IJRSLCE | International Journal for Research on Service-Learning & Community Engagement

Volume 5 | Issue 1 Article 12

2017

Pre-Service Educator Preparation to Teach Children with Disabilities Through Service-Learning

James Zagrodnik

Natalie A. Williams

Patrick A. Leytham

This article was originally published at:
https://journals.sfu.ca/iarslce/index.php/journal/article/view/173/184

Recommended Citation

Zagrodnik, J., Williams, N. A., & Leytham, P. A. (2017). Pre-service educator preparation to teach children with disabilities through service-learning. *International Journal of Research on Service-Learning and Community Engagement*, *5*(1), 161-180.

International Journal of Research on Service-Learning and Community Engagement
Volume 5 Issue 1 | 2017 | ISSN: 2374-9466 | http://journals.sfu.ca/iarslce

Pre-Service Educator Preparation to Teach Children with Disabilities Through Service-Learning

James Zagrodnik
Natalie A. Williams
Weber State University

Patrick A. Leytham
Touro University Nevada

The purpose of the multi-year study discussed in this article was to investigate the impact of pre-service educator participation in a community-based service-learning program for children with disabilities. Pre-service educators who were enrolled in either an adapted physical education or introduction to special education course participated in the Children's Adaptive Physical Education Society!, a skill-development program for 35 children (ages 5-12) with developmental disabilities. Two measures—a modified regular education initiative survey and a reflective blog assignment—were administered to the participants to identify changes in their beliefs and attitudes toward teaching and including children with disabilities in their future classrooms. The results revealed statistically significant gains in their understanding, confidence, willingness, skill set, and educational satisfaction. Responses in the reflective blogs further supported the statistical findings, suggesting that a community-based learning program provides pre-service educators with sufficient experiences to positively and effectively change their beliefs and attitudes toward teaching and including children with disabilities in their future classrooms.

Keywords: *service-learning, pre-service teachers, individuals with disabilities, reflective blog*

The Individuals with Disabilities Education Improvement Act of 2004 mandates that children ages 0 to 22 who have a documented disability and require special education services have access to the general education curriculum. It also mandates the principle of least restrictive environment (LRE), which requires, to the maximum extent where appropriate, the education of children with disabilities (CWD) alongside students who do not have a disability (Cawley, Hayden, Cade, & Baker-Kroczynski, 2002). Response to these two mandates—access to the general education curriculum and education of CWD with typical peers—has increased over the past decade. Nationwide, from 2006 through 2011, the percentage of CWD ages 6 to 21 who spent 80% or more of their instructional day inside a regular classroom has increased from 55% to 61% (U.S. Department of Education, 2015). Within the western state where this study was conducted, CWD ages 6 to 21 who spent 80% or more of their instructional day inside a regular education classroom increased from 51% to 55%.

With CWD receiving increased access to the general education curriculum within the LRE, a question arises: What have been the attitudes of general and special educators? Despite the federal mandate and positive trends around the inclusion of CWD within general education classrooms, progress

has been relatively slow (McLeskey, Hoppey, Williamson, & Rentz, 2004; McLeskey, Landers, Williamson, & Hoppey, 2012; Smith, 2007). After conducting a meta-analysis of teacher attitudes toward the inclusion of CWD, Scruggs and Mastropieri (1996) concluded that a significant number of teachers were unable or unwilling to meet the needs of the students due to a lack of expertise, resources, and support. More recently, general education teachers have reported similar issues regarding inclusion, indicating that they (a) do not have adequate support (DeSimone & Parmar, 2006); (b) may not be able to manage all students (Cook, Cameron, & Tankersley, 2007); and (c) lack adequate training (Symeonidou & Phtiaka, 2009). Furthermore, De Boer, Pijl, and Minnaert (2011) found that neutral and negative attitudes of primary general education teachers toward inclusion persist.

These issues and attitudes regarding the inclusion of CWD have also been found within educator preparation programs. Specifically, pre-service educators (PSEs) have reported negative attitudes toward inclusion before and after taking coursework regarding CWD (Alquraini, 2012; Forlin & Chambers, 2011; Male, 2011; Mintz, 2007; Seçer, 2010; Vickerman & Coates, 2009). Of the various strategies described within the literature for improving PSEs' perceptions about working with CWD (e.g., case-based learning, hybrid space, service-learning), service-learning has been found to increase learning and reduce negative perceptions (Lucas & Frazier, 2014; Melekoglu, 2013).

From a university perspective, the outcomes of service-learning include: (a) positive effects on personal and interpersonal development; (b) an increased sense of social responsibility, citizenship, and commitment to service; (c) improved student academic learning through application to the "real world"; (d) reduced stereotypical thinking among students; and (e) facilitated cultural and racial understanding (Celio, Durlak, & Dymnicki, 2011; Conway, Amel, & Gerwien, 2009; Eyler, Giles, Stenson, & Gray, 2001; Lockeman & Pelco, 2013; Yorio &Ye, 2012). Similarly, the potential outcomes from participation in educator preparation programs include: (a) increased knowledge of the unique characteristics of young adolescents; (b) an understanding of the differences that an adult advocate can make in the lives of young adolescents; (c) improved professional viewpoints; and (d) the promotion of empathy, leadership, reflections of self and society, confidence in new situations, professional practice development, and knowledge and skills among PSEs (Chambers & Lavery, 2012; McMurtrie, Coleman, Ruppert, & Senn, 2014). These findings remain consistent across many academic disciplines for PSEs, including reading and language arts (Rattigan-Rohr, He, & Murphy, 2014), science and math (Yang, Anderson, & Burke, 2014), physical education (Domangue & Carson, 2008; Galvan & Parker, 2011; Gil-Gómez, Chiva-Bartoll, & Martí-Puig, 2015; Peralta, O'Connor, Cotton, & Bennie, 2016; Tice & Nelson, 2015) and special education (Brownlee & Carrington, 2000; Campbell, Gilmore, & Cuskelly, 2003; Carroll, Forlin, & Jobling, 2003; Lucas & Frazier, 2014; Melekoglu, 2013).

Few studies, however, have identified how specific programs developed for CWD impact PSE attitudes toward the inclusion of CWD. Of the studies reviewed for this research, service-learning projects were limited to lectures and videos (Carroll et al., 2003), a single individual with a disability (Brownlee & Carrington, 2000), small numbers of college participants (Galvan & Parker, 2011), or projects focused primarily on only one disability (Campbell et al., 2003). None included a crucial aspect of service-learning: critical reflections (Ash & Clayton, 2009; Eyler, 2002). The ability to reflect is an important characteristic and skill of an effective teacher (Alger, 2006). One of the ways in which college students can engage in reflection is through consistent blogging, which has been found to increase their reflective thinking abilities (Xie, Ke, & Sharma, 2008). Pre-service educators have expressed a positive view of blogs and have advocated for their use in the reflective process (Shoffner, 2009); moreover, reflective blogging has been shown to promote the depth and breadth of PSE responses (Stiler & Philleo, 2003).

