AN ABSTRACT OF THE DISSERTATION OF

Layne Case for the degree of Doctor of Philosophy in Kinesiology presented on June 3, 2021.

Title: An Updated View of University-based Service-learning in Adapted Physical Activity: Instructor-reported use of Best Practices, Challenges, and Supports.

Abstract approved: _____

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Adapted physical activity and education (APA/APE) service-learning has received considerable attention as a training tool to prepare undergraduate students, including preservice physical education teachers, to work with people with disabilities (Hodge, 1998; Rowe & Stutts, 1987; Taliaferro et al., 2015). Much of this research focuses on demonstrating the effects of service-learning on student outcomes, including improvements in attitudes toward people with disabilities (Case et al., 2020; Lee et al., 2020), self-efficacy to include children with disabilities, and perceived competence to teach (Hodge et al., 2002). Despite this focus on student experiences in the literature, there is little understanding and evaluation of other important components of service-learning, such as the use of evidence-based and recommended practices, alignment with disability-centered programming, and exploration of course instructor perspectives. While service-learning is strongly advocated for as a training tool in educational settings, it is important to evaluate service-learning from multiple perspectives in order to better understand its success and improve training efforts within APA/APE. Therefore, the purpose of this dissertation study is to gain an updated examination of adapted physical activity service-learning at U.S. universities, while evaluating the use of various best-practice recommendations and exploring instructor-rated challenges and supports to service-learning. To

achieve this purpose, this dissertation was divided into two separate studies. The first study (Chapter II) focuses on examining the alignment between existing university-based APA/APE service-learning and recommendations for student-centered best-practices, disability-centered best practices, and best-practices for favorable attitude change toward people with disabilities. Participants (n = 165) included instructors of APA/APE undergraduate courses with a service-learning component (n = 159) or facilitators of APA/APE service-learning at their university (n = 6). Participants completed an online survey that measured information about the use of best-practice recommendations from supporting literature (Case et al., 2020; Drum et al., 2009; Pangelinan et al., 2018; Whitley, 2014). The results indicate that APA/APE service-learning in the U.S. use significantly more student-centered recommendations than disability-centered (Z = -10.45, p < .001). In addition, the odds of implementing attitude-change activities did not differ between service-learning with and without attitude-change objectives (OR = 1.14, p = .663, 95% CI [0.64, 2.04]). Implications and future research directions were discussed in relation to increasing consideration of and compliance with disability-centered best-practices in APA/APE training. Recommendations were made for instructors and service-learning facilitators to carefully designing service-learning to meet the target objectives. The purpose of the second study (Chapter III) was to explore the challenges and supports to service-learning among APA/APE course instructors. One hundred and sixty-five participants completed an online survey that measured various instructor-rated challenges and supports as well as service-learning programming responses to the COVID-19 pandemic. Findings indicate that, on average, the most critical challenges to service-learning all related to lack of time, while the most critical supports related to adequate planning and high-quality staff. Interestingly, the only university or instructor characteristic examined in this study that contributed to differences in mean ratings of challenges to service-learning was current teacher certification (F(1, 163) = 4.353, p = .038, η^2

= 0.03). No differences in mean ratings of supports were found based on any university or instructor characteristic. In addition, based on the two separate binary logistic regression analyses, no differences were found in programming response to COVID-19 based on mean challenge ratings (OR = 0.99, *p* = 0.93, 95% CI [.704, 1.38]). However, results revealed differences in program response based on mean support ratings (OR = 1.37, SE = .15, *p* = 0.04, 95% CI [1.02, 1.84]), suggesting a 1.37 increase in the odds of implementing virtual programming for every one-unit increase in mean support ratings among programs that stopped in-person service-learning. Collectively, findings from these two studies have several important implications for service-learning evaluation and intervention in APA/APE. Service-learning facilitators should continue to use practices that maximize student training—however, efforts must be taken to prioritize disability-centered best practices moving forward. In addition, these findings highlight the importance of maximizing supports for service-learning. Due to lack of time challenges, course instructors and facilitators should consider using natural openings in time, including temporary changes or pauses in programming due to COVID-19, for program evaluation and redesign.

An Updated View of University-based Service-learning in Adapted Physical Activity: Instructor-reported use of Best Practices, Challenges and Supports

by
Layne Case

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APPROVED:

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Director of the School of Biological and Population Health Sciences

Dean of the Graduate School

I understand that my dissertation will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my dissertation to any reader upon request.

Layne Case, Author

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CONTRIBUTION OF AUTHORS

Layne Case is the lead author of this dissertation. Layne conceptualized the idea, designed the study, identified and recruited potential participants, led data collection, analyzed and interpreted the results, and wrote the manuscripts. Layne will be held responsible for the peer-review publication process when the manuscripts are ready for publication.

Dr. Sam Logan and Dr. JK Yun are major contributors to this dissertation. Both Drs. Logan and Yun assisted in the conceptualization of the idea, contributed to the study design, assisted in interpretation of the results, provided revisions and suggestions on several drafts of the paper, and reviewed the final dissertation document before submission.

Dr. Megan MacDonald and Dr. Bridget Hatfield are contributing authors to this dissertation. Drs. MacDonald and Hatfield each reviewed and provided feedback on the conceptualization of the study idea and the study design.

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CHAPTER I. GENERAL INTRODUCTION

Service-learning is an experience-based educational tool commonly used in the United States (Association of American Colleges and Universities, 2007). Traditionally, service-learning aims to provide individuals (e.g., college students) with hands-on instructional and learning opportunities necessary to gain personal insight, apply knowledge and skills, and understand social issues beyond the classroom (National Youth Leadership Council, 2008). Over time, service-learning has been strongly advocated for and is well accepted within university settings (Kenworthy-U'Ren, 2008). As such, service-learning has been utilized within multiple academic disciplines and professional trainings, such as psychology (e.g., Carlson & Witschey, 2018), health care (e.g., Watters et al., 2015), special education (e.g., Santistevan Matthews et al., 2007), and physical education teacher education (PETE; Hodge et al., 2002).

Service-learning within PETE and Kinesiology programs has received considerable attention as a tool to prepare undergraduate students, including preservice physical education teachers, to teach and work with people with disabilities (Hodge, 1998; Rowe & Stutts, 1987; Taliaferro et al., 2015). For example, the majority of Adapted Physical Activity (APA) or Adapted Physical Education (APE) courses include a required service-learning component, or practicum, that involves teaching physical education (PE) or sport to children with disabilities (Kwon, 2018; Piletic & Davis, 2010). While PE has been a commonly reported focus, service-learning in the field may involve a variety of objectives and content areas, including physical activity, Special Olympics, rehabilitation, and resistance training (Lee et al., 2020; Li & Wang, 2013; Shields & Taylor, 2014). Similarly, while PETE students have notably been involved in APA/APE service-learning (Hutzler et al., 2019), programs may provide experiential opportunities to a wide variety of university students, such as APA/APE, Kinesiology, health care, and physiotherapy majors (Bergman & Hanson, 2000; Schoffstall & Ackerman, 2007).

Due to the hands-on teaching experiences and opportunities for contact with people with disabilities, service-learning is often recognized as a key component of adequately training future PE and APA professionals (Hodge et al., 2003; Hutzler et al., 2019). A large body of literature focuses on understanding the impacts of APA service-learning training on undergraduate students, including preservice physical educators (Case et al., 2020; Hodge et al., 2002; Lee et al., 2020). Several studies report that APA service-learning has elicited several favorable improvements in undergraduate student outcomes, including attitudes toward disability, attitudes toward inclusion, teacher preparedness, and perceived competence (Hodge et al., 2002; Schoffstall & Ackerman, 2007; Shields & Taylor, 2014; Taliaferro et al., 2015). In addition, researchers have suggested that the quality of service-learning can contribute to differences in effects, with certain program characteristics contributing to more favorable outcomes than others (Case et al., 2020; Hodge et al., 2002, 2003). These findings have led to new questions and recommendations for future studies to identify and evaluate the use of effective practices in APA service-learning (Case et al., 2020; Taliaferro & Bulger, 2020).

In particular, there has been considerable research interest in the effects of service-learning on attitudes toward people with disabilities among college students (Hodge & Jansma, 1999; Schoffstall & Ackerman, 2007; Shields & Taylor, 2014). For example, Shields and Taylor (2014a) examined the impact of an 8-week, twice-weekly walking program on the attitudes of 16 physiotherapy students working with adults with Down syndrome. Findings indicate that students experienced positive changes in attitudes toward disability based on the Interaction with Disabled Persons scale. Schoffstall and Ackerman (2007) similarly found that enrollment in an adapted physical education course and associated laboratory experience elicited positive changes in attitudes toward teaching people with disabilities among undergraduate students at a faith-based university. Additionally, Hodge, Davis, Woodard, and Sherrill (2002) compared the

effects of on-campus and off-campus service-learning on PETE student attitudes and perceived competence toward teaching children with physical and intellectual disabilities. While the authors found that participants' perceived competence improved significantly in response to both practicum types, the results showed that attitude scores did not significantly differ from pre-test to post-test in either practicum type. These studies collectively suggest that service-learning may prompt favorable changes in attitudes among undergraduate students but also highlight the varying effects and program characteristics associated with service-learning at different universities.

Due to the variability in outcomes seen among individual studies, research has been conducted to summarize the effects of APA service-learning (Case et al., 2020). In a recent meta-analysis, Case and colleagues (2020) reported that service-learning has positive but relatively small effects on attitudes toward people with disabilities. In addition, the authors found that programs with certain characteristics, such as voluntary involvement, common goals between students and people with disabilities, no associated lecture, and off-campus, elicited larger improvements than programs without those characteristics. The authors suggested multiple potential explanations for these findings, such as misalignment between the selected program activities and potential for attitude change and low research quality. Regardless, the variability in outcomes among the studies speaks to the differences in program objectives, course characteristics, university-specific challenges, and populations that likely make up service-learning within the APA/APE fields (Whitley, 2014). However, descriptions of service-learning within the included studies were relatively limited and it was difficult to evaluate differences in programing solely from the studies.

In addition to the low effect size, the quality of hands-on training, including service-learning, within APA/APE has recently been questioned by scholars in the field (Case et al., 2020;

Haegele et al., 2020; McNamara et al., in press). Minimal research has been done that would allow for an evaluation of service-learning and practicum across the APA/APE field. However, two studies that have examined the service-learning and practicum components associated with undergraduate APA/APE courses provide some insight (Kwon, 2018; Piletic & Davis, 2010). Piletic and Davis (2010) surveyed 136 PETE faculty instructors about the content of their Introduction to APE courses, including the practicum. Using an updated version of Piletic and Davis's (2010) instrument, Kwon (2018) surveyed 75 APA/APE course instructors about their course content, practicum information, and the ways in which disability was infused into the PETE curriculum. These studies provide several details (e.g., program objective, setting, contact time, type of interaction, student evaluation) that describe the hands-on experience with people with disabilities that many PETE students receive. However, these studies lack more intricate information regarding the use of effective practices or quality of programming for undergraduate students and people with disabilities, which has recently been brought into question.

Across multiple disciplines, an abundance of literature outlines recommendations for improving service-learning (Conway et al., 2009; Drum et al., 2009; Pangelinan et al., 2018; Whitley, 2014; Yorio & Ye, 2012). In particular, a primary interest among scholars has focused on maximizing the educational experience and benefit of service-learning for university students. Frequent recommendations have therefore been made for activities such as reflection, comprehensive training, feedback and evaluation, and autonomous involvement, among others (Niemiec & Ryan, 2009; Whitley, 2014; Yorio & Ye, 2012). In contrast, less attention has been given toward understanding the experiences and improving the quality of service-learning for the communities being served, such as people with disabilities (Naturkach & Goodwin, 2019). In fact, Naturkach and Goodwin (2019) highlighted that people with disabilities involved in APA

service-learning did not feel seen or valued as mutual, collaborative partners within programming. While little is known about the experiences of people with disabilities in service-learning, guidelines have been created for facilitators to follow in order to be inclusive of disability within health promotion programs, such as APA programs (Drum et al., 2009). For example, Drum and colleagues have emphasized the importance of including people with disabilities within program planning and providing opportunities for personal choice.

In addition to recommendations for university students and people with disabilities populations, numerous strategies have also been suggested to meet specific training goals within service-learning. Improving favorable attitudes toward people with disabilities, for example, has consistently been reported as an important objective for undergraduate students in APA/APE service-learning (Hutzler et al., 2019; Piletic & Davis, 2010). Multiple considerations are left to be explored in terms of how service-learning can effectively improve attitudes (McNamara et al., in press). However, to favorably change attitudes, researchers recommend that activities such as reflection and disability awareness training should be integrated within service-learning (Hodge et al., 2003; Roth et al., 2018). In addition, the Contact Theory (Allport, 1954) suggests that four optimal conditions—personal interaction, common goals, equal status between groups, and support of authority—should govern the contact between groups in order to maximize attitude change (Pettigrew & Tropp, 2006, 2008). Therefore, strategies that promote autonomy and limit one group having power over the other are important (Carlson & Witschey, 2018; Dunn, 2015). The amount of effective practices that the literature recommends for service-learning highlights the potential for designing programming that trains undergraduate students, includes the disability community, and contributes to important outcomes, such as attitude change. To date, however, there has been no clear examination of the extent to which APA/APE service-learning is following any best-practice recommendations.

