened and that they’ve never had someone who actually sat there and just listen to them before.” Jasper considered this a valuable experience.

Beryl shared that she saw progress in her mentee. He was hugging everyone he met regardless of their relationship. Beryl was happy to report that by the end of the semester he was more selective about who he hugged. His interactions with others had changed. Beryl also reported that:

He felt more comfortable with me and you know, like we at one time would was talking about dating and how he wanted to start dating and it just felt to me that was like a very like genuine like that's a conversation, you would have with a friend.

### *Friends with Disabilities*

Nine of the ten interviewees had friends with disabilities prior to their CSD 396 experience. People shared that their friends experienced ADHD, dyslexia, OCD, sensory

## SERVICE-LEARNING IN CSD

dysfunction, neurodiversity, learning disabilities, Down syndrome, genetic disorders, autism, Asperger syndrome, and physical disabilities and limitations. One mentor disclosed that they themselves had a physical disability. All of eight interviewees that had completed at least one semester of CSD 396 reported that they had friends with disabilities after the CSD 396 experience while seven of the eight reported having friends from the MOSSAIC program. Four of the seven reported using social media such as Facebook or Instagram to stay connected with that person. Jade, not currently a friend on social media with mentees, reported that if she received a friend request from a mentee, she would accept it. Opal said:

Kim and I followed each other on Instagram. We kind of kept in contact that way. She's so cute. I always want to say hi to the participants that I know of, except with masks they probably don't know what I look like underneath. But for sure, like Clay too. If I see him I'll say hi and he'll say hi back and I'd say he was probably a friend. He's so sweet.

Relationship building was mentioned by 18 papers. Fourteen of the authors used the word “friend” to describe their relationship, while three predicted their relationships would continue beyond the semester. Three mentioned that their comfort level had changed. Viola wrote, “This opportunity really allowed me to see how autism affects individuals first hand, and gave me the ability to build relationships and friendships with the ones that I had the pleasure working with.” From Heather: “My mentee and I will definitely be staying friends aside of MOSSAIC which I am really grateful for the program for letting me meet such a great person.”

### *Time with Mentees*

Thirty-four of the papers referred to time with mentees. Seventeen of those papers shared that they learned from their mentee. Leilani wrote, “Ariana in particular was good about giving

## SERVICE-LEARNING IN CSD

me information.” Thirteen writers reported enjoying their mentee. Ivy talked about her time with Kim.

It was so fun just letting loose with her, and really getting to know her and what she’s interested in, and she was such a joy to be around! I have no doubt that we will stay in contact even after this semester, and she’s even wanting to join my inner-tube water polo team!!

Thirteen people learned about the needs of their mentee and people with autism. Rosa wrote:

...some people might just need someone to advocate for them and to help them realize their worth, because all of us are special and we deserve to know that and deserve to be surrounded by people to remind us of that.

Others learned about the challenges their mentees face. Heather shared:

Not only did I learn so much more about ASD from interacting with him, and talking about their struggles in school and socially, but being able to make a difference in their life and help them with simple things like talking through life struggles, studying for tests, etc., made a difference...

Fourteen papers reported that they helped their mentee. Camilla wrote “I helped a student find a group where she can be herself” and Iris shared “I feel strongly about the impact I made in her life, and appreciate her opening up to me.” Seven reported seeing progress. Willow witnessed “I think there was so much progress and relationship building.”

Thirteen papers talked about how they spent their time with their mentee. Eight talked and hung out, five did homework, three did activities like crafts or games, and three got food or

## SERVICE-LEARNING IN CSD

beverages together. Bay wrote, “Throughout the semester I was able to strengthen my bond with Oria over many, and I mean many chai teas.” Heather shared:

We often would paint nails, cook, and watch movies (all three of which are some of my favorite activities to do), and we found out very early on that we are quite similar and enjoy the same pastime activities, as well as movies (girl’s got a killer taste in movies, and we both have a weak spot for the rom-coms!)

### *Social Events*

Ten papers mentioned the social events that are part of the MOSSAIC program. Five of the authors enjoyed them, two expressed excitement for the socials, and two reported that they went well. Cassia: “The Tuesday Night Socials felt genuinely wholesome and I am so happy I was included in building something so refreshing.” Mentors commented on specific themes and activities of the evenings that included: cooking, game day, hobby night, healthy communication night, trivia night, interview night, puppy party, Dungeons and Dragons, hiking, corn hole, icebreakers, baking, coloring, and movies. Four papers reported that the events were fun.

Four of the papers mentioned conversations during the events, such as Cassia: “Our topics ranged anywhere from classes to where we grew up to our favorite movies and songs.” Three papers mentioned the friendship walk. Basil said it best with “...each Tuesday night meeting included a walk, which is so great for conversation.” Mentors also noticed that people were interested in each other. Chloe reflected, “The beginning and end of the Tuesday meeting allowed for casual conversation, and people learned about each other.” Two papers talked about progress. Leilani shared a story of progress she observed:

...one Tuesday night I had a really good conversation with Clay, who is a little on the quieter side. The next Tuesday I got to class early, and he came in five minutes later and

## SERVICE-LEARNING IN CSD

sat right next to me. We picked up our conversation from last week right where we left it.

This was really special to me because he was asking me questions and did not let the conversation die!

In summary the students felt that MOSSAIC was a good program and peer mentoring was a notable experience and they would like to see the program grow. Most students reported a positive relationship with their mentees and saw change in their relationship over the semester and progress on behalf of the mentee. Students reported developing friendships with their mentees and plans for them to continue after the semester. Students learned from their mentees, particularly about the challenges they experience. They felt they helped their mentees. The students enjoyed the social events and their conversations with the mentees during them.

### **Professional and Personal Growth**

Students were able to see how they grew as pre-professionals with application for their future careers. Through learning including topics specific to autism, special opportunities, and special projects, students identified that they had skill development and personal development and were able to give consideration to their futures, including the choice to pursue required graduate school, professional, and volunteer opportunities.

### ***Learning***

Most of the papers mentioned their learning outcomes of the course. Eighteen identified their overall learning or as Iris puts it “It has also been the most I’ve learned (by a long shot) over the past four years.” Nineteen identified that they developed their understanding of autism and neurodiversity, while six shared that “I learned from going to class and participating, but also, I learned from interacting and helping others” (Camilla). Nine developed their understanding of challenges and barriers people with ASD experience in their lives, including



## SERVICE-LEARNING IN CSD

two references to sensory challenges; Rebecca wrote “I learned how a lot of the participants struggle in their daily lives, and how much they have had to overcome since a young age in schools where they didn’t have needed accommodations.” Thirteen papers reflected that students were able to add intervention strategies and tools to their toolbox. Gabriela reported, “...a holistic approach is needed for our clients to receive the best possible care.”