To address the need to identify the attitudes of PSEs within the context of a specific program for CWD, the Children's Adaptive Physical Education Society! (CAPES!) was created by two of the authors in the fall 2013 semester. CAPES! is a community-based service-learning program developed to improve the experiences and civic engagement of three groups of individuals: CWD, parents, and PSEs. For children ages 5 to 12 with developmental disabilities, CAPES! is a skill development and enhancement program, with the ultimate goal of increasing each child's independence. At the lead authors' university campus, for 1.25 hours each week, over the course of 10 weeks during the fall and spring academic

semesters, 35 children with various developmental disabilities come to the gymnasium and natatorium to participate in 30 minutes of land-based skill development and 30 minutes of aquatics-based skill development (and 15 minutes of changing time in between). Skill development ranges from physical, social, cognitive, emotional, and behavioral foci depending on the needs and goals of each child and parent(s). While participating in CAPES!, children have access to a large gymnasium, classrooms, racquetball courts, climbing walls, fitness equipment, and a swimming pool. Each child also has access to a plethora of disability-specific and general physical education equipment; sensory stimulation and therapy devices; and reading, writing, and communication tools. Parents of children participating in CAPES! have the opportunity to observe their child and the PSE in all land- and aquatic-based learning environments, exercise, relax in the university's stress-relief center, or attend parental facilitation activities led by one of the authors of this study. Also, parents have access to the CAPES! library, which contains disability-specific skill enhancement aids, games, and tools that can be checked out and utilized by families during the week.

For pre-service educators, CAPES! provides opportunities to experience, reflect, and become engaged in a community. The program is run primarily by PSEs, allowing them to apply theories and best practices discussed in their college courses to real-time experiences. Paired with a CWD, each PSE focuses on what the child can do and who the child is, not on the disability or any perceived limitations. The purpose of this study, therefore, was to examine the effects CAPES! had on PSEs' beliefs and attitudes toward their teaching and the inclusion of CWD. The principle research question was, "How does participation in a community-based service learning program (i.e., CAPES!) affect pre-service educators' attitudes and beliefs about children with disabilities?"

Method

Participants

Pre-service educators. Participants in this multi-year study were undergraduate students enrolled in either an adapted physical education (N = 16) or human exceptionality (N = 107) course at a four-year institution in the western United States (see Table 1). Both courses are considered introductory to understanding the characteristics and rights of CWD from either a physical education or general/special education perspective, and both are designated by the university as a community-engaged learning class. Students in these courses are typically in the second or third year of their undergraduate coursework, and the majority are pursuing their teaching license. Participants' ages ranged from 18 to 45 years old, and over half (68.8%) indicated prior experience working with CWD in various settings (e.g., special education, employment, tutoring, family, related service, Special Olympics, special camps, etc.). Convenience non-probability sampling was used to identify and recruit participants. After the first class of instruction, a research assistant (an undergraduate student) distributed and collected informed consent documents. The authors then met the following week to pair each PSE with a CWD. Assignments were made based on the authors' knowledge of the PSEs and CWD.

Table 1. Demographic Information by Semester and Course

	Spring 2015		Fall 2015		Spring 2016	
	APE (n = 6)	HE (n = 55)	APE (n = 5)	HE (n = 24)	APE (n = 5)	HE (n = 28)
Age (Mean)	23.33	23.90	23.40	26.75	24.80	21.85
Gender						
Female	2	47	1	23	2	26
Male	4	8	4	1	3	2
Intended Degree						
Physical Ed	6	1	5	0	4	0
Special Ed	0	3	0	7	1	3
Elementary Ed	0	22	0	11	0	21
Other*	0	5	0	2	0	2
Prior Experience						
Yes	4	22	1	15	2	20
No	2	9	4	5	3	6

Note. This information is based upon data reported after each pre-survey administration. Not every participant answered each question; therefore, some of the totals for each category do not add up to the total number of respondents. APE = Adapted Physical Education course. HE = Human Exceptionality course. * = Early Childhood Education, Alternative Route to Licensure (Theater), Communicative Disorders, Undecided, Masters of Elementary Education

Children with disabilities. The following inclusion criteria were used to identify and select child participants: (a) between the ages of 5 and 12; (b) diagnosed with a developmental disability (e.g., intellectual disability, autism spectrum disorder, Down syndrome, physical impairment); and (c) mild-moderate behavioral concerns. Special education facilitators from the local districts distributed flyers to the potential CWD through the special educators. Interested parents then contacted the authors and were provided an application packet via email. The authors then obtained assent from the CWD on the first day of participation in CAPES!.

Instruments

Regular education initiative survey (modified). Each PSE completed a modified regular education initiative (REI-M) survey (see Table 2) prior to participation in and upon completion of the CAPES! program. The current modified version reflects the community engagement experiences of PSEs as they worked with CWD. The REI-M included 40 items (1 = strongly disagree; 5 = strongly agree) that examined five domains: (a) understanding (seven questions); (b) confidence (10 questions); (c) willingness (10 questions); (d) skill (10 questions); and (e) educational satisfaction (three questions) (see Table 3 for definitions of the domains as they have evolved).

Table 2. Example of Questions from the "Regular Education Initiative-Modified" Survey Used during the Study

Personal Perspective: Please indicate your skill level and understanding of including students with special needs in your classroom.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. I understand the concept of inclusion/integration.	5	4	3	2	1
2. Students with disabilities should be integrated into general classes for typically developing students, rather than attending classes just for special education students.	5	4	3	2	1
3. The size of the class needs to be lowered when students with disabilities are included.	5	4	3	2	1
4. I presently have the skills to successfully include students with disabilities in my classroom.	5	4	3	2	1
5. The inclusion of students with special needs into regular classes will take much of the teacher's time and attention from typically developing students.	5	4	3	2	1
6. I am in favor of including students with disabilities into the general education classroom.	5	4	3	2	1
7. I am in favor of including students in disabilities into the general education class, and in particular a PE class.	5	4	3	2	1

Note. These questions relate to the understanding domain.

Table 3. Definition of domains in the Regular Education Initiative Survey

Domain	Phillips, Allred, Buelle, & Shank (1990)	Gemmell-Crosby & Hanzlik (1994)	Zagrodnik, Williams, & Leytham
Understanding / Attitude	---	"Teachers' attitudes toward the concept of inclusion" (p. 283).	How well pre-service educators understand inclusion and their beliefs about inclusion.
Confidence	Confidence "in their abilities to (1) work with parents, (2) provide individual assistance, (3) adapt materials, (4) participate in IEP conferences, (5) adapt curriculum, and (6) manage behaviors" (p. 184).	"[Teachers'] confidence in their abilities to perform tasks related to serving this population" (p. 283).	How confident and comfortable pre-service educators are including children with disabilities in their classrooms.
Willingness / Capacity	"Teachers' willingness and capacity to work with students identified as handicapped" (p. 183).	---	Pre-service educator willingness to include children with various developmental disabilities within their classroom.
Skills	"[Teachers'] skill to integrate students with handicaps" (p. 183).	"Teachers' perceptions of their skills to successfully include children with disabilities" (p. 283).	Self-perceived skill level a pre-service educator has to successfully include children with various developmental disabilities within their learning environments.
Educational Satisfaction	---	"The amount of education and training [teachers] received" (p. 283).	How satisfied pre-service educators are with their training about inclusion and how to teach children with disabilities.