In addition to the use of best-practices, the quality of service-learning may also be influenced by those who design or contribute to programming, such as course instructors. Unfortunately, from the literature, we know very little about service-learning from the perspectives of APA/APE course instructors. In their examinations of APE coursework, Piletic and Davis (2010) and Kwon (2018) only offered information related to the educational background (i.e., highest degree and area of specialization) of the course instructors in their samples. These demographics certainly offer insight into the training commonalities and potential gaps among APE instructors. Obtaining additional information, however, will be helpful in understanding the diverse individuals within the field as well as how to support instructors to design high-quality service-learning for their students. For example, previous research has indicated that university faculty, specifically teacher educators, can experience serious challenges to successfully using service-learning within teacher education (Anderson & Pickeral, 2000). Identifying the challenges or barriers to service-learning, as well as the supports or successful strategies, may therefore have important implications for improving service-learning and achieving its goals within APA/APE. Moreover, additional instructor demographic variables may allow for exploration of how to better support instructors who may be experiencing greater or unique barriers.

Overall, APA/APE service-learning has contributed to desirable benefits, including increases in favorable attitudes toward disability among undergraduate students. However, the variability in program characteristics and heterogeneity in effect sizes seen across individual studies raises concern about the quality of programming. Therefore, aside from measuring the effects of service-learning intervention, it is important to evaluate the use of effective strategies and best-practice recommendations across the APA/APE field. Furthermore, due to the unique

and pivotal positions of course instructors to design service-learning, exploring the potential challenges and supports that they may experience is valuable.

Research Objective and Specific Aims

The overall *objective* of this dissertation study is to gain a comprehensive understanding of university-based APA/APE service-learning, including program characteristics, use of best practices, and instructor-rated challenges and supports. Within this objective, this dissertation study involves several research aims that compile two separate manuscripts.

Manuscript 1

Specific Aim 1.1: Describe the proportion of service-learning that report to following best-practice recommendations that are (a) student-centered, (b) disability-centered, and (c) centered around favorable changes in attitudes toward people with disabilities.

Question 1.1a: What proportion of service-learning reports to following none, minimal, some, or all student-centered best-practice recommendations?

Question 1.1b: What proportions of service-learning report to following none, minimal, some, or all disability-centered best-practice recommendations?

Question 1.1c: What proportions of service-learning report to following none, minimal, some, or all best-practice recommendations for favorable changes in attitudes toward people with disabilities?

Specific Aim 1.2: Examine the differences between the implementation of student-centered best-practice recommendations versus disability-centered best-practice recommendations.

Hypothesis: More student-centered best-practice recommendations for service-learning will be implemented compared to disability-centered recommendations.

Specific Aim 1.3: Examine the extent to which attitude change objectives contribute to differences in the implementation of best-practice recommendations for favorable changes in attitudes.

Hypothesis: There are no differences in the odds of implementing activities that support attitude change between programs that do and do not report attitude change objectives.

Manuscript 2

Specific Aim 2.1: Identify the (a) challenges and (b) supports to service-learning among APA/APE course instructors.

Question 2.1a: What are the most critically rated challenges to service-learning among course instructors?

Question 2.1b: What are the most critically rated supports to service-learning among course instructors?

Specific Aim 2: Evaluate the influence of university type, university region, instructor major, teacher certification, and instructor role in service-learning on the ratings of (a) challenges and (b) supports to service-learning?

Hypothesis 2.2a: Significant differences in (a) mean challenge and (b) mean support ratings will be found between instructors from public versus private, not-for-profit universities.

Hypothesis 2.2b: Significant differences in (a) mean challenge and (b) mean support ratings will be found among instructors from universities of different geographical regions.

Hypothesis 2.2c: Significant differences in (a) mean challenge and (b) mean support ratings will be found between instructors with and without majors in APA or APE.

Hypothesis 2.2d: Significant differences in (a) mean challenge and (b) mean support ratings will be found between instructors with different primary roles in service learning (faculty role, instructor of course, other).

Hypothesis 2.2e: Significant differences in (a) mean challenge and (b) mean support ratings will be found between instructors with and without active teaching certifications.

Specific Aim 3: Examine the relationship between (a) challenges and (b) perceived supports and virtual/remote programming in response to COVID-19?

Hypothesis: Mean challenge ratings among instructors will contribute to significant differences in the odds of virtual/remote programming in response to COVID-19.

Hypothesis: Mean support ratings will contribute among instructors to significant differences in the odds of virtual/remote programming in response to COVID-19.

The rationale for each of the specific aims and hypotheses are further detailed in the following two chapters.

Assumptions and Delimitations

In this study, we assumed the following:

1. Study participants are current or previous instructors of undergraduate APA/APE courses at U.S. universities. In order to address this assumption, we added screening questions at the start of the survey and excluded cases in which participants answered that they were not previously or currently an instructor of an APA or APE related course.
2. Study participants answered the survey questions honestly.
3. Study participants are involved enough in service-learning at their university to accurately answer the survey questions.

4. The challenge and support items adapted from Anderson and Pickeral (2000) accurately represent existing challenges and supports to service-learning within APA/APE.

We have also set the following delimitations in the proposed study:

1. Participants are current or previous instructors of undergraduate APA/APE courses with a service-learning component or involved in APA/APE service-learning at their university. These delimitations were chosen based on the assumption that instructors and service-learning facilitators are involved in APA/APE service-learning and able to answer questions about their respective programs.
2. Best-practice recommendations in this study were delimited to (1) student-centered best-practices, (2) disability-centered best-practices, and (3) best-practices for favorable attitude changes toward people with disabilities. Research outlines many best-practices and there are additional ways in which best-practice recommendations can be thematically grouped. The three types of best-practices were chosen for this study based on previous literature that questions the extent to which similar best practices are implemented within APA/APE service-learning.

Limitations

1. A pre-existing, quantitative survey that was developed for service-learning among teacher educators (Anderson & Pickeral, 2000) was used for this study and therefore may leave out important issues relevant to APA/APE. The language and items of the survey were adapted to increase the relevance to APA/APE service-learning within undergraduate courses and piloted by reviewers who have expertise in this area. However, it is possible that there are other, unique challenges and supports that the participants in this study were unable to address and researchers were unable to explore due to the survey.

2. Differences in terminology used to describe service-learning across the field may limit the specificity of our findings to APA/APE service-learning. Terminology such as *practicum*, *experiential learning*, *community engagement*, and others appear to be used interchangeably with service-learning in the literature. For this study, service-learning was broadly defined to gather more information about university-based opportunities for hands-on, APA/APE training. Due to differences in interpretation of service-learning among respondents, the specificity of our findings to service-learning may be limited. To minimize the potential for this limitation, the survey explained that the programming of interest relates to university-based service-learning and provided examples.

Operational Definitions

The following terms will be operationally defined in this study as follows:

- Adapted physical activity service-learning
    - Service-learning that targets or trains college students and promotes physical activity, physical fitness, physical education, or sport engagement to children, youth, and/or adults with various disabilities (Case et al., 2020).
    - This includes additional terminology that may be used to describe university-based experiential learning in APA/APE, such as practicum.
- Undergraduate Students
    - Undergraduate students who participate in a university-based, APA/APE service-learning
- People with disabilities
    - People, including children and adults, with disabilities who participate in and receive services from university-based, APA/APE service-learning

- Best-practice recommendations
    - A term, used in previously literature, that represents recommendations for important, high-quality, evidence-based, or effective strategies that are drawn from research and advocated by scholars as best practice (Johnson et al., 2015; Kocman & Weber, 2018; Levac et al., 2015).
- Student-centered best-practice recommendations
    - Recommendations for best-practices intended to maximize student benefit in service-learning (Pangelinan et al., 2018; Whitley, 2014; Yorio & Ye, 2012). The specific best practices in this study were defined as voluntary involvement, formal student evaluation, reflection, and training, and based on past literature.
- Disability-centered best-practice recommendations
    - Recommendations for best-practices intended to maximize the benefit of APA/APE service-learning for people with disabilities (Drum et al., 2009). The specific best practices in this study were defined as involvement in planning, financial support, process evaluation, and opportunities for choice, and based on past literature.
- Best-practice recommendations for favorable attitude change toward people with disabilities
    - Recommendations for best practices intended to maximize favorable change in attitudes toward people with disabilities among college students (Case et al., 2020; Hodge et al., 2003; Pettigrew & Tropp, 2006). The specific best practices in this study were defined as in-person contact, training, reflection, equal or more opportunities for choice among people with disabilities, and voluntary involvement of college students.

- COVID-19
    - COVID-19 is a new, highly contagious coronavirus discovered in 2019 and thought to spread mainly from person-to-person contact. As a result of COVID-19, policies were enacted to limit in-person contact, such as virtual or remote education and social distancing (Centers for Disease Control and Prevention, 2021).
- Virtual or remote programming
    - Virtual service-learning delivery models, as opposed to traditional, in-person service-learning. The goal of virtual service-learning programming is to continue to provide quality physical activity programming to people with disabilities, despite policies against in-person contact (Blagrave et al., 2021).

CHAPTER II. FIRST MANUSCRIPT

Alignment of university-based adapted physical activity service-learning with best-practice recommendations

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Abstract

The purpose of this study was to evaluate the use of several best-practice recommendations within university-based service-learning associated with adapted physical activity/education (APA/APE) undergraduate courses. Participants included 165 instructors of APA/APE courses with a service-learning component and/or involvement in APA/APE service-learning at their university. Participants completed an online survey designed for this study to evaluate the use of three types of best-practice recommendations, including student-centered best-practices, disability-centered best-practices, and best-practices for favorable attitude change toward people with disabilities. Findings indicate that significantly more student-centered best-practice recommendations are implemented compared to disability-centered recommendations (Z = -10.45, p < .001). In addition, results of a binary logistic regression show there are currently no differences in the odds of implementing best-practice attitude change recommendations among programs with and without attitude change objectives (OR = 1.14, p = .663, 95% CI [0.64, 2.04]). The findings from this study have several implications for evaluation and intervention within APA/APE service-learning at U.S. universities. Course instructors and service-learning facilitators should aim to increase compliance with disability-centered best-practices and consider the pedagogical alignment between target learning objectives and service-learning activities within their respective programs.

Keywords: pre-service, experiential learning, practicum, best practices, higher education, adapted physical education

Alignment of university-based adapted physical activity service-learning with best-practice recommendations

Service-learning is an educational strategy strongly advocated for in academic settings that allows university students to directly engage in content beyond the classroom (Yorio & Ye, 2012). Many adapted physical activity/education (APA/APE) undergraduate courses include service-learning, or similar practicum components, to provide students with opportunities to teach or work directly with people with disabilities in a physical activity setting (Kwon, 2018; Piletic & Davis, 2010). The effects of university-based APA/APE service-learning have received ample research attention, particularly in how they relate to undergraduate student outcomes (Folsom-Meek et al., 1999; Hodge et al., 2002, 2003; Hodge & Jansma, 1999; Lee et al., 2017, 2020; Stewart, 1990). For example, researchers have documented positive effects for students, such as improvements in attitudes toward people with disability (Case et al., 2020), increased perceived competence and self-efficacy to teach children with disabilities (Hodge et al., 2002; Taliaferro et al., 2015), and increased confidence to work with people with disabilities (Shields & Taylor, 2014). For these reasons, the hands-on, practical experiences that students gain through service-learning are highlighted as one of the most important components for training preservice physical educators (Hutzler et al., 2019; Perlman & Piletic, 2012).

Despite reported benefits, several researchers have recently questioned the quality of and use of best practices in APA/APE service-learning (Case et al., 2020; Hutzler et al., 2019; McNamara et al., in press). Moreover, the literature highlights the possibility that not all service-learning experiences are created equally or optimally. For example, findings from a recent meta-analysis by Case and colleagues (2020) report that the effects of APA/APE service-learning for undergraduate students vary across studies and that differences in program characteristics may influence outcomes. Specifically, the authors report that involvement in service-learning leads to positive, small improvements in college student attitudes toward disability, but considerable

heterogeneity is found among the included studies. The different effects on attitudes toward disability observed in the literature speak to the variability that likely exists among the objectives, training activities, and populations included in service-learning across universities (Hutzler et al., 2019; Whitley, 2014). Importantly, this variability may also highlight the potential for differences in the use of best practices. There are currently many best practices that scholars recommend, including those that are student-centered, disability-centered, or focused on achieving specific learning objectives (e.g., attitude change) in APA/APE service-learning (Case et al., 2020; Drum et al., 2009; Whitley, 2014). It is largely unclear, however, how these recommendations are followed within and across existing programs.