The papers listed specific learning topics including evidence-based-practices (8), diversity of the disorder (8), advocacy (6), interprofessional education/collaboration/practice (6), behavior (4), rural disparities (4), social determinants of health (4), inclusion and safe spaces (3), resources for ASD (3), healthcare (2), cultural competency (1), diagnosis (1), ablism (1), feeding therapy (1), and trauma (1). Nine students referenced neurodiversity affirmation while four specifically mentioned meeting potential. Iris revealed that “This service-learning elective educated me on neurodiverse affirmative practices such as strength based intervention and the positive impact this has on the neurodiverse community.”

**Knowledge of Autism.** When asked to characterize their knowledge of autism prior to the CSD 396 experience, three of the ten interviewees reported a decent or good amount of knowledge, two reported an intermediate knowledge, one reported stereotypical knowledge described as what the general population has about autism, and four reported none to very little. When asked what they learned, all interviewees had reported learning something, even those halfway through their first CSD 396 experience. Six of the ten interviewees reported learning about how diverse the autism spectrum is, three referenced learning about supports and accommodations, two discussed person-first language versus when people identify as autistic, two mentioned the holistic person, two learned about sensory disfunction or differences, and two learned about building relationships with people with ASD. Items mentioned just once included:

## SERVICE-LEARNING IN CSD

is it is ok to talk about special interests, focusing on strengths, communication with people with ASD, treatment provision, making safe spaces, learning about the brain of ASD, science behind ASD, personal side of ASD, challenges with figurative language people with ASD can experience, equity, diagnostic process, mistreatment of people with ASD, disability services, autism awareness, what neurodiverse people want from neurotypical people, boundaries, intelligence of people with ASD, social barriers, the disorder in general, who they are as individuals, all people are different, celebrating neurodiversity, things neurodiverse minds can offer society, and secondary transition to college. Jasper shared:

I've learned about how broad the spectrum is. I've learned a lot about what people with autism want and need from the neurotypical population or from other people who don't have autism. I've learned about how important it is to be a friend. I've learned what it means to be an accommodating friend and a true understanding friend and what it means to go the extra mile to educate myself on someone's boundaries so that I can be a better friend and not just saying like oh that doesn't work for me or that's not what I'm used to and kind of not going that extra step. I've learned how amazingly smart all these individuals are in all their own way and not in the stereotypical genius way... I've learned more about the holistic person... You know people with autism want friends and friendships and social interaction even if they don't always show it or even if their brains don't let them. People with autism want relationships and they want fun activities, and they want things that are sometimes really scary for them, and I think that that is really opened my eyes to what I can do to be better to help those things not be as scary or to help support them in doing those things that are really hard.

## SERVICE-LEARNING IN CSD

**Special Opportunities.** Fifteen papers referenced taking advantage of special opportunities that presented themselves through the instructor, course, or program. These learning opportunities included supporting graduate student clinician in our on-campus clinic (7), presenting information on ASD to campus medical and counseling providers (2), presenting at a campus diversity conference (1), building fact sheets for the MOSSAIC webpage (3), participating in a fundraiser for a local agency that serves ASD (1), being the student facilitator for the first UM pediatric interprofessional seminar (1), being the recipient of the Newman Fellowship through Campus Compact (1) and being the student director of MOSSAIC (1). Cassia explained "...I am thankful for the opportunity to contribute to the MOSSAIC fact sheets as I learned so much through my research on ASD and sexuality!" Amy explained what she did in her clinical experience "During my time in the clinic, we worked on assisting Axton with sentence expansion, spontaneous questioning/inquiring, and direction following."

### *Skill Development*

Twenty of the student papers reported growth in skill development through the service-learning experience. Eight identified that they developed their communication skills. Shanna wrote "Overall, I think service-learning provided so many ways to learn and communicate with people that are different." Four papers commented on interaction skills. Viola shared, "I am able to identify if someone may be an individual with autism, and how to interact with them if this is the case."

Three papers reported developing skills in educating others while four papers showed that students reportedly incorporated new skills in their own work. One person used evidenced-based practice. Ginger explained, "I used social narratives to provide examples and scenarios of situations to help this person understand someone else's perspectives and feelings."

## SERVICE-LEARNING IN CSD

Two papers reported developing conflict resolution skills, two papers showed that the writers felt they could better navigate behavior while two papers demonstrated that students felt that they understood what motivated behavior better. Amy wrote:

For instance, I was able to put into context the purpose behind Axton's repeated phrase, "I don't know." After reflection, I was able to determine that this behavior served as a method of avoidance, as we typically stopped asking him questions or to repeat his sentences after he said this, thus reinforcing his behavior.

Three papers commented on intentionally creating more inclusive environments, while one mentioned providing accommodations. Ginger shared "The content I learned in the course helped me to organize more accommodating and inclusive events for our participants, and it gave me the skills necessary to handle any conflicts I confronted." Viola reported better understanding of sensory disabilities, and wrote, "Understanding what triggers some of these individuals and having background knowledge and understanding about the nature of the disorder has been really beneficial throughout these moments in life."

Patience was also identified as a skill by three papers and listening by two. Ivy wrote, "I learned the importance of turn taking, and really listening to what the mentees had to say, meant a lot to them." Two learned how to become more comfortable with silence between people and one learned about redirecting her mentee when she got stuck. Ginger shared that "Learning redirecting skills greatly improved my confidence in my ability to be a good mentor because I knew how to handle situations that were previously overwhelming."

Interviewees were asked about the skills they developed through participating in the service-learning experience. Five shared that they developed their communication skills, while four learned how to implement evidence-based practices, and three developed their ability to

## SERVICE-LEARNING IN CSD

make accommodations. Two mentions were for developing their skills in supporting executive functioning skills and advocacy skills. Single mentions include interacting with people without knowing if they have a disability, patience, working without deadlines, terminology, awareness, identifying ASD, being more sensitive, trauma informed care, and leadership skills. Emerald shared that she developed:

...listening and getting comfortable with silence. Um, patience for sure. Um, probably how to um, like remind or to like check-in prior to a meeting. I don't know what that would be called but like just learning to like, it's very natural to text like 20 minutes before and be like hey we're still meeting at biz buzz today right or wherever we were going to meet does that make sense? ... communication within groups too, because we, I did work with partners on my projects and so just learning how to I think that was probably one of the first like there's no deadline. No pressure assignments, and so, knowing how to interact with here's, to create a larger project without deadlines is a beneficial skill I learned.

### *Personal Development*

Thirty-one papers alluded to personal development. Seven identified themselves as experiencing growth in general. Basil anticipated her growth... "From the very first week when we read that article from the Australian university, peer mentoring has extreme benefits for not only the individuals with Autism but for their peers." Five reported that they grew from their relationship with their mentee. Rose shared "I know that technically we were considered mentors but I honestly feel like they helped me more than I did them."

Six of the papers found that people experienced joy in providing service. "This program has brought me joy in the craziest of times" wrote Veronica, while Daphne shared about an

## SERVICE-LEARNING IN CSD

online social event where people shared their hobbies: “It is really rare to be in an environment where everyone is genuinely open and interested in each other. This feeling made me smile the whole Zoom session.”