Blogs. Pre-service educators reflected upon their weekly service-learning experiences using blogs (see Figure 1). The intent of each reflective blog was two-fold: to provide a means for reflecting on experiences and expressing beliefs and attitudes about teaching CWD; and to assist PSEs in aligning their responses with the five domains being measured by the REI-M. Each semester, PSEs responded to ten blog topics. The final blog topic asked PSEs to provide a general synopsis of their experiences, what they were able to accomplish with the child with whom they worked, and suggestions for the next group of PSEs. Responses to this final blog were not posted online due to the potential sensitivity of the information; instead, they were given directly to the authors. Therefore, the analysis of the reflections, responses, and interpretations was limited to nine blogs each semester (27 in total). Participation and

response rates for the reflective blogs were over 90% each semester. This may have been due to the fact that each reflective response was scored. Points were earned on a complete/incomplete basis to avoid coercion. Pre-service educators were aware that they earned points by responding to the prompts and that their points were based on a complete/incomplete basis only.

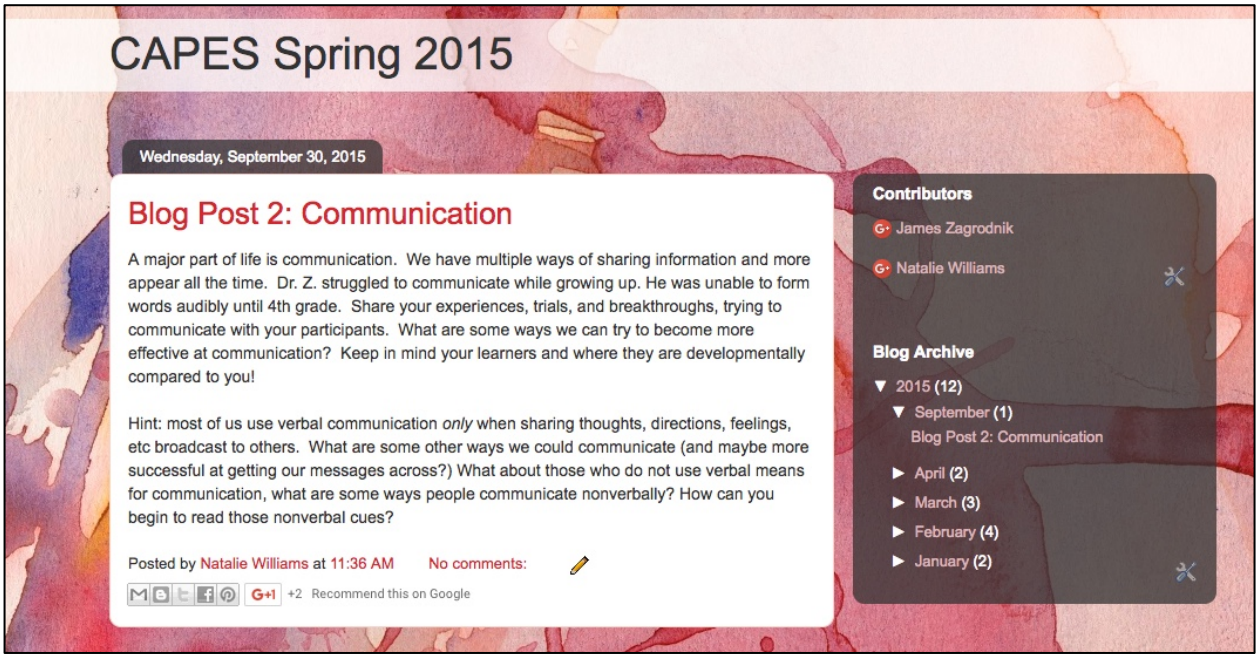

Figure 1. Example of the reflective blog assignment that pre-service educators used throughout their participation in CAPES!. Each blog was based upon the 5R framework devised by Bain, Ballantyne, Mills, and Lester (2002): reporting, responding, relating, reasoning, and reconstructing.

Design

Changes in the attitudes and beliefs of PSEs about the inclusion of CWD were measured using a one-group pretest-posttest design. The five domains described earlier (i.e., understanding, confidence, willingness, skill, and education satisfaction) comprised the study's dependent variables, while time represented the independent variable. The selected design minimized the following potential threats to internal validity: instrumentation (i.e., no changes made to the REI-M for pre- and post-survey administrations); and testing environment (i.e., PSEs completed each survey and blog post in the same location and within the same time frame).

Survey data were analyzed using various statistical procedures. For the first semester (i.e., spring 2015), total mean scores were calculated to identify changes in the five domains from pre- to post-survey administrations; this procedure was adopted due to inadequacies in the data collected (e.g., nonresponses to questions that would have allowed for a more robust analysis to be conducted, such as including personally identifiable information to compare changes over time within the same participants). For the second and third semesters (i.e., fall 2015, spring 2016), a Wilcoxon signed-rank test was used to identify changes in attitudes and beliefs about inclusion. Blog responses were analyzed using ATLAS.ti 7, a qualitative data management tool that allowed the authors to describe, classify, analyze, interpret, and report findings. Utilizing summative content analysis procedures (Hsieh & Shannon, 2005), the authors devised a coding system for analyzing reflective blog responses (see Table 4). First, the authors, who are experts in their respective fields of physical and special education, created operational definitions. They then identified keywords in two stages: (a) conducting an initial search using the Internet for synonyms related to words found within either the conceptual or operational definition; and (b) conducting a review

of the blogs from the first semester (i.e., spring 2015). Prior studies using the REI (Phillips et al., 1990) or an adapted version (Gemmell-Crosby & Hanzlik, 1994) did not provide analyses of reflections; therefore, keywords were identified in the manner discussed previously. All reflective blogs (spring 2015 = 261, fall 2015 = 98, spring 2016 = 199) were then coded based upon the keywords. Selected "typical" (i.e., keyword appearing the most) examples of blog responses were identified by the authors and included for an interpretation of the results. The authors established trustworthiness of the collection and interpretation of the data according to the tenets described by Shenton (2004): credibility (i.e., the use of well-established research methods, triangulation through different types of collected data over multiple occurrences, frequent debriefing sessions with participants, qualifications and experience of the authors), transferability (i.e., thick descriptions of the experiences found in the reflective blogs), dependability (i.e., research design and procedures, operational definitions), and confirmability (i.e., reflexivity through multiple investigators).

Table 4. Keywords Used while Searching the Reflective Blogs for Evidence of a Domain

Domain	Operational Definition	Keywords
Understanding	Demonstration of comprehension of new information, new perceptions and judgements, and new awareness of tolerance of individuals with disabilities and themselves	know, learn, aware, belief, perception, feeling, impression, judge, realize, compassion, feeling, and acceptance
Confidence	Demonstrating a feeling and belief of their own abilities	fear, anxiety, nervous, anticipation, confusion, control, confidence, motivation, sure, anticipation, comfortable, and excitement
Willingness	Demonstrating the feeling and belief of their readiness to interact or teach individuals with disabilities	ready, desire, eager, pleasure, incline, lend, and mind
Skills	The capacity to perform as teachers or interact with an individual with a disability	experiment, equipment, respond, plan, strategy, changes, modify, and challenge
Educational Satisfaction	Level of student satisfaction with education and support services	Being aware, demonstrate, display, exhibit, internalize, notice, and participate

Procedures

During each semester of this study, three phases occurred: setup (phase 1), implementation (phase 2), and analysis (phase 3). During the setup phase, the authors obtained Institutional Review Board approval, scheduled the facilities (i.e., gym, natatorium), recruited the participants, and administered the REI-M. During the implementation phase, PSEs from both the adapted physical education and human exceptionality courses prepared, taught, and reflected upon their weekly CAPES! service-learning experience. Before a weekly CAPES! session, PSEs received information regarding the CWD with whom they would be working and developed a lesson plan that was developmentally appropriate, individualized, and sequential. At a weekly CAPES! session, PSEs implemented their plans, which often included adjusting delivery of content, using behavior management strategies learned in class, and seeking feedback from the authors. After a CAPES! session, the PSEs met with the authors to debrief and begin

planning for the following session; they also had the option as well, to complete the reflective blog while there or at home. During the analysis phase, PSEs completed the REI-M at the end of the ten-week sessions, and the authors analyzed the data using SPSS and ATLAS.ti 7.