Many previous studies focus on student-centered outcomes within service-learning (Yorio & Ye, 2012) and several researchers have outlined components for maximizing student benefits (Pangelinan et al., 2018; Whitley, 2014). For example, opportunities for student reflection are consistently emphasized as a critical practice in service-learning, including within APA/APE (Hodge et al., 2003; Yorio & Ye, 2012). Reflection in service-learning allows students to identify their thoughts and emotions, consider their actions, and make connections to course content, and has elicited greater improvements in outcomes than service-learning without reflection (Conway et al., 2009). Opportunities for autonomy, such as voluntary involvement, self-directed activities, or choices, is also recommended as it may increase students' motivation to participate in service learning (Case et al., 2020; Whitley, 2014). In addition, factors related to providing students with support, including formal training and student evaluations throughout the experience, are suggested to enhance student learning (Pangelinan et al., 2018; RMC Research Corporation, 2008). While numerous variables are identified in the literature as important to consider for service-learning (e.g., see Whitley, 2014), these specific practices highlight some of the student-centered recommendations.

In comparison to literature that focuses on recommendations for university students, less attention has been given to improving service-learning for people with disabilities (Gent & Gurecka, 2001). Furthermore, minimal research on APA/APE service-learning has focused on outlining best practices or examining the experiences of people with disabilities compared to students (Naturkach & Goodwin, 2019). However, best-practice recommendations have been offered that aim to improve health programming, including for physical activity, for people with disabilities (Drum et al., 2009; Kraus & Jans, 2014). For example, although not specific to service-learning, Drum et al. (2009) released a series of guidelines, created by an expert panel that included people with disabilities, to follow to be inclusive of disability within community-based health programming. The authors recommend that health programs, including APA programs, should include a theoretical framework, implement process evaluation (e.g., satisfaction, feedback), involve people with disabilities and their families in planning, support opportunities for personal choice, be affordable, and use disability-appropriate outcome measures. The National Center for Health and Physical Activity for People with Disabilities (NCHPAD) advocates for similar practices for including people with disabilities in health and physical activity programs (Kraus & Jans, 2014). Because Drum et al.'s (2009) guidelines were created for community-based programs, some may argue whether or not they are relevant for use in university-based service-learning. However, essential components of service-learning are that it is mutually beneficial to all groups involved and provides a strong voice in programming to the recipients of service (Gent & Gurecka, 2001; National Youth Leadership Council, 2008). This includes using strategies that are centered around people with disabilities as much as those used to benefit students. Within APA/APE service-learning, the extent to which disability-centered recommendations are considered is unclear and it is unknown how often they are implemented in comparison to student-centered recommendations.

In addition to recommendations for students and people with disabilities, several best-practice recommendations exist for meeting the educational objectives of service-learning (Whitley, 2014). Improving favorable attitudes toward people with disabilities is consistently reported as an important service-learning and training objective in APA/APE (Hutzler et al., 2019; McNamara et al., in press; Piletic & Davis, 2010). Piletic and Davis (2010) indicate that the most common objective of APE practicum reported among 136 Physical Education Teacher Education (PETE) faculty was to provide hands-on experience to improve attitudes toward disability. Similarly, McNamara et al. (in press) more recently reported that, among a small sample of APE course instructors, a goal of the course was to expose students to people with disabilities to influence attitudes. Several activities, such as training and post-contact reflection, have been recommended to meet this objective (Hodge et al., 2003; Holsapple, 2012; Hunt & Hunt, 2004; Roth et al., 2018). In addition, Contact Theory (Allport, 1954), a prominent attitude theory, suggests that increasing contact between different groups may lead to more favorable attitudes and that optimal contact conditions, such as personal interaction, common goals, equal status between groups, and support of authority, may enhance the potential for change (Pettigrew & Tropp, 2006, 2008). A large body of studies that examine the effect of service-learning or other intervention on attitudes toward people with disabilities has been informed by Contact Theory (Conner, 2017; Pettigrew & Tropp, 2006). However, despite reports of attitude change objectives, researchers have questioned if APA/APE service-learning includes activities designed to improve attitudes. For example, Case et al. (2020) noted that, among 14 studies examining the effects of service-learning on attitudes toward disability, few studies reported the use of activities known to improve attitudes and it was unclear if the in-person contact included optimal contact conditions. Ultimately, the authors suggested that relevant best practices should be incorporated into programming if attitude change is a program or research objective.

To date, researchers that have summarized APA/APE service-learning and practicum have provided valuable, preliminary information for understanding these programs (Kwon, 2018; Piletic & Davis, 2010). However, these studies did not give explicit attention toward evaluating whether programs are using evidence-based or recommended practices. As a field, it is important to understand our use of (or lack thereof) best practices as this will supplement future evaluation and intervention efforts. In addition, the participant recruitment strategies of past studies were focused on identifying PETE program faculty as opposed to instructors of any course related to APA or APE. Therefore, in order to extend previous literature, the purpose of this study was to provide an updated status of university-based, APA/APE service-learning, including content, training, and involvement of undergraduate students and people with disabilities, using a robust participation identification strategy and evaluating the use of best-practice recommendations.

The specific research questions that guided this study were (1) what proportion of existing service-learning programs report to following recommendations for (a) student-centered best-practices, (b) disability-centered best-practices, and (c) best-practices for favorable changes in attitudes toward people with disabilities? (2) are there differences in the use of student-centered versus disability-centered best-practice recommendations? And (3) to what extent does program objective (e.g., improved favorable attitudes) contribute to differences in implementing activities that support change (e.g., attitude change)?

Method

Participants

This study included a total of 165 participants. All participants met the following inclusion criteria: (a) instructor of APA/APE course that includes a service-learning component and/or (b) person involved in APA/APE service-learning at their university. Approximately 159

(96.4%) of the sample identified themselves as a previous or current instructor of an APA/APE course with a service-learning component, and 6 (3.6%) identified as someone involved with an APA/APE service-learning program at their university. Participants from both public (n = 107, 64.8%) and private not-for-profit universities (n = 58, 35.2%) were included in this study. Participants were associated with universities from each major region of the U.S., with the most commonly reported regions including the Midwest (n = 55, 33.3%) and the Southeast (n = 36, 21.8%). Participants were most frequently between the ages of 35-44 (n = 55, 33.3%). The large majority of the sample identified as White (n = 146, 88.5%), not Hispanic or Latinx (n = 160, 97.0%), and as a person without disability (n = 138, 83.6%). Fifty-six participants majored in APE or APA while obtaining their highest academic degree (33.9%), and 45.5% (n = 75) of the sample had a current certification to teach Physical Education or APE in K-12 settings. Table 2.1 presents additional details of the sample.

****Insert table 2.1 here****

Participant Identification and Recruitment

Participants were identified using two strategies, including through: (1) the U.S. Department of Education's National Center for Education Statistics *College Navigator* tool and (2) word of mouth. *College Navigator* is a publicly available online tool (https://nces.ed.gov/collegenavigator) that can be used to explore information of nearly 7,000 U.S. universities and has been used in previous research (Barnett et al., 2015; Deaner et al., 2012). This database was strategically used to widen the scope of recruitment efforts to instructors of all APA/APE undergraduate courses and minimize recruitment of a biased sample of instructors (e.g., accredited PETE programs only) that has appeared in other literature on this topic. Additional information regarding the data collection process for *College Navigator* can be found elsewhere (Ginder et al., 2018).

In June 2020, a *College Navigator* search identified 869 public or private not-for-profit universities that offer Bachelor's and/or Advanced Degrees in programs related to Kinesiology, Physical Education Teacher Education, and/or Exercise Science. Each of the 869 university websites was systematically and exhaustively searched in an effort to identify if APA or APE course(s) are offered. Trained research assistants accessed each of the 869 universities' websites, the respective 2020-21 course catalog and/or the specific department's webpage to confirm that there was a relevant course. Instructor names and emails were identified by searching each university's class schedule and/or contacting department chairs. In order to limit the potential for duplicate information about APA/APE courses and associated service-learning, only one instructor per university was included as a potential participant if multiple instructors were listed. Using this strategy, a total of 491 course instructors were identified by name and email. Ten additional individuals involved in APA/APE service-learning, but who are not course instructors, were identified as potential participants through manually searching university websites or word of mouth and were invited to participate directly by the lead researcher. In total, 501 people were invited to participate in this study.

Materials

Instrument

This study was one part of a larger project in which an online Qualtrics survey was developed to gather information related to APA/APE undergraduate courses and associated hands-on experiences with people with disabilities at U.S. universities. The survey included 56 items although the total number of items varied by participant based on their responses to certain questions (i.e., skip functions were used). The 44 survey items used in the current study were closed-ended questions that gather data on the following topics: (a) university information, (b) service-learning content, objectives, and components, (c) characteristics of

undergraduate students, (d) characteristics of people with disabilities, (e) contact details, and (f) respondent demographic characteristics. At the start of the survey, respondents were prompted to answer questions as they relate to only one example of service-learning at their university that they are most involved with.

During the initial drafting of the survey, six faculty members and graduate students involved with service-learning from separate universities were interviewed by research assistants about the opportunities available to their students. Feedback collected during these interviews was used to update and improve survey questions to apply to a variety of service-learning programs and respondents. Before distribution, the survey was pilot tested by a panel of three judges who have extensive experience with service-learning. Each of the judges has a graduate degree in APA/APE and a minimum of three years of experience coordinating experiential opportunities for undergraduate students. Judges were asked to rate each survey question for (a) readability and (b) content representation on a scale from 1 (poor) to 4 (excellent). The mean total scores for readability and content representation among the three judges were 3.95 and 3.85, respectively. Any questions that received a rating less than excellent were revised based on rater suggestions and/or discussed among the researchers. Similar evaluation procedures have been used in other literature (e.g., Obrusnikova & Miccinello, 2012).

Variables

In effort to describe service-learning available at each of the participant's universities, 20 separate variables were used and organized into five themes: *service-learning characteristics*, *involvement in service-learning, undergraduate student population, people with disabilities,* and *contact between undergraduates and people with disabilities.* Table 2.2 presents the name and survey item(s) used to define each variable. In addition, using the several single-item variables measured in the survey, three separate groups of variables were created to represent the extent

to which participants reported to following recommendations for (1) student-centered best practices, (2) disability-centered best practices, and (3) best practices for favorable attitude change toward people with disabilities.

****Insert Table 2.2 here****

Student-centered best practices. Four separate variables, including training, formal student evaluation, reflection, and voluntary involvement, were used to define student-centered best-practice recommendations for service-learning. These specific variables were selected based on previous literature that outlines important, best-practice components (Pangelinan et al., 2018; Whitley, 2014; Yorio & Ye, 2012). Responses to the survey items that represent the four variables were dichotomously coded to indicate if each of the recommendations (a) were or (b) were not followed. Then, responses were collapsed into a single ordinal variable that defined if programs implemented (0) none, (1) minimal, (2-3) some, or (4) all of the student-centered best-practice recommendations.

Disability-centered best practices. Four separate variables, including involvement in program planning, process evaluation, opportunities for choice, and financial support, were used to define disability-centered best practices for inclusive health programming. These variables were selected based on Drum et al.'s (2009) guidelines for including people with disabilities within health programming. Responses to the survey items that represent the four variables were dichotomously coded to indicate if each of the recommendations (a) were or (b) were not followed. Then, responses were collapsed into a single ordinal variable that defined if programs implemented (0) none, (1) minimal, (2-3) some, or (4) all of the disability-centered best-practice recommendations.

Best practices for favorable attitude change. Five separate variables, including in-person contact, equal or lesser opportunities for choice, reflection, disability training, and voluntary

involvement, were used to define best-practice recommendations for favorable changes in attitudes toward people with disabilities among undergraduates. These variables were selected based on previous literature that has provided guidance and evidence for favorable attitude change (Case et al., 2020; Pettigrew & Tropp, 2006, 2008). Responses to the survey items that represent the five variables were dichotomously coded to indicate if each of the recommendations (a) were or (b) were not followed. Then, all responses were collapsed into a single ordinal variable that defined if programs implemented (0) none, (1-2) minimal, (3-4) some, or (5) all of the best-practice recommendations for attitude change.

Attitude change program objectives. Favorable attitude change toward people with disabilities as a service-learning objective for undergraduate students was defined using responses to one survey item: "In your opinion, what are the most important goals for undergraduate students in your program?" Respondents were prompted to pick up to three options. Responses were dichotomously coded to indicate if attitude change (a) was or (b) was not indicated as a program objective for students.

Procedure

This study received approval from the Institutional Review Board (IRB) of the lead investigator's university. Individual email invitations that included the link to the online Qualtrics survey were sent to each of the 501 potential participants in November 2020. After the initial invitation was sent, three separate email reminders to complete the survey were sent approximately two, four, and six weeks later to those who had not yet completed the survey. All respondents who completed the survey consented to participate in the study. Data collection was closed by the lead researcher in the beginning of February 2021.