Two papers identified that they engaged in self-reflection. Rosa reported “This semester in MOSSAIC has allowed me to reflect upon myself as well as the profession I am wanting to go into.” Three papers showed that people also learned about themselves. “It always surprises me by how much I learn about myself through this class” shared Yolanda. Two papers indicated becoming aware of biases, like Saffron who shared “Though textbooks phrase the description of autism in a fairly neutral manner, I unconsciously create negative impression of the disorder which can reflect onto the individual.” One person decreased their biases. Three papers described becoming more aware of the environment, one person became more aware of others. Viola sums it up with “I also am more aware of my surroundings, and the individuals with whom I am interacting with.”

Five papers mentioned advocacy. Amy explained:

This experience, therefore, also served to support my understanding of the value and importance of interprofessional development and collaboration when advocating for individuals both on-campus and within the community and increased my ability to engage and advocate as a citizen and peer-mentor!

Four papers revealed that people saw themselves as bettered by the course and related experiences. Three people reported having more of an open mind, three people identified being more inclusive, and one person more understanding. Holly commented “...that education and understanding leads to acceptance and inclusion.”

## SERVICE-LEARNING IN CSD

Growth in personal qualities was described by many, including patience (6), flexibility (2), vulnerability (3), empathy (5), acceptance (2), confidence (2), persistence (1), kindness (1), and being in the moment (1). Cassia wrote:

This semester, MOSSAIC has reinforced the importance of presence when working with others. Now more than ever, I understand that genuinely being in the moment with another human being is truly the only way to a successful interaction, such as in mentorship or therapy!

Four papers reported that the course challenged their thinking. Shanna demonstrated this when she wrote “Instead of making rash judgements based on a person’s behavior or how they communicated with me, I ask myself, “what if?” What if they have some type of communication difference? What if the light is just too bright?” Three papers reported that the course changed their perspectives. Heather wrote:

From being a peer mentor, to watching the movie Temple Grandin, to learning more about undereducation in fields such as paramedics, I have been able to widen my scope of how I look at my environment, and those in it.

One paper reflected wanting to do things differently. Viola made the point that “This class really gave me the opportunity to reflect on myself, and many of the experiences that I have been through in the past, and how I would have changed those interactions with the knowledge that I have now.”

### *Future*

Thirty-seven papers mentioned the future with regard to the profession, choosing to pursue the profession, and volunteer work.

## SERVICE-LEARNING IN CSD

**Professional.** Seventeen of the papers reflected that knowledge and skills gained from the service-learning course would support them professionally. Amy wrote, “Overall, my time participating in the MOSSAIC course this semester supported my understanding of ASD, strengthened my foundations as a future clinician and researcher, and inspired my motivation to create needed change on campus and within my community.” Likewise, Raisa wrote: “This class has given me lifelong tools that I will be able to use in my future as an audiologist, as a parent, and as a human being.”

Seven of the papers reported being interested in working with ASD in the future while three are now interested in working with adults. Aster summed it up this way:

Taking this course helped me to decide that I want to be an SLP, I want to work with clients of all ages that have autism, I want to help all of them reach their full potential and have the best possible lives.

Five of the papers reflected a plan to engage in advocacy for ASD. Ginger: “Working directly with students made learning personal, and it’s because of this I’ve committed to further educating myself to be the advocate and friend these students deserve.” Four of the students reported a desire to educate others and two wanted to provide telehealth in response to rural disparity. Rosemary: “When I become an SLP I will allow telehealth so that people in rural communities will have equal opportunity to seek treatment in speech therapy.”

**Pursuing the Profession.** “This was the moment I figured out I chose the right career path.” (Veronica). Her comment was representative of three papers that validated their career choice through the experience. Interviewees were asked if the service-learning experience influenced their decision to go to graduate school and become a speech-language pathologist, or in Garnet’s case, a physical therapist. All reported that this course influenced their plan to pursue



## SERVICE-LEARNING IN CSD

their profession. Five reported that is validated their choice, two found new interest areas, like Garnet who is now interested in working with pediatrics. Two reported that the experience made up their mind to apply to graduate school. Jade shared about the SLP profession that she "...was probably going to lean out of it if I didn't take this class." Pearl, who also decided to pursue graduate school as a result of the experience shared "I think just I really liked MOSSAIC because, being a peer mentor was the first time that I could see myself in the occupation."

**Volunteer Work.** When asked if they would volunteer in the future as a result of the experience, all interviewees said "yes." When asked "in what capacity," six indicated that they wanted to work with people with special needs, four wanted to work with children, and three mentioned specific programs, all of which address the needs of special populations. Jasper had some very specific ideas about her future contributions:

A lot of things that come to mind are things that I would like to do are working with the school systems because I think that our schools could do a much better job of more inclusion and not just putting special education in a certain hallway or a certain few classrooms... recently... my high school had a shooting and it was not in the high school, but it was in the parking lot outside. Two kids were shot. One was killed... But Stella [Jasper's cousin with autism III] was walking out of the school when that happened... Stella couldn't hide under a desk and be quiet and they can't shush Stella or they can't push Stella or they can't try to move Stella you know with all of her sensory needs and that would be very scary. And so I've kind of had some thoughts about talking to the... [local] School District of implementing sensory kits with all of our school, our school officers because we usually have about four officers on our high school campus at all time, I believe. Um a security guards creating posters of what you can do to be sensory

## SERVICE-LEARNING IN CSD

friendly in the state of an emergency. That has been something that's been on my mind that occurred last week. It's been very challenging and then also kind of trying to figure out what we can do first in the summer for individuals in special ED program that don't have social interaction over the summer because it's so hard.

In summary students learned much including about autism and neurodiversity. They learned about challenges people with ASD experience, such as sensory processing challenges, and intervention strategies, such as evidence-based practices to support them. Some other areas of learning included rural disparity, social determinants of health, advocacy and inclusion, cultural competency, among others. Special opportunities and special projects enhanced these experiences.

Students developed their skills, particularly in communication, educating other, evidence-based practice, conflict resolution skills, creating inclusive environments, patience, and supporting executive functioning skills. Person development came from relationships with their mentees and discovering joy in service. Self-reflection was part of this process and biases came to light. Students reported gaining an open mind and becoming more inclusive. Challenges in thinking resulted in flexibility, vulnerability, and acceptance among other areas.

When looking into the future, students felt that the experience will support them as professionals. Some will work with people of all ages with ASD as a result of the experience, some will engage in advocacy, while others will become educators on the topic of autism. Students felt that this experience validated their career choice, while some credit the course with helping them to decide to pursue graduate studies. Students plan to volunteer in the future particularly with vulnerable populations.

## SERVICE-LEARNING IN CSD

### **Development of Advocacy and Increased Access**

CSD 396 students demonstrated interest in advocacy and became concerned about access to programs and community understanding for people that experience autism. Students also embraced the quote “different not less” influencing their view of peers with ASD.