Results

A high level of internal consistency was found using Cronbach's alpha for four of the five domains (confidence = .912; willingness = .903; skill = .969; and educational satisfaction = .907). A low level of internal consistency, however, was found for the remaining domain (understanding = .309).

When comparing the combined means of all participants (N = 123), positive differences between pre- and post-survey results emerged across all domains (see Figure 2). The most significant changes between pre- and post-survey results occurred in the skill (+0.96) and educational satisfaction (+0.89) domains. Moderate changes were observed in the understanding (+0.53) and confidence (+0.68) domains, while minimal change was found in the willingness domain (+0.33).

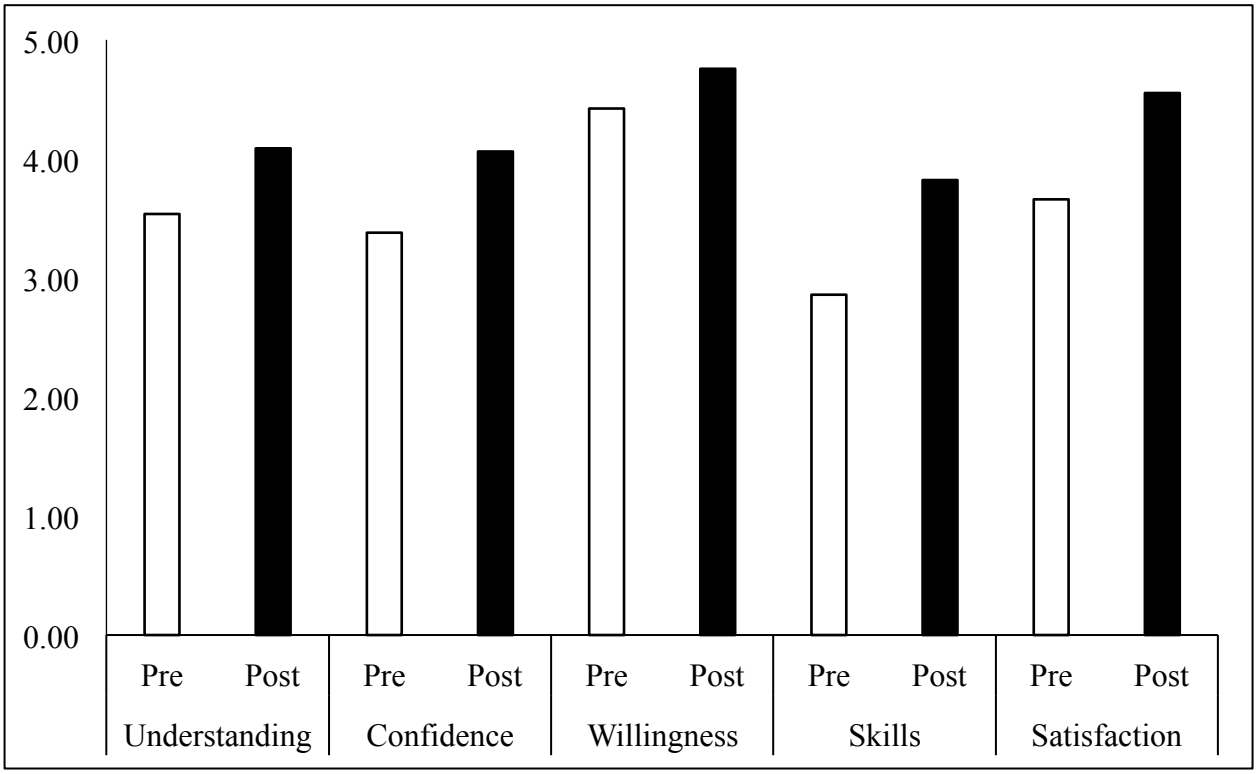

Figure 2. Total mean scores averaged from students enrolled in both courses (adapted physical education and human exceptionality) during the spring 2015, fall 2015, and spring 2016 semesters. Scores ranged from strongly disagree (1) to strongly agree (5).

Understanding

Mean results from the spring 2015 PSE group (N = 61) indicated a moderate positive change from pre- (n = 34, M = 3.51) to post-survey (n = 26, M = 4.09) administrations. One respondent did not answer at least one question; therefore, those data were removed from the overall analysis. Of the 62 PSEs who attempted to complete either or both pre- and post-surveys during the fall 2015 and spring 2016 semesters, fewer than half (n = 27) completed both. Statistically significant differences on five of the seven questions were found using a Wilcoxon signed-rank test (see Table 5).

Table 5. Pre-Service Educator Understanding of and Beliefs about Inclusion

Question	Descriptive Changes			Wilcoxon Signed-Rank Test	
	Positive	Negative	No Change	z score	p value
Q1	22	1	4	4.08	< .001*
Q2	17	1	9	3.58	< .001*
Q3	4	13	10	-1.65	.101
Q4	21	3	3	3.47	.001*
Q5	4	14	9	-1.94	.052
Q6	17	1	9	3.60	< .001*
Q7	12	3	12	2.08	.037*

Note. * = $p < .05$

Initial responses related to the blog prompt reflected PSEs' (emerging) awareness around the capabilities of CWD:

- "I've learned that she is capable of stuff that I wouldn't think she is capable of."
- "I quickly discovered that C. loves to do things."
- "The CAPES participants were much more capable than what I had first imagined."

Also, during the first two weeks of their participation in the program PSEs were often coming to terms with themselves and their insecurities:

- "I have never worked with kids with disabilities before."
- "I was nervous at the beginning but when I met first K., everything changed."
- "Not judging things before you give them a chance is something I have really learned."

Such typical early responses demonstrated that this service-learning program provided many PSEs the opportunity to become aware of what a child with disabilities can do, which had the potential to influence their future beliefs on inclusion.

As CAPES! progressed, so too did the PSEs' awareness of what inclusion was and what it meant to them as future educators. Typically, responses included observations about what parents and teachers experience: "I have so much more respect for the parents and teachers of exceptional children." This empathy for parents also suggested the early foundations of knowing and understanding who CWD are and their connection to a family unit. The PSEs also began to identify what CWD can do:

- "The biggest realization for me has been how vastly different each child's needs are."
- "The same child can even be different from one week to the next."
- "I have learned that each person with a disability is individual and needs individual instruction."
- "I have learned that you should never underestimate what a child with a disability can do."
- "M. continues to surprise me with how smart he is!"

As the PSEs formed relationships with the children with whom they were working, these relationships began to shape their ideas on inclusion. As some PSEs wrote:

- "I have felt our relationship grow immensely."
- "As I have pushed C. to accomplish tasks that he never has before and encouraged him through it, a closeness has developed between us."
- "I am a lot more comfortable with him and he is a lot more comfortable with me."