Data Analysis

Preliminary analysis

A total of 194 online survey responses were collected through Qualtrics (Qualtrics, Provo, UT). Through the initial review, 20 of those responses were deleted from the final analysis due to large amounts of missing data (at least 50%). In addition, 9 respondents were excluded from the analysis because, based on their responses, they did not meet the inclusion criteria of involvement in service-learning. Then, Little's Missing Completely at Random (MCAR) test was conducted to evaluate if missing data values were missing in random order (Little, 1988). The results of Little's MCAR test indicated that values were missing completely at random (χ^2 [5034, n = 165] = 5065.69, p = 0.37). Therefore, Expectation Maximation (EM) was used to replace all missing values with values estimated using the available data (Kang, 2013). All variables in which missing values were replaced had less than 25% missing values before EM. Missing values of any variables that were attached to skip functions in the survey were not included in the EM process in order to avoid bias. After these steps, the final analysis included 165 respondents, indicating a 32.9% response rate.

Final analysis

Descriptive statistics [n, %] and 95% confidence intervals [CI] were calculated to describe frequencies and sample proportions of service-learning variables and the proportion of service-learning that followed none, minimal, some, or all of the best-practice recommendations for (a) student-centered service-learning, (b) disability-centered inclusive health programs, and (c) favorable attitude change toward people with disabilities. To identify differences in the implementation of student-centered best practices versus disability-centered best practices, a paired-samples Wilcoxon signed-rank test was conducted on the median number of best practices met across both types. In addition, ordinal logistic regression was used to explore the likelihood of implementing best-practice attitude change activities based on the indication of

attitude change program objectives. All analyses were conducted using Statistical Package for the Social Sciences (IBM Corporation, Version 27) and a significance level of 0.05.

Results

Description of Service-learning Characteristics and Involved Groups

Table 2.3 presents a descriptive summary of service-learning characteristics, program involvement, group characteristics, and contact between undergraduate students and people with disabilities within service-learning. The most commonly reported content focus of service-learning among the respondents was Physical Education (n = 129, 78.2%, 95% CI [.71, .84]), followed by physical activity (n = 114, 69.1%, 95% CI [.61, .76]) and fundamental motor skill practice (n = 109, 66.1%, 95% CI [.57, .73]).

****Insert Table 2.3 here****

Approximately one-fifth of APA/APE service-learning do not include training related to working with people with disabilities (n = 35, 21.2%, 95% CI [.15, .28]). Among the 130 programs (78.8%) that include a training related to people with disabilities, a variety of training concepts were included within and/or separate from the associated lecture (see Figure 2.1). Teaching modifications and accommodations was the most common training topic (n = 123, 94.6%, 95% CI [.89, .98]), while trauma-informed care was the least common (n = 12, 9.2%, 95% CI [.05, .16]). Approximately 64% of respondents (n = 106) indicated behavior management training was included. Among those respondents, positive reinforcement (n = 98) and redirection (n = 84) were the most commonly reported behavior topics (Figure 2.2).

****Insert Figure 2.1 here****

****Insert Figure 2.2 here****

Involvement in service-learning for undergraduates most commonly lasted for one academic semester (i.e., 15 weeks; n = 102, 61.8%, 95% CI [.54, .69]) and was a required course

component for most students (n = 156, 94.5%, 95% CI [.90, .98]). Service-learning most commonly included undergraduates who major in Physical Education Teacher Education (n = 144, 87.3%, 95% CI [.81, .92]), followed by Kinesiology or Exercise Science (n = 84, 50.9%, 95% CI [.43, .59]. The most frequent objectives of service-learning for undergraduates were to provide hands-on experience with people with disabilities (n = 149, 90.3%, 95% CI [.85, .94]), to learn how to create modifications (n = 118, 71.5%, 95% CI [.64, .78], to increase teacher self-efficacy (n = 110, 66.7%, 95% CI [.59, .74]), and to improve attitudes toward people with disabilities (n = 94, 57.0%, 95% CI [.49, .65]). School-aged children (6-17 years) are the most common age group of people with disabilities in the programs (n = 134, 81.2%, 95% CI [.74, .87]). The most frequently reported objectives for people with disabilities were to increase access to physical activity (n = 102, 61.8%, 95% CI [.54, .69]), to provide social interactions (n = 85, 51.5%, 95% CI [.44, .60]) and to improve motor skill performance (n = 82, 49.7%, 95% CI [.42, .58]).

Adherence to student-centered, disability-centered, and favorable attitude change best practices

Tables 2.4 shows the frequencies and sample proportions to which respondents report to using four student-centered best-practice recommendations. Overall, the majority of programs follow some (i.e., 2-3) recommendations (n = 126, 76.4%, 95% CI [.691, .826]). About 22% of respondents follow all four of the student-centered recommendations (n = 37, 22.4%, 95% CI [.163, .296]). All respondents reported to following at least one recommendation and only two respondents (1.2%, 95% CI [.001, .043]) reported to following only one recommendation.

****Insert Table 2.4 around here****

Table 2.5 shows the frequencies and sample proportions to which respondents report to using four disability-centered best-practice recommendations. In contrast to student-centered recommendations, the majority of respondents follow none (n = 50, 30.3%, [.234, .379]) or only

one (n = 65, 39.4%, [.319, .473]) of the recommendations. Approximately 26% of respondents (n = 43, 26.1%, 95% CI [.195, .335]) reported to following some and only 4.2% of respondents (n = 7, 4.2%, 95% CI [.017, .085] reported to following all recommendations.

****Insert Table 2.5 around here****

Table 2.6 shows the frequencies and sample proportions to which respondents report following the five activity recommendations for improving favorable attitude changes toward people with disabilities. All respondents reported implementing at least one activity recommended for attitude change. Among all respondents, 33 (20.0%, 95% CI [.142, .269]) reported to implementing minimal activities, 122 (73.9%, 95% CI [.665, .805]) reported to implementing some activities, and 10 (6.1%, 95% CI [.029, .109] reported to implementing all activities.

****Insert Table 2.6 around here****

Differences in following best-practice recommendations

Results of the Wilcoxon signed-rank test indicate that APA/APE service-learning programs are following significantly more student-centered recommendations (median rank = 3) than disability-centered recommendations (median rank = 1), with a median difference of two recommendations (Z = -10.45, p < .001, 95% CI [1.5, 2.0]). More disability-centered recommendations were implemented than student-centered in four cases, whereas more student-centered recommendations were implemented in 142 cases. The numbers of student-centered and disability-centered recommendations implemented were tied in only 19 cases.

Differences in odds of attitude change activities based on attitude change objectives

According to the ordinal logistic regression results, there were no significant differences in the odds of implementing activities recommended for attitude change among programs with and without reported attitude change objectives (OR = 1.14, p = .663, 95% CI [0.64, 2.04]). In

other words, at this time, there is no evidence that suggests that programs with attitude change objectives, as indicated by the respondents, have higher odds of implementing attitude change activities compared to programs without those objectives.

Discussion

The purposes of this study were to provide an updated status of university-based, APA/APE service-learning, while evaluating the extent to which program characteristics align with best-practice recommendations for undergraduate students, people with disabilities, and favorable attitude change. Service-learning includes a range of different content, objectives, and training concepts, with a majority aiming to prepare PETE undergraduate students to teach Physical Education and promote physical activity to school-aged children with disabilities. Overall, significantly more student-centered best-practice recommendations are implemented compared to disability-centered recommendations. In addition, regardless of the reported objectives, most programs implement more than one practice recommended for favorable attitude change toward people with disabilities. However, there are currently no differences in the odds of implementing those practices among programs with and without attitude change objectives, which highlights the possibility of pedagogical misalignment.

Updated summary of university-based service-learning

According to our results, service-learning most frequently focuses on Physical Education majors with the objective to gain hands-on experiences with K-12 students with disabilities. In addition, service-learning is most often a required component of a single, semester-long course. This is consistent with past descriptions of service-learning and practicum associated with APA/APE courses (Piletic & Davis, 2010; Kwon, 2018). This study also contributes new descriptive information, such as knowledge of training concepts, that may enhance current understandings of APA/APE service-learning and professional preparation literature. For

example, findings indicate that disability trainings incorporate a wide range of topics, including behavior management. The most common behavior management topics covered (positive reinforcement and redirection) are techniques that are applicable to many situations (Neitzel, 2010) and described in one of the most commonly used APE textbooks (Winnick & Porretta, 2017). Overall, the frequencies and range of behavior topics covered (see Figure 2.2) are encouraging when considering that researchers consistently report that physical educators feel underprepared to manage behaviors and call for behavior training (Healy et al., 2016; Lavay, 2019; Lavay et al., 2014). Despite this new information, the quality or depth of these topics remains unclear, and the educational experiences with behavior management among those providing training is unknown. Future research on the quality of behavior management training and the qualifications of those providing the training may give further insight into why physical educators report low levels of preparedness to manage behavior. In addition, the proportion of service-learning that does not include behavior training remains high (36%), so the exploration of instructors' barriers or supports to integrating valuable trainings is warranted.

Best-practice recommendations for service-learning and inclusive programming

Our results indicate that large proportions (76%) of respondents implement at least some best practices recommended for service-learning among university students. The extent to which several best practices, such as reflection and formal student evaluation, have been implemented within APA/APE has been reported as unclear (Case et al., 2020). Moreover, other scholars have called attention to the lack of implementing best practices, including those examined in this study, in service-learning in general (Whitley, 2014). The large proportion of instructors that report implementing these practices is therefore promising.

Among the four best practices examined, the most frequently followed recommendation was formal student evaluation while the least followed recommendation was

voluntary involvement for students. The high frequency of student evaluation is not surprising, as the majority of service-learning examined in this study is associated with a course. In addition, voluntary involvement in university-based service learning is likely difficult as curriculum standards may require a certain duration (i.e., number of hours) of hands-on experience. However, the Self-Determination Theory (Deci & Ryan, 1980) suggests that voluntary involvement in activities is more likely to lead to increased motivation to participate, including within learning activities (Niemiec & Ryan, 2009). Furthermore, voluntary involvement in service-learning among undergraduates has contributed to more desirable outcomes, such as larger gains in cognitive development and favorable changes in attitudes toward disability, compared to required involvement (Case et al., 2020; Yorio & Ye, 2012). Instructors of courses with required service-learning should therefore consider alternative ways to increase autonomy and self-determined behavior for their students (Niemiec & Ryan, 2009; Whitley, 2014). This may include creating room for students outside the course to volunteer or participate, allowing for self-directed activities and choices (e.g., of placement, mentors, student partners) among students, and minimizing control over students. Research that evaluates additional strategies for increasing autonomy among students in service-learning would be valuable.

Despite the frequency of using student-centered best practices, it was disheartening to see such low proportions of programs that are following disability-centered best-practice recommendations. Service-learning is intended to be mutually beneficial to those involved and people with disabilities should be considered equal partners in programming (Gent & Gurecka, 2001; Naturkach & Goodwin, 2019; RMC Research Corporation, 2008). To the authors' understanding, this research is the first known study to evaluate the implementation of disability-centered best practices within APA/APE service-learning. The reasons for these low proportions are therefore currently unknown. One potential explanation is that the disability-

centered guidelines examined in this study were created within the last 15 years and published by public health scholars (Drum et al., 2009; Kraus & Jans, 2014). It is therefore possible that course instructors are unaware of these guidelines or that disability-centered health programming receives more attention in Health Promotion areas compared to Education, including APA/APE training. Other literature also offers that specific barriers, such as training priorities, university policies or financial restraints, may challenge the use of disability-centered recommendations for some (Drum et al., 2009). Future research that examines instructors' knowledge of or barriers to integrating disability-centered strategies in service-learning may enhance our understanding of these findings. At this time, it is necessary to draw attention to and recognize that almost one-third of APA/APE service-learning is not incorporating *any* of the disability-centered recommendations examined in this study. Moving forward, it is imperative that scholars consider how to integrate disability-centered practices into their own programming. Raising awareness of these guidelines through coursework, training, and scholarship may also be important for creating a foundation for future implementation.

When considering the low proportion of programs that report to following disability-centered recommendations, it is important to acknowledge that the topic of interest in this study was university-based APA/APE *service-learning*, not physical activity programs for people with disabilities. Due to association with a university, some therefore may argue that it is reasonable that more student-centered recommendations are currently being followed compared to disability-centered. University-based service-learning opportunities are often closely connected with academic courses and, as such, emphasize student learning objectives. However, it is important to remember that service-learning intends to serve both groups involved (National Youth Leadership Council, 2008). People with disabilities who join service-learning programs in their community likely join for reasons other than student training and may

be looking for their own benefits (Naturkach & Goodwin, 2019). In addition, it should not be assumed that using student-centered best practices will inherently result in high-quality services for people with disabilities. Efforts should therefore be made to provide disability-centered programming as much as programming designed for students (Gent & Gurecka, 2001). APA/APE service-learning facilitators and instructors should explore how they can better incorporate disability-centered best practices into their own programs. Using disability-centered practices within service-learning not only has important implications for people with disabilities but, moving forward, sets the example of using inclusive, culturally appropriate programming for future physical educators and other APA professionals.