#### *Different Not Less*

Many students developed their advocacy identity and it was predicated by the realization of equity between people with autism and those deemed neurotypical. This was demonstrated by a significant number of people embracing the “different not less” way of thinking. Nine papers were worthy of the quote from the Temple Grandin movie “different not less” or some variation of it. This was used when Temple’s mother was advocating for her education. Daphne explained:

The line that really stuck with me was Mrs. Grandin’s quote “different not less”. I love this quote because it can apply to everyone in this world, not just the autism community. I can think of many times where I had been called out for being different by my peers. I always interperated being called different as bad thing, when in reality there is no negative connotation to this word. This movie shows that yes Temple might be different, but that difference is the reason why so many cattle ranches are successful because they use Temple’s technology. In general, this quote makes people be more inclusive and accepting of other humans around them, which I just love.

#### *Identified Needs of the Community*

In keeping with embracing equality hence advocating for change, twenty-nine papers reported identified needs of the community. Fourteen reported the need for education on ASD in our community. Viola: “I feel that educating the public and allowing people to have access to

## SERVICE-LEARNING IN CSD

this information is extremely critical for individuals with Autism.” Seven papers mentioned the need to address rural disparity and three see telehealth as part of that solution. Rosa wrote:

I am very hopeful that with the use of telehealth, individuals will gain more access to therapy services and that the more we make people aware of how rural Montana is, the more SLP’s we will be able to recruit in order to spread around and assist those in need.

Five people identified needs on campus for autism education and training. Two people identified secondary transition needs while four identified a need for university programs specific to people with ASD. Alyssa wrote:

Even though this class was a lot of fun and inspiring events that happened all through the semester I feel that we need to work hard to see programs such as this implemented to every university and school in our country!

Leilani commented: “The neurodiverse mind can offer so much to colleges.”

Three students saw the need to address healthcare and six saw the need to educate first responders. In class, we reviewed a manual from Emergency Medical Services (EMS) that included one paragraph of biased language about autism. Yolanda commented “It was really disheartening to see that in the EMS protocol book.” This sparked action in our learning community and Clover wrote:

I was very impressed and motivated by our class discussion on creating kits for firefighters and EMS. This is something that I find incredibly important and I’d love to put some together for the community I live in after graduate school. Emergency situations are stressful and potentially traumatic for so many people, but especially for people with disabilities. If we could provide first responders with the education and resources to make this a safer, less distressing experience, that would be so beneficial.

## SERVICE-LEARNING IN CSD

**Special Projects.** The special projects generally centered around advocacy for individuals with autism and creating access to aspects of our community that can have barriers. Ten papers of the students that were repeating the course mentioned their special projects. Education for first responders (5), sensory kits for first responders (1), fire department education and video model (3), lanyard safety project (3), and resident assistant training (2) were projects determined and executed by the students in response to the identified community needs. Martina explained that she was:

Creating the powerpoint with Aurora and combining our ideas in a collaborated and structured way in hopes of allowing first responders to be aware and educated as to what autism looks like, and specific coping mechanisms that may be beneficial on the scene of an accident.

Lily also wrote “I was encouraged by the level of creativity implemented in the training for firefighters within Missoula, and the number of ideas generated in class discussion to assist first responder’s engagement with individuals with Autism Spectrum Disorder.”

### *Advocacy*

The word advocacy, or a variation, was used in 20 of the 40 reflection papers. This pivotal quality seemed to develop in the pre-service professionals and was part of their reflections. At the risk of redundancy, the following demonstrates the recurring theme of advocacy. Six papers reported learning about advocacy, while there were three mentions of providing trainings for medical providers, counselors, and at a diversity conference on campus. Five papers mentioned advocacy as part of their personal development and three discuss creating inclusive environments as part of their skill development. When looking into their professional futures, five papers reflected plans to become an advocate.

## SERVICE-LEARNING IN CSD

Three papers reflected the need for advocacy in our community, three saw the need for supports, and three saw inclusion needs. Interviews identified advocacy as a skill that was developed by 20% of the interviewees.

In summary students identified needs of the community in areas such as education on campus and of first responders. Students identified transition needs to support people with ASD. Advocacy was mentioned in many areas and identified as a need and a future plan for many students. “Different not less” resonated with students changing their perspective on people with ASD leading to inclusion and advocacy mindsets.

### **Closing**

Thirteen of student papers mentioned gratitude, as captured in Jasmine’s comments: “I am very thankful for every opportunity this class has brought me, the people I have met, and how much better of an SLP I will be one day because of it!” and Violet: “I am so thankful to have an opportunity to take this class and gain more understanding and insight not only into myself but those with Autism.” Interviewees provided additional reflections upon conclusion of their conversation with me.

### ***Additional Thoughts***

When interviewees were asked to share any additional thoughts, Amber reminded us that “it’s really important to know the people and not feel like you know what they can and can’t do. Um and just treat them as regular friends.” Five people reflected favorably on the service-learning course. Coral shared:

It was just I mean it truly was an amazing experience. It allowed me to sort of, it allowed me to have opportunities with so many different things that I had never really um thought from the peer mentor thing I was able to do some presentations with you, which was just

## SERVICE-LEARNING IN CSD

lovely. And it allowed me to grow because I'm not good at speaking in front of people etc., so it allowed me those opportunities to be able to talk about something I was familiar with and passionate about in sort of that professional setting. It also allowed me because I had gotten very interested in executive functioning, it allowed me to do in service and one of the high schools where I was um, you know, breaking down executive functioning just for you know typical kids in a classroom and sort of taking the pieces and the skills that were helpful to my peer but also to just general population for executive functioning, um and so it allowed me to be able to do that little in service for it. But then outside of just those pieces that I think where, it was just really cool to watch this person, you know, that was struggling academically and really watch him find his stride. And figure out all his pieces and to be able to go and graduate and now he's a professional in the community and is doing what he loves. I mean it was like that piece is just really cool to know that, you know, it was all him. He did it all but to know that we have a tiny small piece of that in his success and it's just really cool and just to see on social media how successful he still is today that he is giving back to community, you know, his community too, in terms of all those pieces and definitely the type of person that is always willing to volunteer, and so I feel like it really paid it, you know paid it forward in terms of those pieces. So yeah it was just an awesome experience. It really did change my whole thought process and my confidence in being able to be an SLP and do those pieces 'cause prior to that I was nervous that I could actually do it, and you know, and then I realized that I could do it.

Two people shared that more people should take a course on neurodiversity. Opal characterized it by saying “one of the things I thought was cool about MOSSAIC and I really

## SERVICE-LEARNING IN CSD

appreciated, is that I was learning, but it didn't feel like I was learning.” Jade commented, “I think MOSSAIC is a great program.”



## **Chapter Five: Discussion**

Through deductive analysis of 40 open-ended reflection papers following participation in CSD 396 over 10 past semesters and inductive analysis of newly conducted interviews of ten past and current CSD 396 students, four overall themes emerged including 1) deep learning, 2) relationships and inclusion, 3) professional and personal growth, and 4) development of advocacy and increased access in our community.