- "Getting to know B. and his family has allowed me to see how much love and support he has behind him. It reminds me to not only believe in others, but to know that all every child needs in life is at least one person to believe in them and they can be successful."

Pre-service educators used descriptors such as "smart," "creative," and "capable" to describe the children with whom they worked. As the PSEs developed an understanding of inclusion and connected with their CWD, they began to see the child first, rather than the disability. One PSE, who as a result of the CAPES! experience saw exceptional learners in a different light, felt more motivated: "I'm very excited to really push him and teach him how to do more." Indeed, as another participant put it, "There is never a shortage of things we can challenge these kids with and we are really only limited by our creativity."

Finally, some PSEs provided examples of how they progressed beyond simply understanding and believing in inclusion to finding value in the inclusive process and its importance to individual children, the parents, and the teachers:

- "Everyday brings excitement and changes."
- "The children all appear to enjoy themselves."
- "They are more and more eager to participate in the 'fun' of learning. We should continue to keep 'play' in mind when developing our lesson plans. Learning develops within the zone of proximity for 'ALL' children and is guided by social interactions with others. We need to involve the parents, as well in the roles of play. Not just as the eager and sometimes with apprehension, onlookers. The parents, CAPES [sic] students, and their siblings can have a full participation opportunity to interact with us and make suggestions."

Confidence

Mean results from the spring 2015 PSE group indicated a moderate positive change from pre- (n = 25, M = 3.53) to post-survey (n = 20, M = 3.95) administrations. Sixteen respondents did not answer at least one question, and their data were removed from the overall analysis. Of the 27 participants who completed both the pre- and post-surveys during the fall 2015 and spring 2016 semesters, a Wilcoxon signed-rank test determined that statistically significant differences occurred in relation to nine of 10 questions (see Table 6).

Table 6. Pre-Service Educator Confidence to Include Children with Disabilities

Question	Descriptive Changes			Wilcoxon Signed-Rank Test	
	Positive	Negative	No Change	z score	p value
Q1	19	0	8	4.01	< .001*
Q2	20	1	6	3.55	< .001*
Q3	15	3	9	2.65	.008*
Q4	20	3	4	3.68	< .001*
Q5	16	3	8	3.23	.001*
Q6	13	4	10	2.36	.018*
Q7	17	1	9	3.56	< .001*
Q8	2	2	7	3.98	1.00
Q9	19	0	8	3.98	< .001*
Q10	19	1	7	3.43	.001*

Note. * = p < .05

Qualitatively, PSEs overwhelmingly indicated their growing confidence in teaching and including CWD in their lessons. While most reported little confidence prior to the start of the service-learning program, their confidence rose after the first few weeks of their participation:

- "At the beginning I wasn't confident but now I am more confident with my knowledge and my experiences."
- "I was very nervous for CAPES [sic] since I haven't had much experience with children with disabilities. With that being said, I had so much fun Tuesday night!"
- "My first day experience with CAPES! went so well."
- "It was nothing like I was expecting and not nearly as hard as I was thinking it was going to be. I was very very nervous because I do not have much experience with disabled individuals."
- "To be honest I was extremely nervous, but the moment I met my student I fell in love and all of my anticipation faded away."

As CAPES! progressed, so too did PSE confidence:

- "CAPES! has been crazy for me, I knew the kid portion would be uncomfortable for me because it is just something I've never done or been around. It has gotten better though! It is not uncomfortable at all."
- "Being around these kids is normal to me now when 5 weeks ago it would have been an anxiety attack for me."

Indeed, in many instances, the PSEs' growing confidence was attributable to the children themselves:

- "Each week she seems to get more and more comfortable and it is great to see! I look forward to seeing her progress in the next few weeks."
- "She gave me a hug when we were done for the night. Those kind of things make me excited to be a future teacher."

By the sixth week, most PSEs mentioned confidence less explicitly; rather, they began reporting on ways in which they were demonstrating confidence: "Next time I plan on being more assertive to my child and taking more control so we are more productive and can both make improvements." This was one of the most commonly expressed sentiments, demonstrating that most of the PSEs were no longer contemplating their insecurities but instead were focusing on what they needed to do to exhibit their confidence to help themselves teach and their respective children to learn. Finally, for many PSEs, confidence seemed to transform into motivation as they began to believe more in themselves, in the child, and in inclusion itself: "What is keeping me motivated is watching D. improve in leaps and bounds. According to his mother he would not swim or do much in the water but now he is swimming like a fish without any fear. He also would not participate with the others in our group at the beginning but now he is an active participant. Last night we played twister [sic] and he was communicating with others and being very social which is not typical."

Willingness

Mean results from the spring 2015 group of PSEs indicated a minimal positive change from pre- (n = 32, M = 4.51) to post-survey (n = 27, M = 4.67) administrations. Two respondents did not answer at least one question, and their data were removed from the overall analysis. Twenty-seven PSEs completed both pre- and post-surveys during the fall 2015 and spring 2016 semesters. A Wilcoxon signed-rank test determined that there were statistically significant differences in relation to nine of 10 questions (see Table 7). Further analysis of the one question in which no significance was found indicated that over half (n = 15) of PSEs did not change their response from pre- to post-survey.

Table 7. Pre-Service Educator Willingness to Include Children with Disabilities

Question	Descriptive Changes			Wilcoxon Signed-Rank Test	
	Positive	Negative	No Change	z score	p value
Q1	15	1	11	3.50	< .001*
Q2	10	2	15	1.81	.071
Q3	14	2	11	2.98	.003*
Q4	12	3	12	2.32	.020*
Q5	13	2	12	2.84	.005*
Q6	13	2	12	2.84	.005*
Q7	12	2	13	2.67	.008*
Q8	14	1	12	3.30	.001*
Q9	13	2	12	2.83	.005*
Q10	15	2	1	2.68	.007*

Note. * = $p < .05$

As reported previously, PSEs participating in the service-learning program demonstrated the least amount of change in the willingness domain (see Figure 5). Willingness was defined as the demonstration of the pre-service educator's readiness to interact with or teach CWD. It is likely that there was little change in this area because shifts in attitudes toward inclusion are a response not to willingness to work with a child with a disability, but to self-perceived skill (Giffing, Warnick, Tarpley, & Williams, 2010). With this in mind, the PSEs still wrote extensively—both in breadth and depth—about willingness in their blog posts:

- "At the end of each evening I tell myself, 'Next week will be better!' and even if it's not, that doesn't matter because next week is going to be better!"
- "CAPES! has been such an adventure thus far! I started out very uneasy, and now I can't wait to see L and work with him every Tuesday."
- "This week at CAPES [sic] was amazing. I cannot wait to continue to work on becoming friends and helping her reach her full potential as we go through CAPES! I know that this will be the highlight of the semester."

Toward the end of CAPES!, willingness evolved into expressions of both disbelief and sadness at the PSEs not being able to continue teaching their respective children:

- "Wow...Only a few weeks left. I have to say I don't want it to end. My CAPES! kid is doing so awesome and makes so much progress each week that I want to keep going."
- "I can't believe there are only two more weeks left! I feel like I have just scratched the service with R. There is so much more I want to do!"
- "I actually wish I had more time with L, or any of the other kids, just so I could be even more of a help with getting him to do those activities/skills that he has been more anxious of doing."
- "I really can't believe we are almost done with CAPES! It's sad because I feel like just when we are starting to make good progress."