Pedagogical alignment of favorable attitude change objectives

Our findings suggest that there currently are no differences in the odds of implementing attitude change activities between service-learning with and without attitude change objectives. This evidence may reflect a misalignment between attitude change objectives and pedagogy strategies used to promote favorable attitude change. This is also consistent with previous discussions of whether or not APA/APE service-learning is carefully designed to promote attitude change toward people with disabilities (Case et al., 2020).

Contact Theory (Allport, 1954) states that increasing contact between different groups (e.g., undergraduate students and children with disabilities) may promote more favorable attitudes. However, an essential and potentially overlooked specification of Contact Theory proposes that the four optimal contact conditions—personal interaction, common goals, equal status, support of authority—can contribute to larger improvements if met or may reinforce negative attitudes if ignored (Dunn, 2015; Pettigrew & Tropp, 2006). In addition, researchers report that negative group contact, such as involuntary or threatening contact, can enhance negative attitudes and prejudice (Pettigrew et al., 2011). Despite the overall large proportions of

respondents who use attitude change activities, our results show that the two least followed best-practice recommendations for attitude change are choice-making opportunities for people with disabilities followed by voluntary involvement of students. As discussed previously in this manuscript, there may be unique complexities, such as curriculum requirements, to ensuring voluntary involvement in university-based service learning. However, prioritizing choice-making opportunities for people with disabilities is feasible within programming and encouraged. To offer people with disabilities choice is to value their views and may reflect the optimal contact conditions of common goals or equal rank between groups. Future research that questions the low adherence of choice-making opportunities for people with disabilities in these settings is warranted. Researchers should also investigate how negative contact can be avoided and optimal contact conditions can be maximized within the context of APA/APE service-learning, particularly if attitude change is the goal.

This result may also be inconclusive at this time due to the way in which attitude change activities were delimited for this study. For example, the five variables that represent attitude change recommendations in this study were selected based on previous literature as well as convenience for online, self-report surveys. However, there are other activities and characteristics that support attitude change that were not measured by this survey. Therefore, it is possible that results may be different if the survey measured the use of other attitude change activities, such as guided imagined contact (Dunn, 2015). At this time, however, it is important to recognize that the indication of attitude change objectives does not predict larger amounts of corresponding activities within service-learning, which would be expected. This misalignment highlights the need to carefully plan activities that support the learning objectives of interest and simultaneously sparks questions regarding the pedagogical alignment of other important objectives (e.g., increases in teacher self-efficacy) in APA/APE service-learning.

Interestingly, the misalignment between attitude change objectives and pedagogy strategies is consistent with recent researchers' questions about the extent to which university-based service-learning is improving favorable attitudes toward people with disabilities (Case et al., 2020; McNamara et al., in press). McNamara and colleagues (in press) interviewed seven introductory APE course instructors about the purpose of their course and its included content. A prominent theme among the instructors was the importance of the included, hands-on practicum and its potential influence on students' attitudes toward people with disabilities. However, based on the participants' responses, the authors posited that changing attitudes may be too optimistic within a single academic term and pointed out that the "road" to improve attitudes within these contexts seems unclear. Given these concerns, and the results of the current study, it may be of value to evaluate what the most important objectives—for both university students and people with disabilities—are for service-learning in the field. This may open avenues to further investigate the unique pedagogy strategies and service-learning activities that most appropriately align with achieving objectives for both groups.

While the main goal of this study did not include the examination of course instructor demographics, there were notable commonalities among participants that are important to discuss. The included sample was largely homogeneous and consisted mainly of White, non-Hispanic or Latinx, non-disabled university faculty members. This is consistent with previous literature that highlights a lack of diversity among scholars in the Physical Education and Kinesiology fields (Burden et al., 2012; Hodge & Wiggins, 2010). Sampling and recruitment efforts in this study were purposefully intensive to identify a large, scoping sample of APA/APE course instructors. The homogeneity in the sample, despite our recruitment strategy, indicates that efforts are necessary to (1) diversify how scholars, including students, are recruited to join the field or to (2) identify new or diverse strategies to encourage scholars of different

demographics within the field to participate in research. For example, to diversify faculty, Hodge and Wiggins (2010) suggest several strategies, including that faculty positions should be advertised in platforms with diverse readership and that scholars should purposefully seek out faculty and doctoral students of color at conferences. The value of diversity among faculty, particularly for training and professional preparation, is clear within the literature (Brooks et al., 2013). Yet, it is possible that Physical Education and Kinesiology-related disciplines do not currently reflect these efforts to create a more diverse faculty.

Some limitations of this study must be addressed. For example, the best-practice recommendations examined in this study were chosen for feasibility purposes and due to reports that they are important for programming involving university students and people with disabilities. Therefore, our results provide a preliminary examination of how APA/APE service-learning aligns with multiple sets of best practices. Future research that examines fidelity to recommendations in other general areas (e.g., accessibility, community engagement) or more closely focuses on one area may provide a deeper understanding of how current service-learning aligns with important best practices. For example, McKay et al. (2018) developed and used a fidelity criteria instrument to examine how contact within a Paralympic School Day event satisfied the four corresponding components of Contact Theory. Future research that analyzes how APA/APE service-learning components adhere to theoretical components may extend this work (McKay et al., 2018). Similarly, while we focused on attitude change among undergraduate students, service-learning may have greater pedagogical alignment with other program objectives, such as improvements in teacher performance or increases in physical activity levels among children with disabilities. However, favorable attitude change is repeatedly reported as an objective of APA/APE service-learning, so it is timely to look into this specific relationship. Existing or future studies that examine the alignment between best practices and other

important objectives, such as Physical Education teacher preparation or developing pedagogical skills (Taliaferro & Bulger, 2020), will enhance evaluation efforts.

This study used a robust recruitment strategy to gather information on a broad scope of APA/APE service-learning and the extent to which several best-practice recommendations are followed. Strengths include evaluating the implementation of best-practice recommendations and widening the focus of service-learning pedagogy research to consider disability-centered programming as opposed to solely maximizing student benefit. Of those examined, programs implement more best practices related to students than disability communities within service-learning. In addition, there is evidence of potential misalignment between attitude change objectives and the pedagogy strategies used. With these results, it is not our intention to criticize training within APA/APE. We acknowledge that there are many important ways in which service-learning and training programs in APA/APE are benefiting the disability community that may have not been examined in this study. For the purpose of this study, however, we draw attention to the evidence of areas needing improvement moving forward. Course instructors and service-learning facilitators should continue to focus on implementing practices that maximize student outcomes and benefits. Greater attention should be given to using and evaluating disability-centered practices within service-learning, especially those which have been voiced or informed by members of the disability community.

References

Allport, G. W. (1954). *The nature of prejudice*. Addison-Wesley.

Barnett, K. B., McRee, A. L., Reiter, P. L., Paskett, E. D., & Katz, M. L. (2015). Cervical cancer prevention services at college health centers: Historically Black colleges and universities (HBCUs) compared to predominantly White institutions (PWIs). *Cancer Epidemiology and Prevention Biomarkers*, *24*(4), 758–758. https://doi.org/10.1158/1055-9965.EPI-15-0096

Brooks, D. D., Harrison Jr, L., Norris, M., & Norwood, D. (2013). Why we should care about diversity in Kinesiology. *Kinesiology Review*, *2*(3), 145–155.

Burden, J., Hodge, S., & Harrison, L. (2012). Teacher educators' views about social justice pedagogies in Physical Education Teacher Education. *Journal of Curriculum and Teaching*, *1*(1), 6–21. https://doi.org/10.5430/jct.v1n1p6

Case, L., Schram, B., Jung, J., Leung, W., & Yun, J. (2020). A meta-analysis on the effects of adapted physical activity service-learning programs on college student attitudes toward people with disabilities. *Disability and Rehabilitation*. https://doi.org/10.1080/09638288.2020.1727575

Conner, J. E. (2017). When does service-learning work? *Michigan Journal of Community Service Learning*, *23*(2), 53–65. http://dx.doi.org/10.3998/mjcsloa.3239521.0023.204

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*(4), 233–245.

Deaner, R. O., Geary, D. C., Puts, D. A., Ham, S. A., Kruger, J., Fles, E., Winegard, B., & Grandis, T. (2012). A sex difference in the predisposition for physical competition: Males play sports

much more than females even in the contemporary U.S. *PLoS ONE*, *7*(11), e49168–e49168. https://doi.org/10.1371/journal.pone.0049168

Deci, E., & Ryan, R. (1980). Self-determination theory: When mind mediates behavior. *The Journal of Mind and Behavior*, *1*(1), 33–43.

Drum, C., Peterson-Besse, J., Culley, C., Krahn, G., Heller, T., Kimpton, T., Mccubbin, J., Rimmer, J. H., Seekins, T., Suzuki, R., & White, G. (2009). Guidelines and criteria for the implementation of community-based health promotion programs for individuals with disabilities. *American Journal of Health Promotion*, *24*, 93–101, ii. https://doi.org/10.4278/ajhp.090303-CIT-94

Dunn, D. (2015). *The Social Psychology of Disability*. Oxford University Press.

Folsom-Meek, S. L., Nearing, R. J., Groteluschen, W., & Krampf, H. (1999). Effects of academic major, gender, and hands-on experience on attitudes of preservice professionals. *Adapted Physical Activity Quarterly*, *16*(4), 389–402.

Gent, P. J., & Gurecka, L. E. (2001). Service-learning: A disservice to people with disabilities? *Michigan Journal of Community Service Learning*, *8*(1), 36–43.

Ginder, S. A., Kelly-Reid, J. E., & Mann, F. B. (2018). *2017–18 Integrated Postsecondary Education Data System (IPEDS) Methodology Report (NCES 2018-195)*. U.S. Department of Education. Washington, DC: National Center for Education Statistics. http://nces.ed.gov/pubsearch

Healy, S., Judge, J. P., Block, M. E., & Kwon, E. H. (2016). Preparing adapted physical educators to teach students with autism: Current practices and future directions. *Physical Educator*, *73*(1), 97–109.

Hodge, S. R., Davis, R., Woodard, R., & Sherrill, C. (2002). Comparison of practicum types in changing preservice teachers' attitudes and perceived competence. *Adapted Physical Activity Quarterly*, *19*(2), 155–171. https://doi.org/10.1123/apaq.19.2.155

Hodge, S. R., & Jansma, P. (1999). Effects of contact time and location of practicum experiences on attitudes of physical education majors. *Adapted Physical Activity Quarterly*, *16*(1), 48–63.

Hodge, S. R., Tannehill, D., & Kluge, M. A. (2003). Exploring the meaning of practicum experiences for PETE students. *Adapted Physical Activity Quarterly*, *20*(4), 381–399. https://doi.org/10.1123/apaq.20.4.381

Hodge, S. R., & Wiggins, D. (2010). The African American experience in Physical Education and Kinesiology: Plight, pitfalls, and possibilities. *Quest*, *62*(1), 35–60. https://doi.org/10.1080/00336297.2010.10483631

Holsapple, M. A. (2012). Service-learning and student diversity outcomes: Existing evidence and directions for future research. *Michigan Journal of Community Service Learning*, *18*(2), 5–18.

Hunt, C. S., & Hunt, B. (2004). Changing attitudes toward people with disabilities: Experimenting with an educational intervention. *Journal of Managerial Issues*, *16*(2), 266–280.

Hutzler, Y., Meier, S., Reuker, S., & Zitomer, M. (2019). Attitudes and self-efficacy of physical education teachers toward inclusion of children with disabilities: A narrative review of international literature. *Physical Education and Sport Pedagogy*, *24*(3), 249–266. https://doi.org/10.1080/17408989.2019.1571183

Kang, H. (2013). The prevention and handling of the missing data. *Korean Journal of Anesthesiology*, *64*(5), 402–406. https://doi.org/10.4097/kjae.2013.64.5.402

Kraus, L. E., & Jans, L. (2014). *Disability inclusion in physical activity, nutrition, and obesity programs and policies implementation manual*. Center on Disability at the Public Health Institute.

Kwon, E. H. (2018). Status of introductory APE course and infusion in PETE program. *Palaestra*, *32*(1), 32–39.

Lavay, B. (2019). Behavior management: What I have learned. *Journal of Physical Education, Recreation & Dance*, *90*(3), 5–9. https://doi.org/10.1080/07303084.2019.1559646

Lavay, B., Guthrie, S., & Henderson, H. (2014). The behavior management training and teaching practices of nationally Certified Adapted Physical Education (CAPE) teachers. *Palaestra*, *28*(1), 24–31.