The goal of this research was to 1) determine the perceptions, reflections, and outcomes of CSD undergraduate students who have participated in a service-learning peer mentoring experience for adults with ASD through the MOSSAIC Program, 2) determine if there are impacts of service-learning in the form of peer mentoring people with ASD with regard to understanding of ASD, 3) determine if service-learning in the form of peer mentoring people with ASD influence career choice and furthering one's education in CSD or a related field. These questions will be answered within the context of the predominant themes.

### **Deep Learning**

Results showed that the CSD 396 course was transformative. Students felt others, in and out of the CSD department should take this course. Students appreciated the hands-on learning, discussion-based learning, and learning through the documentaries such as Temple Grandin (2010). Students appreciated the experience they obtained, small class size, and problem-solving activities. The climate of the classroom, being laid-back, having the ability to choose topics, and not being driven by textbooks, appealed to students. The instructors were viewed as favorable and supportive, and the classmates enriched the experience. Students shared that they chose to repeat the elective because they enjoyed the course, the learning, the mentor experience, and the experience of personal growth.

## SERVICE-LEARNING IN CSD

This service-learning experience supports Kolb's (2015) experiential learning theory in that the concrete learning of the classroom was applied "hands on" through peer mentoring and characterized as transformative. While aligning with Dale's (1948) Cone of Experience, service learning providing the preferred "direct, purposeful experiences."

Of note, the research on instructional conversations (learning through discourse) demonstrates that this accepted and effective teaching method lends to problem-solving, listening, and speaking (Grifenhagen & Barnes, 2022, Howe, 2019). This impactful pedagogical approach aligns with the teaching styles associated with the CSD 396 course and was reported as favorable by the students. Rich and insightful (Raghu & Narash, 2018) describe using movies such as Temple Grandin (2010) as a teaching tool. This movie was a favorable learning experience for the students making the history of autism and college experiences easier to understand (Parker, 2009). Furthermore, this aligns with Celio et al. (2011) and Peters (2011) in that the pedagogy of service-learning is beneficial.

While this learning opportunity was viewed as favorable, students did not share thoughts on what they thought could enhance the didactic learning. Instructional conversations and learning through a docudrama were noted by students as positive learning supports, however, the classroom climate in service learning could be further explored.

With respect to the first research question, students came away with a transformative learning experience with an enhanced understanding of autism and the experiences of those with autism from a rich learning context.

### **Relationships and Inclusion**

Students felt that MOSSAIC was a good program and peer mentoring was a notable experience and they would like to see the program grow. Most students reported a positive

## SERVICE-LEARNING IN CSD

relationship with their mentees and developed friendships with them. Students learned from their mentees, particularly about the challenges they experience. They felt they helped their mentees.

Kaf et al. (2011) learned that service-learning with a special population such as the elderly developed positive attitudes toward that population. This supports the students having positive relationships and maintaining friendships post program. While there are poor perceptions of people with ASD on college campuses (Gillespie-Lynch et al., 2015) and a need to educate others (Huws & Jones, 2010), the CSD 396 service-learning experience seems to have had success in education in relation to developing positive regard for people with ASD.

Many of the students referenced their mentees as friends. This negates the idea of the power-balance of the mentor-mentee relationship. While skill development was a goal of the MOSSAIC program in its infancy, the program has morphed with the needs of the participants and opportunities for friendships has been pushed to the forefront. Going forward, I would like to remove the words mentor and mentee from the program and proceed with peer-to-peer language.

With respect to the first research question, people likely developed their perceptions of autism through this experience resulting in friendships that would not have occurred otherwise. With regard to the second question, students reported learning from the mentees, particularly contributing to understanding of the diversity of the disorder and the associated challenges that people with autism experience.

### **Professional and Personal Growth**

Students learned much including increased understanding of autism and neurodiversity. They learned about challenges people with ASD experience, such as sensory processing challenges, intervention strategies, such as evidence-based practices to support them, and other areas that impact people with ASD. Students experienced skill developments and personal

## SERVICE-LEARNING IN CSD

development derived from their relationships with their mentees, self-reflection, and didactic learning.

When looking into the future, students felt that the experience will support them as professionals. Some will work with people of all ages with ASD as a result of the experience, some will engage in advocacy, while others plan to become educators on the topic of autism.

Students felt that this experience validated their career choice, while some credit the course with helping them to decide to pursue graduate studies in speech-language pathology. Students plan to volunteer in the future particularly with vulnerable populations.

Students developed their knowledge of autism. Skills were developed (Peters, 2011) and personal growth was made (Celio et al., 2011; Otto & Dunens, 2021) aligning with what is found in the literature about service learning in CSD. Peters (2011) found that students that do service-learning are more likely to be civically engaged and this was reinforced by the students interviewed in this study committing to volunteering as a result of the CSD 396 experience.

Warchal and Ruiz (2004) learned that service influences career development through career exploration. Workforce development can be developed through service-learning (Mitchell & Rost-Bani, 2019) and evidently the CSD 396 experience did indeed inform students on their decision to go to required graduate school for the profession or at least validated that choice.

With regard to the first research question, students enhanced their learning, developed skills, and experienced personal growth as a result of the CSD 396 service-learning experience. When reflecting on question two, students increased their knowledge and understanding of autism contributing to their personal and professional growth. As for question three, the CSD 396 experience did inform professional choice, validating the option to attend required graduate

## SERVICE-LEARNING IN CSD

school for many and determining that the profession was a match for some therefore encouraging them to move forward with their required graduate studies.

### **Development of Advocacy and Increased Access**

Advocacy development is often a consequence of service-learning (Grapin et al. 2021, DeBonis, 2016, Moore, 2013). Students identified needs of the community in areas such as education on campus and of first responders. Students identified transition needs to support people with ASD. Advocacy was mentioned in many areas and identified as a need and future plan for many students. “Different not less” resonated with students changing their perspective on people with ASD leading to inclusion and advocacy on their behalf.

Gillespie-Lynch et al. (2015) identified that people with ASD were thought of as less than on campuses and Huws and Jones (2010) suggested more education to increase positive regard of people with autism. The students identified the same needs in our community. Transition needs (Hewitt, 2011; Van Hees et al., 2015) are needed for people with ASD coming to college campuses. The students identified these needs as well. While Hewitt, 2011, talks about the need for self-advocacy, the students in the course realized their role in advocating for this population aligning with Nowell et al. (2020) who shared that service-learning involving people with autism lead to more inclusive attitudes hence advocacy reflecting those attitudes. This takes the sole onus off the of the person with ASD and helps us as a community meet them at a middle ground echoing the sentiment of “different not less.”

When looking at question one, students gained a mission to bring equity to the autism community. This was the result of learning about autism and the experiences people with autism have, relating to the second research question. This can also be loosely tied to the third research

## SERVICE-LEARNING IN CSD

question in that students embraced the professional duty of the advocate likely influencing their interest in their chosen service profession.