These responses indicate that not only had the PSEs moved beyond recognizing their own willingness to teach CWD, but they had reached deeper levels of willingness to continue teaching these individuals in the future.

Skills

Mean results from the spring 2015 PSE group indicated a strong positive change in self-perceived skills for working with CWD from pre- ($n = 32$, $M = 2.83$) to post-survey ($n = 27$, $M = 3.71$) administrations. Two respondents did not answer at least one question, and their data were removed from the overall analysis. Of the 62 PSEs who attempted to complete either or both pre- and post-surveys during the fall 2015 and spring 2016 semesters, only 25 completed both. Statistically significant differences on all 10 questions were found using a Wilcoxon signed-rank test (see Table 8).

Table 8. Pre-Service Educator Skillset to Include Children with Disabilities

Question	Descriptive Changes			Wilcoxon Signed-Rank Test	
	Positive	Negative	No Change	z score	p value
Q1	19	1	5	3.55	< .001*
Q2	18	2	5	3.42	.001*
Q3	18	1	6	3.75	< .001*
Q4	17	1	7	3.57	< .001*
Q5	19	1	5	3.80	< .001*
Q6	19	1	5	3.59	< .001*
Q7	17	3	4	3.36	.001*
Q8	21	0	4	4.07	< .001*
Q9	10	7	8	1.28	.202
Q10	18	1	6	3.72	< .001*

Note. * = $p < .05$

Blog reflections revealed that the self-perceived teaching and interaction skills of PSEs changed tremendously during the service-learning program. Initial responses indicated that PSEs focused primarily on specific skill development and the use of equipment as tools for learning:

- "CAPES! was awesome! It was all sorts of fun to get to know L. and experiment with a lot of the equipment and centers, such as balance on the island rocks balance objects and having him jump to different number pads on the floor."
- "I had him work with the kick boards, and we talked about fast and slow. In the gym he loved the tunnel and we also talked about fast and slow, and the word big with the expansion of the tunnel and small when we brought it in. I felt like he responded really well."

After about three weeks of the CAPES! experience, however, blog reflections began to center more on how PSEs were communicating with and presenting information to their learners. This represented a shift from the actual equipment being used to the skills they needed to have in order to be effective teachers. The PSEs began to realize that an essential teaching skill is communicating to learners the how, what, where, and when to learn. Also, the PSEs began to understand that the skill of communication is not just verbal:

- "I have found that the participants respond to the verbal communication if it is tied to body language."

- "I came in with some plans for the week based off of my observations from the previous week. Some of those ended up working out very well, such as my visual feelings chart... to determine how my child was doing... previous verbal questioning led to answers of 'I don't know,' when using the chart he was able to successfully provide an answer that appeared to match his mannerisms."
- "If I could tell he became distracted I would say 'C., look,' and then point at my eyes. He would then look at me and I would smile. I could see him calm down again. That was a good strategy for me to learn. It helped me the rest of the night."
- "I think just telling him was not effective. The changes I can make in the upcoming weeks are giving more of a visual example whether demonstrating the task so he can see it."

These kinds of responses suggest strongly that PSEs' skills for communicating with CWD were greatly improving.

Further into the semester, at approximately week seven, PSEs began referencing skills related to effective teaching:

> I hadn't planned enough activities because C. got bored with them quickly. I've realized that I either need to plan more activities, or modify the activities that I have planned for him so that they take longer to complete, are more challenging, and/or require the help of other CAPES! participants. Working with C. is very good for me because I need to be thinking one or two steps ahead of him so when he completes activities, we are already moving on to another. As a PE teacher, if my students don't always have something to do, they will start messing around and creating trouble. Working with C. will challenge me to modify lessons and activities in order to always keep him busy and on task.

PSEs mentioned additional teacher skills in their reflections:

- "You need to have a backup plan no matter what!."
- "Rewards are a very powerful tool."
- "Create a lesson plan that is adaptive."
- "Being able to be flexible and being able to roll with the punches."

These responses describe critical foundational teacher skills, which help teachers create successful learning environments. It is apparent that this community-based service-learning program provided PSEs with real-world experiences that facilitated their awareness and understanding of how to prepare for and be open to change as effective teachers.

Educational Satisfaction

For the purposes of this study, educational satisfaction was defined as the level of student satisfaction with the education and support services provided. Mean results from the spring 2015 PSE group (N = 61) indicated a strong positive change in this outcome from pre- (n = 34, M = 3.69) to post-survey (n = 25, M = 4.48) administrations. Two respondents did not answer at least one question, and their data were removed from the overall analysis. Of the 28 participants who completed both the pre- and post-surveys during the fall 2015 and spring 2016 semesters, a Wilcoxon signed-rank test determined that there were statistically significant differences related to all three questions (see Table 9).

Table 9. Pre-Service Educator Satisfaction with University Training

Question	Descriptive Changes			Wilcoxon Signed-Rank Test	
	Positive	Negative	No Change	z score	p value
Q1	20	2	6	3.56	< .001*
Q2	20	2	6	3.45	.001*
Q3	20	2	6	3.48	< .001*

Note. * = p < .05

Pre-service educators reported a positive experience with the service-learning project, improved satisfaction in their teacher training, and efficacy teaching CWD. Of particular note was the way in which PSEs' blog responses about their educational satisfaction paralleled the affective domain hierarchy of Bloom's Taxonomy (Krathwohl, Bloom, & Masia, 1964). Responses evolved from expressions of immediate personal impacts of the service-learning project, to an awareness of the impact of others, to reflections of personal growth and betterment, and finally to discussions of how the service-learning experience changed their characterization.

Typical early responses from PSE included the following:

- "Overall, I feel that this has been a great experience and look forward to the next weeks."
- "I am getting better and I think CAPES! has helped me with that."
- "This is a really great question! I have been pondering on it this week."

Early on (i.e., during weeks one and two), it was apparent that PSEs recognized the value of the service-learning project to their individual learning, and their responses reflected a general awareness of the project's impact. Yet, as CAPES! progressed, so too did the PSEs' reflections—from personal to interpersonal—during weeks three to five:

- "The biggest gain has not only come from being with different students over the past four weeks, but also all of my peers. I have learned more from them and how they approach their students than I ever have when it comes to teaching kids with disabilities. Their influence helped me tremendously with G. this week."
- "I really appreciate the experiences I am getting from this program."
- "The kids get a lot of from this program but so do the college students. I have learned so much it's amazing to think it's only been five weeks."

Near the end of CAPES!, PSE reflections focused primarily on their changes as teachers and people, and what they could have done differently. This shift parallels the valuing and organization portion of Bloom's affective domain:

- "My only regret is that I wish I would have followed Dr. Williams' teachings and implemented it earlier."
- "Each week I have walked away having learned something new and having realized a seemingly endless amount of new things I want to learn."