Lee, J., Chang, S. H., & Haegele, J. (2020). Does service learning Work? Attitudes of college students toward individuals with disabilities. *Journal of Experiential Education*, *43*(4), 365–380. https://doi.org/10.1177/1053825920918887

Lee, J., Santiago, J. A., Chang, S. H., & Haegele, J. (2017). Academic community engagement research in kinesiology: Undergraduate students' attitudes toward individuals with disabilities. In *Community Engagement Findings Across the Disciplines: Applying Course Content to Community Needs*. Rowman & Littlefield.

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association*, *83*(404), 1198–1202. https://doi.org/10.1080/01621459.1988.10478722

McKay, C., Park, J. Y., & Block, M. (2018). Fidelity criteria development: Aligning paralympic school day with contact theory. *Adapted Physical Activity Quarterly*, *35*(2), 233–242. https://doi.org/10.1123/apaq.2017-0064

McNamara, S. W. T., Lieberman, L., Wilson, K., & Colombo-Dougovito, A. (in press). "I mean I hate to say it's sink or swim, but..': College course instructors' perceptions of the adapted physical education content that they prioritize and teach. *Sport, Education and Society*. https://doi.org/10.1080/13573322.2021.1882978

National Youth Leadership Council. (2008). *K-12 service-learning standards for quality practice*. https://nylc.org/service-learning/

Naturkach, R. T. M., & Goodwin, D. L. (2019). The unheard partner in adapted physical activity community service learning. *Adapted Physical Activity Quarterly*, *36*(2), 264–281. https://doi.org/10.1123/apaq.2018-0074

Neitzel, J. (2010). Positive behavior supports for children and youth with autism spectrum disorders. *Preventing School Failure: Alternative Education for Children and Youth*, *54*(4), 247–255. https://doi.org/10.1080/10459881003745229

Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education*, *7*(2), 133–144. https://doi.org/10.1177/1477878509104318

Obrusnikova, I., & Miccinello, D. L. (2012). Parent perceptions of factors influencing after-school physical activity of children with autism spectrum disorders. *Adapted Physical Activity Quarterly*, *29*(1), 63–80. https://doi.org/10.1123/apaq.29.1.63

Pangelinan, M., Norcross, M., MacDonald, M., Rudisill, M., Wadsworth, D., & McDonald, J. (2018). Development, management, and evaluation of undergraduate experiential learning: Recommendations for best practices. *Kinesiology Review*, *7*(4), 339–344. https://doi.org/10.1123/kr.2018-0044

Perlman, D., & Piletic, C. (2012). The influence of an adapted physical education course on preservice teacher instruction: Using a self-determination lens. *Australian Journal of Teacher Education*, *37*(1), 1–17. https://doi.org/10.14221/ajte.2012v37n1.6

Pettigrew, T., & Tropp, L. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, *90*(5), 751–783. https://doi.org/10.1037/0022-3514.90.5.751

Pettigrew, T., & Tropp, L. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*, *38*(6), 922–934. https://doi.org/10.1002/ejsp.504

Pettigrew, T., Tropp, L., Wagner, U., & Christ, O. (2011). Recent advances in intergroup contact theory. *International Journal of Intercultural Relations*, *35*(3), 271–280. https://doi.org/10.1016/j.ijintrel.2011.03.001

Piletic, C. K., & Davis, R. (2010). A profile of the introduction to adapted physical education course within undergraduate physical education teacher education programs. *ICHPER-SD Journal of Research*, *5*(2), 26–32.

RMC Research Corporation. (2008). *Standards and indicators for effective service-learning practice*. National Service-Learning Clearinghouse. http://www.servicelearning.org/instant_info/fact_sheets/k-12_facts/engagement/

Roth, D., Pure, T., Rabinowitz, S., & Kaufman-Scarborough, C. (2018). Disability awareness, training, and empowerment: A new paradigm for raising disability awareness on a university campus for faculty, staff, and students. *Social Inclusion*, *6*(4), 116–124. https://doi.org/10.17645/si.v6i4.1636

Shields, N., & Taylor, N. F. (2014). Contact with young adults with disability led to a positive change in attitudes toward disability among physiotherapy students. *Physiotherapy Canada*, *66*(3), 298–305. https://doi.org/10.3138/ptc.2013-61

Stewart, C. C. (1990). Effect of practica types in preservice adapted physical education curriculum on attitudes toward disabled populations. *Journal of Teaching in Physical Education*, *10*(1), 76–83.

Taliaferro, A. R., Hammond, L., & Wyant, K. (2015). Preservice physical educators' self- efficacy beliefs toward inclusion: The impact of coursework and practicum. *Adapted Physical Activity Quarterly*, *32*(1), 49–67. https://doi.org/10.1123/apaq.2013-0112

Whitley, M. A. (2014). A draft conceptual framework of relevant theories to inform future rigorous research on student service-learning outcomes. *Michigan Journal of Community Service Learning*, *20*(2), 19–40.

Winnick, J. P., & Porretta, D. L. (2017). *Adapted Physical Education and Sport* (6th ed.). Human Kinetics.

Yorio, P., & 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*(1), 9–27. https://doi.org/10.5465/amle.2010.0072

Tables

Table 2.1. Descriptive statistics of sample participants (N = 165)

Participant characteristic	n	%	95% CI
Age	165	-	-
25-34	22	13.3%	[.085, .195]
35-44	55	33.3%	[.262, .411]
45-54	29	17.6%	[.121, .243]
55-64	43	26.1%	[.195, .335]
65-74	16	9.7%	[.056, .153]
Race	165	-	-
Black or African American	9	5.5%	[.025, .101]
American Indian or Alaska Native	3	1.8%	[.004, .052]
Asian	7	4.2%	[.017, .085]
Native Hawaiian or Pacific Islander	0	0%	[.000, .022]
White	146	88.5%	[.826, .929]
Other	3	1.8%	[.004, .052]
Ethnicity	165	-	-
Hispanic or Latino	5	3.0%	[.010, .069]
Not Hispanic or Latino	160	97.0%	[.931, .990]
Disability Status	165	-	-
Yes	27	16.4%	[.111, .229]
No	138	83.6%	[.771, .889]
University Role	165	-	-
Graduate student	4	2.4%	[.007, .061]
Assistant Professor	43	26.1%	[.195, .335]
Associate Professor	43	26.1%	[.195, .335]
Professor	39	23.6%	[.174, .309]
Adjunct or part-time faculty	21	12.7%	[.081, .188]
Other	15	9.1%	[.052, .146]
Major of Highest Degree	165	-	-
Kinesiology or Exercise Science	26	15.8%	[.106, .222]
Physical Education	45	27.3%	[.206, .347]
Adapted Physical Education or Activity	56	33.9%	[.268, .417]
Health Education	2	1.2%	[.001, .043]
Special Education	7	4.2%	[.017, .085]
Physical or Occupational Therapy	1	0.6%	[.000, .033]
Other	28	17.0%	[.116, .236]
Teaching Certification (PE or APE)	165	-	-
Yes	75	45.5%	[.377, .534]
In the past	54	32.7%	[.256, .405]
Never	36	21.8%	[.158, .289]

Table 2.2. Service-learning variables by name and survey item

Variable (*by theme*)	Survey Item
Service-learning Characteristics	
Content	What are the contents of the program?
Program History	How long has the program been active?
Disability training	Does the program provide a training specific to working with children or people with disabilities for undergraduate students?
Disability training material	What concepts are typically covered within the training or throughout involvement?
Behavior management material	If there is behavior management training, what concepts are typically covered during the training or throughout the experience?
Involvement in service-learning	
Program duration	About how long are undergraduate students typically involved?
Session frequency	About how often do program sessions occur throughout the academic quarter/semester?
Session time	About how long is each program session?
Reason for involvement	How do undergraduate students become involved in the program?
Undergraduate student population	
Student major	What do undergraduate students major in?
Student objectives	In your opinion, what are the most important goals for undergraduate students in your program? Pick up to three:
Use of reflection	Is reflection integrated into your program for undergraduate students?
Student evaluation	How are students evaluated within the program?
People with disabilities	
Disability population	Who does the service-learning program serve?
Age	Which option best describes the age of the people with disabilities involved?
Number	About how many people with disabilities are regularly involved?
Program objectives	In your opinion, what are the most important goals for people with disabilities in your program? Pick up to three:
Contact	
Contact type	Prior to changes due to COVID_19, how do students typically interact with people with disabilities in the program?
Ratio in contact	Which option best describes the ratio between undergraduate students and people with disabilities?
Opportunities for choice	In general, who choose the activities during the program sessions?

Note. All survey items include closed-ended response options.

Table 2.3. Descriptive summary of service-learning variables

Variable	Variable levels	Statistics		
Service Learning		**N**	**%**	**95% CI**
Content*	Aquatics	51	30.9%	[.24, .39]
	Dance	51	30.9%	[.24, .39]
	Fundamental motor skills	109	66.1%	[.58, .73]
	Fitness	105	63.6%	[.56, .71]
	Rehab and Physical Therapy	18	10.9%	[.07, .17]
	Physical Education	129	78.2%	[.71, .84]
	Physical Activity	114	69.1%	[.61, .76]
	Play/leisure	80	48.5%	[.41, .56]
	Social Engagement	81	49.1%	[.41, .57]
	Sports	97	58.8%	[.51, .66]
	Specific sport	14	8.5%	[.05, .14]
	Other	11	6.7%	[.03, .12]
Program History	Less than one year	5	3.0%	[.01, .07]
	1-5 years	31	18.8%	[.13, .26]
	6-10 years	43	26.1%	[.20, .34]
	11-20 years	37	22.4%	[.16, .30]
	More than 20 years	32	19.4%	[.14, .26]
	Unsure	17	10.3%	[.06, .16]
Disability Training	Yes	130	78.8%	[.72, .85]
	No	35	21.2%	[.15, .28]
Disability training material*,S	Diagnostic criteria	68	52.3%	[.43, .61]
	Common signs/characteristics	105	80.8%	[.73, .87]
	Models of disability	73	56.2%	[.47, .65]
	Disability language	105	80.8%	[.73, .87]
	Best teaching practices	115	88.5%	[.82, .93]
	Modifications/accommodations	123	94.6%	[.89, .98]
	Behavior management	106	81.5%	[.74, .88]
	Personal care	30	23.1%	[.16, .31]
	Safety and emergency care	52	40.0%	[.32, .49]
	Trauma informed care	12	9.2%	[.05, .16]
	American sign language	27	20.8%	[.14, .29]
	Other	6	4.6%	[.02, .10]
Behavior management material*,S	Functions of behavior	67	51.5%	[.43, .60]
	ABCs of behavior	74	56.9%	[.48, .66]
	Premack principle (if, then)	57	43.8%	[.35, .53]
	Providing choices and autonomy	71	54.6%	[.46, .63]
	Redirection strategies	84	64.6%	[.56, .73]
	Prompting	79	60.8%	[.52, .69]

	Differential reinforcement of incompatible behaviors	38	29.2%	[.22, .38]
	Visual supports	74	56.9%	[.48, .66]
	Positive reinforcement	98	75.4%	[.67, .83]
	Token economies (token boards)	51	39.2%	[.31, .48]
	Sensory preferences and responses	41	31.5%	[.24, .40]
	Other	6	4.6%	[.02, .10]
Involvement in service-learning		**N**	**%**	**95% CI**
Program duration	One quarter (~10 weeks)	30	18.2%	[.13, .25]
	One semester (~15 weeks)	102	61.8%	[.54, .69]
	One academic year	1	0.6%	[.00, .03]
	One-week event	2	1.2%	[.001, .04]
	One-time event	11	6.7%	[.03, .12]
	Other	19	11.5%	[.07, .17]
Session frequency[S]	One time-event	4	3.0%	[.01, .08]
	Once per week	78	58.6%	[.50, .67]
	Twice per week	33	24.8%	[.18, .33]
	Three or more sessions per week	5	3.8%	[.01, .09]
	Other	13	9.8%	[.05, .16]
Session time[S]	30 minutes or less	17	12.8%	[.08, .20]
	60 minutes	64	48.1%	[.39, .57]
	90 minutes	20	15.0%	[.09, .22]
	120 minutes	14	10.5%	[.06, .17]
	Other	18	13.5%	[.08, .21]
Reason for involvement*	Required course component	156	94.5%	[.90, .98]
	Voluntary involvement	49	29.7%	[.23, .37]
	Internship	13	7.9%	[.04, .13]
	Other	8	4.8%	[.02, .09]
Undergraduate student population		**N**	**%**	**95% CI**
Student major*	PETE	144	87.3%	[.81, .92]
	APA or APE	22	13.3%	[.09, .20]
	Kinesiology or Exercise Science	84	50.9%	[.43, .59]
	Pre-occupational or pre-physical therapy	53	32.1%	[.25, .40]
	Health Education	34	20.6%	[.15, .28]
	Special Education	25	15.2%	[.10, .22]
	Other	22	13.3%	[.09, .20]
	Any major is welcome	36	21.8%	[.16, .29]
Student objectives*	To gain hands-on experiences	149	90.3%	[.85, .94]
	To learn how to create lesson plans	39	23.6%	[.17, .31]
	To learn how to create modifications	118	71.5%	[.64, .78]
	To improve self-efficacy/confidence	110	66.7%	[.59, .74]