### **Limitations**

There are numerous limitations to this study. Because of the IRB requirement for securing individual student permissions for using the course reflection papers, we were only able to analyze 40 out of 75 potential reflection papers. This left 35 papers unreviewed; some of which could have contained dissenting, or less favorable content. In addition, reflection papers were only required for the most recent 10 semesters, which generated nine paper sets, leaving the previous 12 semesters without this form of reflection. Further, the sample of interviewees, while purposefully selected to represent individuals with diverse experiences and backgrounds of people that chose this elective, may not have been representative in some unknown ways because they were from about a third of the course offerings over the past 22 semesters. In addition, reflexivity, or the tendency of interviewees to say what they think the interviewer wants to hear, is a real threat to validity in this study (see Yin, 2018, for discussion). As my former students who presumably know my passion for including and advocating for persons with ASD, at least some of these responders may have been more inclined to be very positive about the course, and its associated service-learning component. For this reason, results must be interpreted with caution and be replicated by other researchers.

In addition, researcher bias likely both contributed to coding data sources and my interpretations, despite safeguards adhered to throughout the data collection and analysis processes. However, my in-depth knowledge of the CSD 396 course and MOSSAIC program also assisted with accurate interpretation and understanding of the reported content. The reflection papers may have also been influenced by reflexivity (Yin, 2018). Students may have

## SERVICE-LEARNING IN CSD

felt compelled to share in a way that would elicit a top grade (though the papers were graded on completion) or to please their instructor, similar to the threat described above with the interviews.

Other limitations include differences in students' experiences in the course, such as some students doing one-on-one mentoring while others attended social evenings. Also, the course reflection papers were completely open-ended; the lack of prompts might be considered both a strength and weakness of my study in that I can offer a wide array of thoughts and reflections but also this resulted in dense information that was difficult to categorize. The resulting papers included a wide variety of topics which made inductive coding difficult. They likely could have been coded and interpreted in many different ways yielding different categorization of results.

### **Conclusion**

CSD 396 is a service-learning course partnered with the MOSSAIC program. Unique to the service experience is the practice of supporting adults with autism on and off campus. Following didactic learning and a minimum of 15 hours of service, students shared their perspectives on their learning through reflection papers and interviews. The papers from x past semesters and 10 new interviews were analyzed using qualitative coding methods.

Students viewed the peer-mentoring service-learning as a transformative experience to the extent that they felt others should take the course. The hands-on learning, discussions, Temple Grandin (2010) movie, small class size, and problem-solving activities contributed to their positive reflections. Students also favorably reflected on the course environment referencing the laid-back setting, being given topic choice, not being bound to a textbook, and instructor encouragement.

## SERVICE-LEARNING IN CSD

In terms of their relationships with peers with autism, students reported positive alliances, and in some cases even new friendships with expectations for the relationships to continue past the semester. Social skills seemed to improve for both mentors and mentees. This revelation about the reciprocal benefits to both the mentors and mentees prompted the MOSSAIC director to change her terminology to peer-to-peer for future renditions of the course.

Significant learning about autism and neurodiversity occurred in and out of the classroom. Students reported learning about the challenges people with ASD experience from listening to their mentees. Students learned about sensory dysfunction, intervention strategies, rural disparity, social determinants of health, advocacy, inclusion, etc. They also developed their skills, particularly in communication, evidence-based practices, inclusion practices, supporting executive functioning deficits, etc.

Students discovered joy in service and many reportedly developed fledgling advocacy skills. Through this process some students expanded their clinical interests and commitment to volunteering in the future. Most students reported that the experience validated their choice to pursue their chosen profession, mostly speech-language pathology. Some students reported that this experience resulted in their commitment to graduate school to become a speech-language pathologist.

In sum, friendships, learning, skill development, advocacy, and confirmation of professional pursuit seemed to resonate with the study participants. Limitations revealed that these voices may not reflect all of those that had the experience. Limitations also reflected that responses on papers and in interviews may have been executed in a way to please me, the researcher, instructor, clinical educator, and director of the MOSSAIC program.

Recommendations for further research were made to help address these limitations. Despite the



## SERVICE-LEARNING IN CSD

limitations, there was considerable evidence that the MOSSAIC program and affiliated CSD 396 course were memorable experiences for the study participants, yielding positive personal and professional outcomes.

### **Recommendations for Future Research**

Future research would be beneficial considering the outcomes of this study. Understanding the mentee experience would be especially beneficial, particularly since the MOSSAIC design of UW is different than UM likely yielding differing results. Pedagogy with regard to instructional conversations in CSD courses as well as using movies to augment learning would be of interest to me. Additional research on other campuses and community settings into the perspectives and skills learned by college students as a result of service learning with peers with disabilities, as well its perceived influence on their career choices, would be helpful. If results were similar, this would help to mitigate the limitations of this case study and help to increase the use and recognized value of such experiences. Lastly, learning about the education and training first responders and the campus community received regarding autism would be of worth to the community for understanding and responding to their educational needs on autism.

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**Appendix A: Paper Review Codes**

Parent Code	Child Codes	Sub-Codes
Covid 19		
Classmates	Contributions Diversity Enjoyed Relationships Similar Interests	
Course CSD 396	Allowed Creativity Benefit People Outside Major Excited for Course First Service-Learning Course Fun Furthered Knowledge Furthered Skills Good Course Inclusive Inspiring Should be Mandatory Not Sure What to Expect Recommend Course Took to Determine Profession Wish They Could Repeat Course Course Structure Articles Good Discussion Based Learning Documentary Learning Ease of Getting Service Hours Excited for Mentoring Experience Gave Opportunities Hands On Learning IPE/IPP/IPC Laid Back New Ideas Each Week Not Textbook Driven Opportunities for Relationships Problem Solving Activities Able to Request Topics Semesters were Different Small class size	

SERVICE-LEARNING IN CSD

Parent Code	Child Codes	Sub-Codes
Different not Less Future	Topics Transparency  Address Rural Disparity Advocate Benefits of Working with Interdisciplinary Team Caregiving for ASD Clients Decided or Validated to Become SLP Educate Others Friend to Students with ASD Help Family Members with ASD In General Skills for Future Increased Professional Skills & Knowledge Influenced Profession Insight to Profession Interested in Behavior Learn More on ASD Look Forward to Profession Looking Forward to Graduate School Make a Mark on Profession Parenting Skills Plan to Have Parent Resources in Practice Plan to Work in Culturally Diverse Areas Plan to Work with ASD Professional Goals Professional Role Will Repeat Class Spread MOSSAIC Program Telehealth to Support Rural Disparity Want More IPE/IPP/IPC Opportunities Work with Older Clients	
Gratitude Identified Needs of Community	Accessibility Advocacy Campus Needs Disability Rights Education on ASD First Responders Supports Forest Service Supports	