These common responses highlighted the notion of bettering oneself in order to teach and to assist others more effectively and meaningfully. At the end of the service-learning program, PSE reflections grew in both depth and perspective about their educational satisfaction and how CAPES! had changed not only their lives but the lives of everyone involved—and what that meant for them as teachers. This shift paralleled the internalizing values of Bloom's affective domain. As one PSE shared:

> The CAPES! program has been very beneficial—it is almost impossible to write down everything I have learned. Yet, I think the most valuable lesson I have learned thus far is my newfound realization of the amazing brilliance of the human spirit. It is incredibly easy to fall victim to

> taking things for granted and being a selfish and ignorant individual. However, J. has switched my mindset from one of seeing the glass half-empty, to a glass that is half-full. I have watched movies and read books that contain amazing, heroic characters. In spite of this, nothing beats the interactions that I am able to experience with a real-life superhero—J.! His child-like innocence is an inspiration to live my life with sincerity and purity. On top of this, J. is enthusiastic and energetic, despite his disability. J. seems to throw himself towards life, rather than run away from it. He finds joy in the ordinary. Also, even though J. sometimes seems uninterested in certain activities, he NEVER complains. Most people grumble and whine about everything! I have never heard the slightest bit of grievance from the lips of J. During every CAPES! session, I feel as though J. is the teacher and I the student.

Discussion

Interpretation of the survey and blog responses suggests that a community-based service-learning program (CAPES!) had a significant positive impact on PSEs' understanding, confidence, willingness, and skill level relative to teaching and including CWD in their future classrooms. This finding is especially meaningful because it not only signifies that these PSEs are better prepared to meet the needs of their future students, but also validates prior research (Lucas & Frazier, 2014; Melekoglu, 2013) regarding the positive impact service-learning can have on PSEs. However, caution must be exercised when considering the low internal consistency of the understanding domain. Future research will need to first address the questions used within the understanding domain and then determine whether or not these positive outcomes are maintained over time and are generalizable to in-service teachers.

The three questions around which no significant differences were found further warrant analysis. Responses to question 3 in the understanding domain (i.e., "The size of the class needs to be lowered when students with disabilities are included."), question 5 in the understanding domain (i.e., "The inclusion of students with special needs into regular classes will take much of the teacher's time and attention from typically developing students."), and question 2 in the willingness domain (i.e., "I am willing to include students with emotional or behavioral disorders in my classroom.") parallel Cook et al.'s (2007) finding that general educators were more likely to reject CWD due to the amount of time spent on behavioral rather than instructional interactions. One way to mitigate this effect may be to include further instruction/training during CAPES! around how to effectively manage behavioral concerns. These concerns were previously identified in PSEs' blog responses within the skills domain.

The results further corroborate the findings of Carroll et al. (2003) that service-learning increases the maturity (i.e., understanding domain) and confidence level (i.e., confidence domain) of PSEs. While both studies revealed positive findings, the method of instruction utilized in Carroll et al. (i.e., lectures and videos) differed from the method of instruction utilized in this current study (i.e., community engagement). Future analysis will need to be conducted on whether the effects of one method are greater than the other.

Additionally, the results of this study build upon the findings of Campbell et al. (2003), who showed that students improved their knowledge about a disability and formed positive attitudes about inclusion and disability. However, in Campbell's study, only one disability type was identified and utilized for instruction, whereas in the current study, children with multiple types of developmental disabilities (e.g., Down syndrome, autism spectrum disorder, auditory processing, cerebral palsy, etc.) were included. Our findings suggest that PSEs can increase their awareness of multiple types of disabilities within a shorter timeframe than reported by Campbell et al. (2003). What remains to be studied is whether or not the same types of growth can occur within a timeframe shorter than 10 weeks.

Finally, the limitations of the current study must be addressed. CAPES! provides a one-on-one learning experience for PSEs. This may not be feasible for other colleges and programs attempting to replicate the findings of this study due to decreasing enrollments in educator preparation programs. The

university where this study was conducted has seen a slight decrease in enrollment, which necessitated the solicitation of previous CAPES! PSEs to help maintain the one-on-one ratio. Future studies should ascertain if a higher children-to-PSE ratio (e.g., two-to-one) would produce similar findings and thus make it more feasible to replicate the program across other institutions. Another limitation lies in the ages of the PSEs. With an average age of 24 years, the findings may not capture a representative sample of the typical PSE population. Similarly, the age group of the CWD who participated in CAPES! was not representative of the surrounding school district demographics.

Despite these limitations, however, this study's findings are promising. At the time of this writing, no other studies had been identified in the review of the literature wherein a community-based program was specifically created to measure the effects on PSEs' understanding, confidence, willingness, skill level, and educational satisfaction around the beliefs and attitudes toward teaching and including CWD. CAPES! has been and will continue to provide these opportunities for PSEs to improve their overall abilities to work with CWD in their future classrooms.

Author Note

James Zagrodnik, Department of Health Promotion and Human Performance, Weber State University; Natalie A. Williams, Department of Teacher Education, Weber State University; Patrick A. Leytham, School of Education, Touro University Nevada.

Correspondence regarding this article should be addressed to Dr. James Zagrodnik, Weber State University, Health Promotion and Human Performance, 1435 Village Drive Ogden, UT, 84408-2801. Phone: (801) 626-7084. E-mail: jameszagrodnik@weber.edu

References

Alger, C. (2006). "What went well, what didn't go so well": Growth of reflection in pre-service teachers. *Reflective Practice: International and Multidisciplinary Perspectives*, *7*, 287-301. doi:10.1080/14623940600837327

Alquraini, T. A. (2012). Factors related to teachers' attitudes towards the inclusive education of students with severe intellectual disabilities in Riyadh, Saudi. *Journal of Research in Special Educational Needs*, *12*, 180-182. doi:10.1111/j.1471-3802.2012.01248.x

Ash, S. L., & Clayton, P. H. (2009). *Learning through critical reflection: A tutorial for service-learning students (Instructor version)*. Raleigh, NC: Authors.

Bain, J. D., Ballantyne, R., Mills, C., & Lester, N. C. (2002). *Reflecting on practice: Student teachers' perspectives*. Flaxton, Queensland, Australia: Post Pressed.

Brownlee, J., & Carrington, S. (2000). Opportunities for authentic experience and reflection: A teaching programme designed to change attitudes towards disability for pre-service teachers. *Support for Learning*, *15*, 99-105. doi:10.1111/1467-9604.00157

Campbell, J., Gilmore, L., & Cuskelly, M. (2003). Changing student teachers' attitudes towards disability and inclusion. *Journal of Intellectual and Developmental Disability*, *28*, 369-379.

Carroll, A., Forlin, C., & Jobling, A. (2003). The impact of teacher training in special education on the attitudes of Australian preservice general educators towards people with disabilities. *Teacher Education Quarterly*, *30*(3), 65-79.

Cawley, J., Hayden, S., Cade, E., & Baker-Kroczynski, S. (2002). Including students with disabilities into the general education science classroom. *Exceptional Children*, *68*, 423-435.

Celio, C. I., Durlak, J., & Dymnicki, A. (2011). A meta-analysis of the impact of service-learning on students. *Journal of Experiential Education*, *34*, 164-181.

Chambers, D. J., & Lavery, S. (2012). Service-learning: A valuable component of pre-service teacher education. *Australian Journal of Teacher Education*, *37*(4), 128-137. doi:10.14221/ajte.2012v37n4.2

Cook, B. G., Cameron, D. L., & Tankersley, M. (2007). Inclusive teachers' attitudinal ratings of their students with disabilities. *Journal of Special Education*, *40*, 230-238.

Conway, J. M., Amel, E. L., & Gerwien, D. P. (2009). Teaching and learning in the social context: A meta-analysis of service learning's effects on academic, personal, social, and citizenship outcomes. *Teaching of Psychology*, *36*, 233-245.

de Boer, A., Pijl, S. J., & Minnaert, A. (2011). Regular primary schoolteachers' attitudes towards inclusive education: A review of the literature. *International Journal of Inclusive Education*, *15*, 331-353.