	To improve attitudes toward people with disabilities	94	57.0%	[.49, .65]
	To supplement learning in lectures	30	18.2%	[.13, .25]
	To increase community engagement among students	30	18.2%	[.13, .25]
	To gain experiences with collaboration	44	26.7%	[.20, .34]
	Other	1	0.6%	[.00, .03]
	No formally identified objectives	1	0.6%	[.00, .03]
Use of reflection	Yes	155	93.9%	[.89, .97]
	No	10	6.1%	[.03, .11]
Student evaluation*	No formal evaluation	7	4.2%	[.02, .09]
	Attendance	117	70.9%	[.63, .78]
	Performance feedback	80	48.5%	[.41, .56]
	Graded assignments	140	84.8%	[.76, .90]
	Informal discussions	57	34.5%	[.27, .42]
	Other	7	4.2%	[.02, .09]
People with disabilities		**N**	**%**	**95% CI**
Disability population	People with several different diagnoses are involved	150	90.9%	[.85, .95]
	People with specific diagnoses	15	9.1%	[.05, .15]
Age*	Young children (0-5 years)	32	19.4%	[.14, .26]
	School-aged children (6-17 years)	134	81.2%	[.74, .87]
	Young adults (18-25 years)	82	49.7%	[.42, .58]
	Adults (26-64 years)	56	33.9%	[.27, .42]
	Older adults (65+ years)	12	7.3%	[.04, .12]
	Other	7	4.2%	[.02, .09]
Number	Less than 10	28	17.0%	[.12, .24]
	10-29	86	52.1%	[.44, .60]
	31-50	25	15.2%	[.10, .22]
	Over 50	26	15.8%	[.11, .22]
Program objectives*	To increase motor skill level	82	49.7%	[.42, .58]
	To gain access to physical activity	102	61.8%	[.54, .69]
	To increase interest in physical activity	79	47.9%	[.40, .56]
	To have a positive physical activity role model	42	25.5%	[.19, .33]
	To improve functional fitness and activities of daily living	69	41.8%	[.34, .50]
	To improve physical activity independence or self-efficacy	56	33.9%	[.27, .42]
	To gain social interactions	85	51.5%	[.44, .60]
	Other	7	4.2%	[.02, .09]
	No formally identified objectives	13	7.9%	[.04, .13]

Contact		N	%	95% CI
Contact type*	In-person, hands-on contact	151	91.5%	[.86, .95]
	Observations	64	38.8%	[.31, .47]
	Video-based contact	20	12.1%	[.08, .18]
	Other	2	1.2%	[.00, .04]
Ratio between students and people with disability*	1:1 ratio	92	55.8%	[.48, .64]
	2:1 ratio	63	38.2%	[.31, .46]
	Small group (1:<10)	77	46.7%	[.39, .55]
	Large group (1: 10+)	14	8.5%	[.05, .14]
	Other	14	8.5%	[.05, .14]
Opportunities for choice*	Undergraduate students	56	33.9%	[.27, .42]
	People with disabilities	3	1.8%	[.004, .05]
	Program staff	84	50.9%	[.43, .59]
	Equal opportunities for students and people with disabilities	22	13.3%	[.09, .20]

Note. All survey items include closed-ended response options. *, respondents were allowed to indicate more than one response, percentages will not add up to 100%. ^{S}, only select respondents viewed/answered this question based on affirmative responses to previous questions, percentages reflect a subsample.

Table 2.4. Use of best practices for student-centered service-learning

Variable	Frequency (n)	Percent (%)	95% CI
Reflection	155	93.9%	[.891, .971]
Training	130	78.8%	[.718, .848]
Voluntary Involvement	49	29.7%	[.228, .373]
Formal Evaluation	158	95.8%	[.915, .983]
Recommendations Followed			
None	0	0	[.000, .022]
Minimal	2	1.2%	[.001, .043]
Some	126	76.4%	[.691, .826]
All	37	22.4%	[.163, .296]
Note. None (0), minimal (1), some (2-3), all (4)			

Table 2.5. Use of best practices for disability-centered health programming

Variable	Frequency (n)	Percent (%)	95% CI
Involved in planning	28	17.0%	[.116, .236]
Financial Support	94	57.0%	[.490, .646]
Opportunities for choice	25	15.2%	[.101, .215]
Process evaluation	49	29.7%	[.228, .373]
Recommendations Followed			
None	50	30.3%	[.234, .379]
Minimal	65	39.4%	[.319, .473]
Some	43	26.1%	[.195, .335]
All	7	4.2%	[.017, .085]
Note. None (0), minimal (1), some (2-3), all (4)			

Table 2.6. Use of best practices for favorable attitude change

Variable	Frequency (n)	Percent (%)	95% CI
Reflection	155	93.9	[.891, .971]
Training	130	78.8%	[.718, .848]
Voluntary Involvement	49	29.7%	[.228, .373]
In-person contact	151	91.5%	[.862, .953]
Opportunities for choice	25	15.2%	[.101, .215]
In total			
None	0	0	[.000, .022]
Minimal	33	20.0%	[.142, .269]
Some	122	73.9%	[.665, .805]
All	10	6.1%	[.029, .109]
Note. None (0), minimal (1-2), some (3-4), all (5)			

Figures

Figure 2.1. Ranked frequency of the topics included in disability training

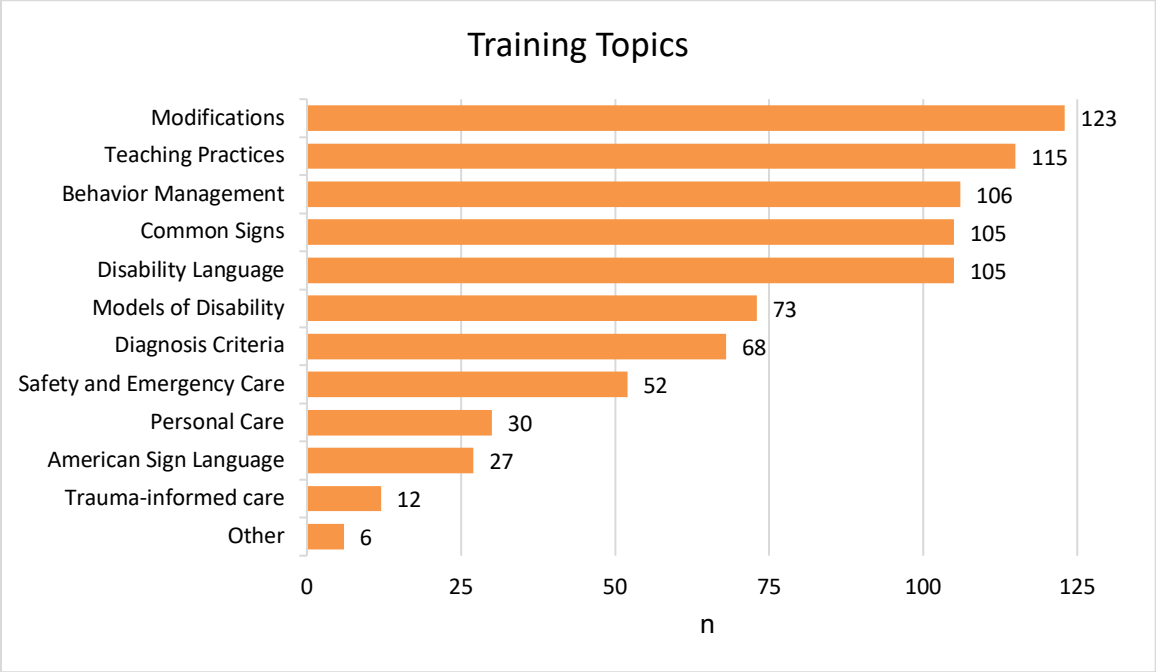
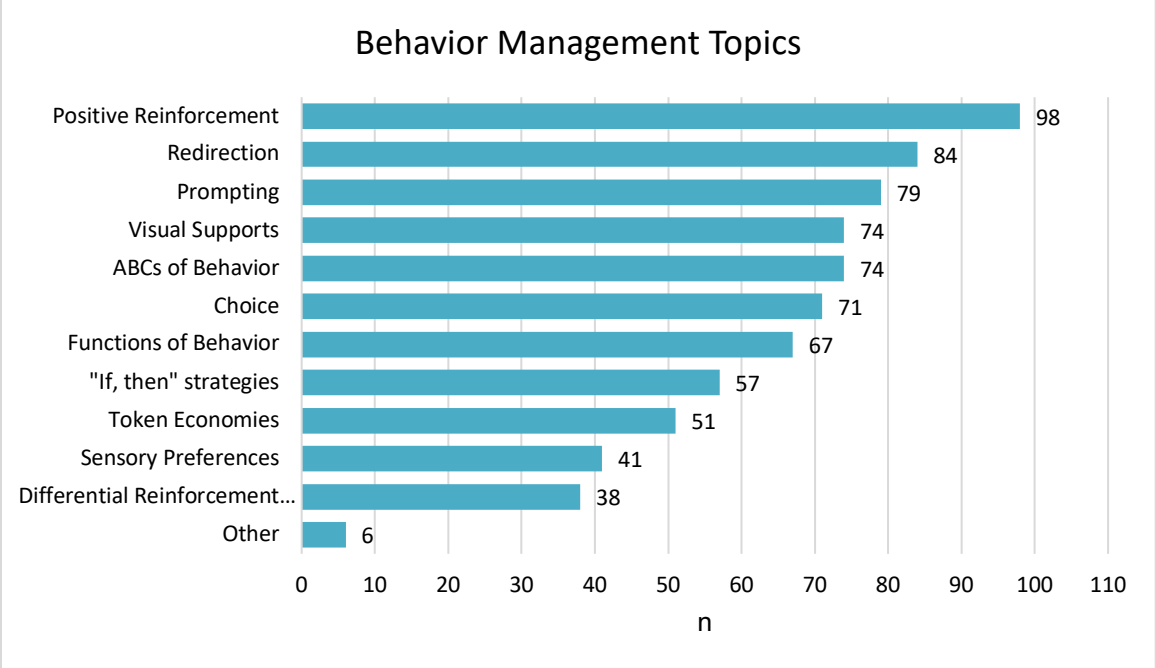


Figure 2.2. Ranked frequency of various behavior management training topics



CHAPTER III. SECOND MANUSCRIPT

Challenges and supports to implementing service-learning among undergraduate course instructors

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Abstract

The purpose of this study was to examine the challenges and supports to service-learning among instructors of adapted physical activity (APA) and adapted physical education (APE) undergraduate courses. This study included 165 participants, all of which were instructors of APA/APE courses that include a service-learning component (n = 159, 96.4%) or facilitators of APA/APE service-learning (n = 6, 3.6%). Participants completed an online Qualtrics survey that measured instructor-rated perceptions of challenges and supports to service-learning at their university, and programming response to the COVID-19 pandemic. Results indicate that, on average, the most critical challenges to service-learning all related to lack of time. The most critical supports related to adequate planning and high-quality staff. The only university or instructor characteristic examined in this study that contributed to differences in mean ratings of challenges to service-learning was teacher certification status ($F(1, 163) = 4.353$, $p = .038$, $\eta^2 = 0.03$). Respondents with active certifications (n = 75, m = 2.24, SD = 0.95) rated challenges significantly lower than those without active certifications (n = 90, m = 2.55, SD = 0.96). There were no differences in mean ratings of supports based on any university or instructor characteristic. In addition, results of two separate binary logistic regression analyses suggest there are no differences in program response to COVID-19 based on mean challenge ratings (OR = 0.99, $p = 0.93$, 95% CI [.704, 1.38]), but differences in program response were found based on mean support ratings (OR = 1.37, SE = .15, $p = 0.04$, 95% CI [1.02, 1.84]). Among programs that stopped in-person programming in response to COVID-19, there was a 1.37 increase in the odds of virtual/remote programming for every one-unit increase in mean support ratings. Findings from this study offer implications for maximizing supports to APA/APE service-learning.

Keywords: barriers, facilitators, service-learning, practicum, physical education, instructors

Challenges and supports to implementing service-learning among undergraduate course instructors

Service-learning is a pedagogy strategy that is often used in university settings and allows students to engage in learning activities while providing service to the community (Kenworthy-U'Ren, 2008; Whitley, 2014; Yorio & Ye, 2012). In Adapted Physical Activity (APA) and Adapted Physical Education (APE) training, service-learning is commonly used to prepare undergraduate students, including preservice physical educators, to teach people with disabilities (Taliaferro & Bulger, 2020). While program characteristics, activities, and settings may vary across universities, APA/APE service-learning often consists of undergraduate students working directly with people with disabilities in physical activity or Physical Education environments (Kwon, 2018). For instance, as part of an APA or APE course, undergraduate students may be paired one-on-one with children with disabilities to provide physical activity and aquatics instruction once per week (Richards et al., 2012).