SERVICE-LEARNING IN CSD

Parent Code	Child Codes	Sub-Codes
Instructor(s)	Healthcare Needs Inclusion Lack ND Affirming Limited Resources in Latin America Parent Resources Referral to MOSSAIC Rural Disparity Social Determinants of Health Specific Children’s Programs Stigma or Stereotypes Supports Telehealth Transition Needs University Programs for ASD Appreciated Creates Safe Learning Environment Do Good Work Gave Guidance Good Discussions Good Lectures Inspired Interactive Learning Opportunities Open to Supporting Agencies Real World Examples Role Model Transparency Welcoming to MOSSAIC Participants Would like to Learn from in Future	
Learning	Ableism Advocacy ASD & Neurodiversity Behavior Challenges & Barriers Sensory Needs Cultural Competency Diagnosis Diversity of Disorder EBP Feeding Therapy Hands on Learning Healthcare Inclusion & Safe Spaces Intervention Tools/Strategies IPE/IPC/IPP	

SERVICE-LEARNING IN CSD

Parent Code	Child Codes	Sub-Codes
Mentee(s)	Learning General	
	ND Affirmation	
	Potential of People	
	Resources	
	Rural Disparities	
	Social Determinants of Health	
	Trauma	
	Challenges of Mentee	
	Characteristics of Mentee	
	Diversity of Mentees	
	Enjoyed Mentees	
	Helped Mentees	
	Interests of Mentees	
	Learned From Mentees	
	Learned Together	
	Needs of Mentee	
	Positive Regard for Mentees	
Progress of Mentees		
Relationship Building with Mentees		Comfort Level Changed Continue Relationships Past MOSSAIC Friend Relationships
	Time Spent Together	Activities Getting Beverages/Food Homework Talking & Hanging Out
MOSSAIC Program	Well Wishes	
	Benefits Colleges	
	College Supports	
	Good Program	
	Opportunity for Relationships	
	Participants Appreciate Program	
	Peer Mentoring	
	Program Growth	
	Role of Mentor	
	Safe Environment	
Personal Development	Accepting	
	Advocate	
	Appreciation for ASD	
	Aware of Biases	
	Awareness of Environments	

SERVICE-LEARNING IN CSD

Parent Code	Child Codes	Sub-Codes
	Awareness of Others	
	Being in the Moment	
	Being OK with Professional Challenges	
	Better Mentor	
	Better Self	
	Broadened Horizons	
	Challenged Self	
	Challenged Thinking	
	Changed Perspective	
	Confidence	
	Decreased Biases	
	Do Things Differently	
	Empathetic	
	Experience	
	Flexible	
	Friend to ASD Community	
	Giving	
	Grew from Relationship with Mentee	
	Growth	
	Hope	
	Inclusive	
	Inspired	
	Joy	
	Kindness	
	Learn About Self	
	Listener	
	Make Change	
	Ok with Being Different	
	Open Mind	
	Passionate about Career	
	Passionate about ND	
	Patient	
	Persistence	
	Professional Reflection	
	Researcher	
	Self-Reflection	
	Sense of Team	
	Take Other's Perspective	
	Understanding	
	Vulnerable	
Prior To Course	ASD Background	
	Experience with ASD	
	Had Textbook Knowledge	
	Only Experience with Children	



SERVICE-LEARNING IN CSD

Parent Code	Child Codes	Sub-Codes
	Different Views of ASD	
	Interested in ASD	
	Minimal Background	
	Little Knowledge of Intervention	
	Little to No Knowledge ASD	
	No Experience	
	Had Not Considered Behavior	
	Professionally	
	Not Considered Lack of Services for ASD	
	Relative with ASD	
	Unsure of Future	
Skill		
Development	Accommodation Provisions	
	Change ASD Narrative	
	Communication	
	Conflict Resolution	
	Connect with ASD	
	De-escalation	
	Educate Others	
	Identify Characteristics of ASD	
	Improvise	
	Inclusion	
	Interact with Participants	
	Listening	
	Navigating Behaviors	
	OK with Silence	
	Patience	
	Professional Boundaries	
	Public Speaking	
	Redirecting Skills	
	Relating through Experiences	
	Skills in General	
	Take a Different Perspective	
	Taught Skills	
	Taught Self- Advocacy	
	Understanding Behavior	
	Understanding Sensory Needs	
	Used EBP	
	Validate Feelings	
	Ways to Act in the Future	
Social Events	Can be Hard	
	Choices	
	Conversations	
	Enjoyed	

SERVICE-LEARNING IN CSD

Parent Code	Child Codes	Sub-Codes
	Essential	
	Excited for Socials	
	Felt Like Family	
	Food Helps	
	Friendship Walk	
	Fun	
	Good Energy	
	Inclusion	
	Large Size	
	Learned About people	
	Made Friends	
	Mentor Connections with Each Other	
	ND Affirmative	
	Nervous for First Meeting	
	Non-Academic	
	Organized Events	
	People Interested in Each Other	
	Pleasurable	
	Progress	
	Relationship Building	
	Service Hours	
	Specific Activities	
	Structure	
	Support Group	
	Supports Social Life	
	Went Well	
	Wish for More Social Events	
Special Opportunities	Clinical Experiences	
	Curry Health Staff Presentation	
	DiverseU Presentation	
	Fact Sheets	
	Fundraiser for CDC	
	Newman Fellowship	
	Pediatric IPE Event	
	Student Director	
Special Projects	Education for First Responders	
	Fire Department Training & Video	
	Lanyard Project	
	Resident Assistant Training	
	Sensory Kits for First Responders	
Temple Grandin	Appreciation for ASD	
	ASD was a Gift	
	Different Not Less	

## SERVICE-LEARNING IN CSD

Parent Code	Child Codes	Sub-Codes
	<ul style="list-style-type: none"><li data-bbox="477 268 756 298">Favorable Experience</li><li data-bbox="477 306 737 336">Informed Profession</li><li data-bbox="477 344 748 373">Learning About ASD</li><li data-bbox="477 382 683 411">Movie Specifics</li><li data-bbox="477 420 808 449">Professional Commentary</li><li data-bbox="477 457 776 487">Think About the Movie</li><li data-bbox="477 495 919 525">Understanding Challenges of ASD</li></ul>	

Appendix B: Consent Forms

SUBJECT INFORMATION AND INFORMED CONSENT

Study Title: Service Learning in CSD

Investigator(s):

PI: Jennifer Schoffer Closson, Doctoral Candidate  
College of Education Teaching and Learning  
[Jennifer.closson@msc.umt.edu](mailto:Jennifer.closson@msc.umt.edu)  
406-698-3658

Faculty Supervisor: Morgan Alwell  
College of Education Teaching and Learning  
[Morgan.alwell@msc.umt.edu](mailto:Morgan.alwell@msc.umt.edu)  
406-243-5512

Special Instructions:

This consent form may contain words that are new to you. If you read any words that are not clear to you, please ask the person who gave you this form to explain them to you.

Inclusion Criteria:

- You are being asked to participate in this study because you participated as a peer mentor associated with a course called CSD 396: Autism on Campus Service Learning
- You are 18 years of age or older

Purpose:

You have been invited to participate because you participated as a peer mentor for the MOSSAK program. The purpose of this research is to learn how service learning as a peer to people on campus with autism has impacted you personally and professionally. The results will be used for informing people in the community of Communication Sciences and Disorders about the outcomes of service learning at the undergraduate level.