DeSimone, J. R., & Parmar, R. S. (2006). Middle school mathematics teachers' beliefs about inclusion of students with learning disabilities. *Learning Disabilities Research and Practice*, *21*, 98-110.

Domangue, E., & Carson, R. L. (2008). Preparing culturally competent teachers: Service-learning and physical education teacher education. *Journal of Teaching in Physical Education*, *27*, 347-367.

Eyler, J. (2002). Reflection: Linking service and learning—linking students and communities. *Journal of Social Issues*, *58*, 514-534.

Eyler, J., Giles, D. E., Jr., Stenson, C. M., & Gray, C. J. (2001). At a glance: What we know about the effects of service learning on college students, faculty, institutions, and communities, 1993-2000 (3rd edition). *Higher Education*, *139*. Retrieved from http://digitalcommons.unomaha.edu/slcehighered/139

Forlin, C., & Chambers, D. (2011). Teacher preparation for inclusive education: Increasing knowledge but raising concerns. *Asia-Pacific Journal of Teacher Education*, *39*, 17-32. doi:10.1080/1359866X.2010.540850

Galvan, C., & Parker, M. (2011). Investigating the reciprocal nature of service-learning in physical education teacher education. *Journal of Experiential Education*, *34*, 55-70. doi:10.1177/105382591103400105

Gemmell-Crosby, S., & Hanzlik, J. R. (1994). Preschool teachers' perceptions of including children with disabilities. *Education and Training in Mental Retardation and Developmental Disabilities*, *29*, 279-90.

Giffing, M. D., Warnick, B. K., Tarpley, R. S., Williams, N. A., (2010). Perceptions of agriculture teachers toward including students with disabilities. *Journal of Agricultural Education*, *51*(2), 102-114. doi:10.5032/jae.2010.02102

Gil-Gómez, J., Chiva-Bartoll, Ó, & Martí-Puig, M. (2015). The impact of service learning on the training of pre-service educators. *European Physical Education Review*, *21*, 467-484.

Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*, 1277-1288.

Individuals with Disabilities Education Improvement Act of 2004, Pub. L. No. 108-446, 118 Stat. 2647 (2004). Retrieved from http://idea.ed.gov/

Krathwohl, D. R., Bloom, B. S., & Masia, B. B. (1964). *Taxonomy of educational objectives: The classification of educational goals. Handbook II: Affective domain*. New York: David McKay.

Lockeman, K. S., & Pelco, L. E. (2013). The relationship between service-learning and degree completion. *Michigan Journal of Community Service Learning*, *20*(1), 18-30.

Lucas, D., & Frazier, B. (2014). The effects of a service-learning introductory diversity course on pre-service teachers' attitudes toward teaching diverse student populations. *Academy of Educational Leadership Journal*, *18*(2), 91-124.

Male, D. B. (2011). The impact of a professional development programme on teachers' attitudes towards inclusion. *Support for Learning*, *26*, 182-186.

McLeskey, J., Hoppey, D., Williamson, P., & Rentz, T. F. (2004). Is inclusion an illusion? An examination of national and state trends toward the education of students with learning disabilities in general education classrooms. *Learning Disabilities Research and Practice*, *19*, 109-115.

McLeskey, J., Landers, E., Williamson, P., & Hoppey, D. (2012). Are we moving toward educating students with disabilities in less restrictive settings? *Journal of Special Education*, *46*, 131-140.

McMurtrie, D. H., Coleman, B. K., Ruppert, N., & Senn, G. J. (2014). The impact of service learning on middle level pre-service educators. *Current Issues in Middle Level Education*, *19*(1), 36-42.

Melekoglu, M. A. (2013). Examining the impact of interaction project with students with special needs on development of positive attitude and awareness of general education teachers towards inclusion. *Educational Sciences: Theory and Practice*, *13*, 1067-1074.

Mintz, J. (2007). Attitudes of primary initial teacher training students to special educational needs and inclusion. *Support for Learning*, *22*, 3-8. doi:10.1111/j.1467-9604.2007.00438.x

Peralta, L. R., O'Connor, D., Cotton, W. G., & Bennie, A. (2016). Pre-service physical education teachers' indigenous knowledge, cultural competency and pedagogy: A service learning intervention. *Teaching Education*, *27*, 248-266.

Phillips, W. L., Allred, K., Brulle, A. R., & Shank, K. S. (1990). The will and skill of regular education. *Teacher Education and Special Education*, *13*, 182-186. doi:10.1177/088840649001300308

Rattigan-Rohr, J., He, Y., & Murphy, M. B. (2014). Learning from struggling readers: The impact of a community-based service learning project on teacher preparation. *PRISM: A Journal of Regional Engagement, 3*, 99-118.

Scruggs, T. E., & Mastropieri, M. A. (1996). Teacher perceptions of mainstreaming/inclusion, 1958-1995: A research synthesis. *Exceptional Children*, *63*, 59-74.

Seçer, Z. (2010). An analysis of the effects of in-service teacher training on Turkish preschool teachers' attitudes towards inclusion. *International Journal of Early Years Education*, *18*, 43-53.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, *22*, 63-75.

Shoffner, M. (2009). Personal attitudes and technology: Implications for preservice teacher reflective practice. *Teacher Education Quarterly*, *36*(2), 143-161.

Smith, P. (2007). Have we made any progress? Including students with intellectual disabilities in regular education classrooms. *Intellectual and Developmental Disabilities*, *45*, 297-309. doi:10.1352/0047-6765(2007)45[297:HWMAPI]2.0.CO;2

Stiler, G. M., & Philleo, T. (2003). Blogging and blogspots: An alternative format for encouraging reflective practice among pre-service teachers. *Education*, *123*(4), 789-797.

Symeonidou, S., & Phtiaka, H. (2009). Using teachers' prior knowledge, attitudes and beliefs to develop in-service teacher education courses for inclusion. *Teaching and Teacher Education*, *25*, 543-550.

Tice, K. C., & Nelson, L. P. (2015). Promises and pitfalls of service-learning in teacher preparation: Lessons from longitudinal research. In V. Jagla, A. Furco, & J. Strait (Eds.), *Service-learning pedagogy: How does it measure up?* (pp. 83-103). Charlotte, NC: Information Age Publishing.

U.S. Department of Education. (2015). *37th annual report to Congress on the implementation of the Individuals with Disabilities Education Act, 2015*. Washington, DC: Author.

Vickerman, P., & Coates, J. K. (2009). Trainee and recently qualified physical education teachers' perspectives on including children with special educational needs. *Physical Education and Sports Pedagogy*, *14*, 137-153.

Xie, Y., Ke, F., & Sharma, P. (2008). The effect of peer feedback for blogging on college students' reflective learning processes. *The Internet and Higher Education*, *11*, 18-25.

Yang, E., Anderson, K. L., & Burke, B. (2014). The impact of service-learning on teacher candidates' self-efficacy in teaching STEM content to diverse learners. *International Journal of Research on Service Learning in Teacher Education*, *2*, 1-46.

Yorio, P. L., & Ye, F. (2012). A meta-analysis on the effects of service learning on the social, personal, and cognitive outcomes of learning. *Academy of Management Learning and Education*, *11*, 9-27.