Procedures:

If you agree to take part in this research study, the reflection paper(s) that you submitted as a class requirement will be analyzed. The only time commitment is signing and returning this form.

Risks/Discomforts:

There is no anticipated discomfort for those contributing to this study, so risk to participants is minimal.

Benefits:

There is no promise that you will receive any benefit from taking part in this study, however, your participation in this study may help us understand the impact of service learning in the field of CSD and may be used to inform future service-learning programs.

Confidentiality:

Your records will be kept confidential and will not be released without your consent except as required by law.

Your identity will be kept private.

If the results of this study are written in a scientific journal or presented at a scientific meeting, your name will not be used.

The University of Montana IRB
Expiration Date: <u>None</u>
Date Approved: <u>3-11-2022</u>
Chair/Admin: <u>[Signature]</u>

## SERVICE-LEARNING IN CSD

- The data will be stored in a locked/password protected location.
- Your signed consent form will be stored in a locked/password protected location separate from the data.

### Voluntary Participation/Withdrawal:

Your decision to take part in this research study is entirely voluntary.

You may refuse to take part in or you may withdraw from the study at any time without penalty or loss of benefits to which you are normally entitled.

If you decide to withdraw, please inform the PI Jennifer Schoffer Closson.

You may leave the study for any reason.

You may be asked to leave the study for any of the following reasons:

1. Failure to follow the Project Director's instructions;
2. A serious adverse reaction which may require evaluation;
3. The Project Director thinks it is in the best interest of your health and welfare; or
4. The study is terminated.

### Future research:

Identifiers will be removed from the identifiable private information and could then be used for future research studies or distributed to another investigator for future research studies without additional informed consent from you or your legally authorized representative.

### Clinically relevant results:

Upon the conclusion of the study you may request a copy of the dissertation by emailing [jennifer.closson@mso.umt.edu](mailto:jennifer.closson@mso.umt.edu)

### Questions:

If you have any questions about the research now or during the study, please contact: Jennifer Schoffer Closson 406-698-3658

If you have any questions regarding your rights as a research subject, you may contact the UM Institutional Review Board (IRB) at (406) 243-6672.

### Statement of Your Consent:

I have read the above description of this research study. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions I may have will also be answered by a member of the research team. I voluntarily agree to take part in this study. I understand I will receive a copy of this consent form.

\_\_\_\_\_  
Printed Name of Subject

\_\_\_\_\_  
Subject's Signature

\_\_\_\_\_  
Date

<b>The University of Montana IRB</b>
Expiration Date: <u>None</u>
Date Approved: <u>3-11-2022</u>
Chair/Admin: <u>[Signature]</u>

**SUBJECT INFORMATION AND INFORMED CONSENT**

**Study Title:** Service Learning in CSD

**Investigator(s):**

PI: Jennifer Schoffer Closson, Doctoral Candidate  
College of Education Teaching and Learning  
[Jennifer.closson@mso.umt.edu](mailto:Jennifer.closson@mso.umt.edu)  
406-698-3658

Faculty Supervisor: Morgen Alwell  
College of Education Teaching and Learning  
[Morgen.alwell@mso.umt.edu](mailto:Morgen.alwell@mso.umt.edu)  
406-243-5512

**Special Instructions:**

This consent form may contain words that are new to you. If you read any words that are not clear to you, please ask the person who gave you this form to explain them to you.

**Inclusion Criteria:**

- You are being asked to participate in this study because you participated as a peer mentor associated with a course called CSD 396: Autism on Campus Service Learning
- You are 18 years of age or older

**Purpose:**

You have been invited to participate because you participated as a peer mentor for the MOSSAIC program. The purpose of this research is to learn how service learning as a peer to people on campus with autism has impacted you personally and professionally. The results will be used for informing people in the community of Communication Sciences and Disorders about the outcomes of service learning at the undergraduate level.

**Procedures:**

If you agree to take part in this research study, you will be interviewed and recorded. A transcript will be generated for qualitative analysis. Once the transcript is generated, you will be given the opportunity to edit it for accuracy. Interviews will be done in person or over Zoom telecommunication software. The session should take about 30 minutes but could last up to an hour.

**Risks/Discomforts:**

There is no anticipated discomfort for those contributing to this study, so risk to participants is minimal. However, if you require a break from the interview process, that will be accommodated.

**Benefits:**

There is no promise that you will receive any benefit from taking part in this study, however,

<b>The University of Montana IRB</b>
Expiration Date: <u>None</u>
Date Approved: <u>8-11-2022</u>
Chair/Admin: <u>[Signature]</u>

## SERVICE-LEARNING IN CSD

your participation in this study may help us understand the impact of service learning in the field of CSD and may be used to inform future service-learning programs.

### Confidentiality:

Your records will be kept confidential and will not be released without your consent except as required by law.

Your identity will be kept private.

If the results of this study are written in a scientific journal or presented at a scientific meeting, your name will not be used.

- The data will be stored in a locked/password protected location.
- Your signed consent form will be stored in a locked/password protected location separate from the data.
- The audiotape and/or video recording will be transcribed without any information that could identify you. The tape will then be erased [or destroyed].

### Voluntary Participation/Withdrawal:

Your decision to take part in this research study is entirely voluntary.

You may refuse to take part or you may withdraw from the study at any time without penalty or loss of benefits to which you are normally entitled.

If you decide to withdraw, please inform the PI Jennifer Schoffer Closson.

You may leave the study for any reason.

You may be asked to leave the study for any of the following reasons:

1. Failure to follow the Project Director's instructions;
2. A serious adverse reaction which may require evaluation;
3. The Project Director thinks it is in the best interest of your health and welfare; or
4. The study is terminated.

### Future research:

Identifiers will be removed from the identifiable private information and could then be used for future research studies or distributed to another investigator for future research studies without additional informed consent from you or your legally authorized representative.

### Clinically relevant results:

Upon the conclusion of the study you may request a copy of the dissertation by emailing [jennifer.closson@mso.umt.edu](mailto:jennifer.closson@mso.umt.edu)

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The University of Montana IRB
Expiration Date: <u>None</u>
Date Approved: <u>3-11-2022</u>
Chair/Admin: <u>[Signature]</u>

# SERVICE-LEARNING IN CSD

research team. I voluntarily agree to take part in this study. I understand I will receive a copy of this consent form.

\_\_\_\_\_  
Printed Name of Subject

\_\_\_\_\_  
Subject's Signature

\_\_\_\_\_  
Date

### Statement of Consent to be Photographed:

I understand that audio/video recordings will be taken during the study.

I consent to being audio/video recorded.

I understand that audio/video recordings will be destroyed following transcription, and that no identifying information will be included in the transcription.

\_\_\_\_\_  
Subject's Signature

\_\_\_\_\_  
Date

The University of Montana IRB
Expiration Date: <u>None</u>
Date Approved: <u>3-11-2022</u>
Chair/Admin: <u>[Signature]</u>