The positive outcomes of APA/APE service-learning have been well documented through research (Case et al., 2020; Hodge & Jansma, 1997, 1999; Lee et al., 2020; Rowe & Stutts, 1987). Due to the connection between service-learning and course content, APA/APE scholars have primarily examined and highlighted the effects of service-learning as a training tool for students (Hutzler et al., 2019). Evidence suggests, for example, that involvement in service-learning may elicit positive changes in attitudes toward people with disabilities and perceived competence to teach children with disabilities (Case et al., 2020; Hodge et al., 2002; Lee et al., 2020; Taliaferro et al., 2015). Overtime, this line of research has been influential toward evaluating and improving student training, including through the development of expert consensus on essential characteristics of APE practicum experiences for preservice physical educators (Taliaferro & Bulger, 2020).

The majority of undergraduate programs in Physical Education Teacher Education (PETE) or Kinesiology rely on a single APA/APE course or service-learning experience to prepare students to work with people with disabilities (Kwon, 2018; Piletic & Davis, 2010). Accordingly, course instructors, or service-learning facilitators, are in central positions to plan meaningful, quality experiences for their students (Lillo, 2019). For example, course instructors are expected to effectively align service-learning with their lectures and course curriculum, provide feedback and guidance to students, and implement important learning activities, such as reflection (Whitley, 2014). In addition, due to the recent COVID-19 pandemic, traditional service-learning experiences in APA/APE were confronted by policies against in-person contact (Blagrave et al., 2021). This left many instructors in unprecedented positions to create hands-on experiences for their students through other means (e.g., virtual or remote programming) in response to COVID-19, in addition to their typical responsibilities.

Despite the unique positions of course instructors, minimal research has examined service-learning from the perspectives of course instructors or service-learning facilitators (Lillo, 2019; McNamara et al., in press). To date, two studies have surveyed course instructors across the field to obtain descriptive summaries of introductory APE/APA courses and the associated practicum or service-learning component (Kwon, 2018; Piletic & Davis, 2010). Piletic and Davis (2010) surveyed 136 PETE faculty members and Kwon (2018) surveyed 75 professors who taught introductory APE courses. While both of these studies described common characteristics (e.g., program objective, location, included populations) that have been useful for understanding APA/APE courses and associated service-learning components, the authors only provided information related to the educational background of the instructors. Other key instructor demographics or details of their experiences with facilitating service-learning were left out of this research.

McNamara et al. (in press) recently added to this literature through their qualitative examination of course instructors' perspective toward the content, including practical components, in their introductory APE courses. Among several questions, seven course instructors were asked to describe the service-learning associated with their course. Based on the interviews, the instructors largely emphasized the importance of their course's service-learning component. In addition, many expressed the value of these hands-on experiences toward favorably changing attitudes toward people with disabilities among their students. Interestingly, some of the participants offered views that, despite the potential benefits, service-learning within the course was not expected to fully prepare their students to teach students with disabilities (McNamara et al., in press). This study provides initial insight into the unique perspectives that course instructors may have with planning service-learning. However, additional studies are warranted to better understand instructors' experiences across the field. In particular, research that examines the challenges and supports to service-learning that instructors experience would be beneficial in order to help instructors provide quality service-learning to their students.

Previous literature recognizes the serious challenges and complexities of creating quality service-learning experiences, including within teacher education (Lillo, 2017, 2019). For example, teacher education faculty members identified lack of time and lack of alignment between service-learning and faculty roles as major barriers to implementing service-learning for preservice K-12 teachers (Anderson & Pickeral, 2000). In addition, Lillo (2019) describes that the success of service-learning depends on more than just programming and that various factors, including local setting, context, leadership, and university priorities, can challenge service-learning efforts. For these reasons, examining the challenges and supports to service-learning among APA/APE instructors is of value and has been called for by scholars in the field

(Taliaferro & Bulger, 2020). Exploring how instructors perceive various challenges and supports to service-learning at their university may provide preliminary information toward how to promote service-learning goals and improve programming for students. Moreover, evaluating how challenges and supports are influenced by university characteristics and instructor educational backgrounds as well as how they influence instructor behaviors within service-learning may have important implications for how to best support instructors.

The purpose of this study was to examine the challenges and supports to service-learning among instructors of APA/APE undergraduate courses. The first aim was to identify the most critical (a) challenges and (b) supports to service-learning among APA/APE course instructors. The second aim was to evaluate the influence of university characteristics and instructor characteristics on ratings of the (a) challenges and (b) supports to service-learning. The third aim was to examine the extent to which service-learning (a) challenges and (b) supports contribute to differences in behavior (i.e., virtual programming response to COVID-19) among course instructors. Findings will have implications for overcoming challenges and supporting course instructors who use service-learning in their courses.

Method

Sample

Participants

The participants in this study were 165 instructors of APA/APE courses from public or private not-for-profit universities in the U.S. Participants included in the study were current or previous instructors of APA/APE course that includes a service-learning component (n = 159, 96.4%) or professionals involved with APA/APE service-learning at their university (n = 6, 3.6%). One-hundred and seven participants (64.8%) were instructors at public universities whereas 58 (35.2%) taught at private not-for-profit universities. Fifty-six respondents (33.9%) majored in

Adapted Physical Activity or Adapted Physical Education while obtaining their highest academic degree, and 75 respondents (45.5%) reported having active certifications to teach PE or APE. The most commonly reported primary role in service-learning was faculty program director or supervisor (n = 82, 49.7%). Respondents from each major region of the United States were included in this study, with the most commonly reported university regions including the Midwest (n = 55, 33.3%) and the Southeast (n = 36, 21.8%). Table 3.1 presents additional demographic characteristics of the sample, and Table 3.2 presents characteristics of the instructors' universities.

****Insert table 3.1 here****

****Insert table 3.2 here****

Participant Identification and Recruitment

Target participants included instructors of APA/APE undergraduate courses with service-learning components offered at public and private not-for-profit, 4-year universities in the U.S. Universities with the potential to offer APA/APE undergraduate courses were identified using the U.S. Department of Education's National Center for Education Statistics *College Navigator* tool. College Navigator is a publicly available, online tool (https://nces.ed.gov/collegenavigator) that presents information of nearly 7,000 U.S. colleges and universities and has been used in previous research (Barnett et al., 2015; Deaner et al., 2012). Additional information regarding the data collection process for College Navigator can be found elsewhere (Ginder et al., 2018).

A College Navigator search was conducted in June 2020 that identified 869 universities that offer Bachelor's and/or Advanced Degrees in programs related to Kinesiology, Physical Education Teacher Education and Exercise Science. Trained assistants accessed each of the 869 universities' websites, the respective 2020-21 course catalog and/or the specific department's webpage to confirm that there was an APA/APE course. Instructor names and emails were

identified by searching each university's class schedule or contacting department chairs. To limit duplicate information of service-learning within data collection, only one instructor per university was included as a potential participant. Using this strategy, a total of 491 potential participants were identified by name and email. In addition, 10 service-learning facilitators who were not course instructors were invited directly by the lead researcher. In total, 501 people were invited to participate in the study.

Instrument

This study was one part of a larger project in which an online Qualtrics survey was developed to gather information related to APA/APE courses and associated service-learning components with people with disabilities at U.S. universities. The complete survey included 56 possible questions although the total number of items varied by participant based on their responses to certain questions (i.e., skip functions were used). The 19 survey questions used in this study included closed-ended questions to gather data on the following topics: (a) respondent demographic characteristics, (b) challenges to service-learning, (c) supports to service-learning, (d) beliefs about service-learning and (e) programming response to COVID-19.

The survey items measuring challenges and supports to service-learning were adapted from an existing survey used in previous literature to examine the challenges and strategies for success with service-learning in pre-service teacher education (Anderson & Pickeral, 2000). Anderson and Pickeral (2000) developed a survey in which teacher educators rated various service-learning issues organized into four types of challenges: institutional, curricular, faculty and student, and K-12 and community issues. For this study, the K-12 and community issues were adapted to include issues specifically related to APA/APE programming. In total, 22 challenge items in total were included in the survey. In addition, based on their results, Anderson and Pickeral (2000) presented support and success strategies for service-learning.

With guidance from their results and other service-learning literature, 12 separate items were included in the survey as supports to service-learning.

Before distribution, the survey was pilot tested by a panel of three judges who each have graduate degrees in APA/APE and expertise in coordinating experiential opportunities for undergraduate and graduate students. Judges were asked to rate each survey question for (a) readability and (b) content representation on a scale from 1 (poor) to 4 (excellent). The mean total scores for readability and content representation among the three judges were 3.95 and 3.85, respectively. Any questions that received a rating less than excellent were revised based on rater suggestions and/or discussed among the researchers.

Variables

Challenges. To measure challenges to survey-learning at each participant's university, survey respondents were prompted to rate 22 separate items that represent issues within service-learning. Items were rated on an ordinal scale from *not a challenge at all* (0) to *a critical challenge* (5) to service-learning at their university. The 22 items were organized and presented in the survey within 4 themes: institutional issues, curricular issues, faculty and student issues, and APE/APA programming issues. Responses were recoded on a scale from 1 to 6 for analysis due to easier mathematical calculation (i.e., no zero values).

Supports. To measure supports to service-learning at each participant's university, survey respondents were prompted to rate 12 separate items that represent potential supports within service-learning. Items were rated on an ordinal scale from *not a support at all* (0) to *a critical support* (5) to service-learning. Similar to the challenge variables, responses were recoded on a scale from 1 to 6 for analysis for easier mathematical calculation.

Response to COVID-19. Response to COVID-19 was defined using one survey item: "Did typical, in-person programming stop in response to COVID-19?" Response options included (a)

yes, it stopped completely, (b) *yes, but we offer remote or virtual programming*, or (c) *no, we still held in-person programming*. Responses with affirmative responses that in-person programming stopped in response to COVID-19 were then dichotomously collapsed to indicate if (1) virtual/remote programming was offered or (2) not.

University and instructor characteristics. Each of the university (2) and instructor (3) variables were defined using one survey item with closed-ended response options. University characteristics were defined by university type (public or private not-for-profit) and university region (West, Southwest, Midwest, Northeast, Southeast, Mid-Atlantic). Instructor characteristics were defined by major (APA/APE, Physical Education, or other), instructor's primary role in service-learning (faculty staff, instructor of associated course, or other), and teacher certification status (active certification or other).

Procedure

The study procedure received approval from the Institutional Review Board of the lead investigator's university. In November 2020, email invitations that included individualized links to the online Qualtrics survey were sent to each of the 501 potential participants. After the initial invitation was sent, three separate email reminders to complete the survey were sent approximately two, four, and six weeks later to those who had not yet completed the survey. All respondents who completed the survey consented to participate in the study. Data collection was closed by the lead researcher in the beginning of February 2021.

Data analysis

Preliminary data analysis

One-hundred and ninety-four people responded to the survey; however, 29 respondents were deleted from the final analysis. Nine respondents who completed the survey did not meet the inclusion criteria for involvement in APA/APE service-learning at their

university. Additionally, 20 respondents had large amounts of missing data (more than 50%) and were deleted from the sample. After deleting the 29 respondents, Little's Missing Completely at Random (MCAR) test (Little, 1988) was conducted to examine if the remaining missing data was random. The results of the MCAR test indicated that data was missing in a random manner (χ^2 [5034, n = 165] = 5065.69, p = 0.374). Therefore, Expectation Maximization was used to create a new dataset, in which all missing values were replaced with predicted values (Kang, 2013). All variables in which missing values were replaced had less than 25% missing values before EM. Missing values of any variables that were attached to skip functions in the survey were not included in the EM process in order to avoid bias. The final sample used in analysis included 165 participants. Based on this final sample, the rate of complete responses for this study is 32.9%. However, it is possible that the true response rate is larger due to potentially ineligible participants (e.g., instructors of APA/APE courses without service-learning) included in the calculation of the response rate.

Final data analysis

Descriptive statistics (e.g., frequency, proportion) and 95% confidence intervals (CI) were calculated for each variable of interest. The means, standard deviations, and 95% CIs for each instructor-rated challenge and support to service-learning were also calculated and ranked in descending order. To evaluate the influence of university (type, region) and instructor (major, primary role in service-learning, teacher certification status) characteristics on the mean ratings of (a) challenges and (b) supports to service-learning, five separate one-way ANOVAs were conducted to compare mean ratings among the sample. In addition, to examine the extent to which mean ratings of (1) challenges and (2) supports predicted virtual/remote programming in response to COVID-19, two separate binary logistic regression analyses were conducted. All

analyses were conducted using the Statistical Package for the Social Sciences (IBM Corporation, Version 27) and a significance level of 0.05.

Results

Descriptive statistics of Instructor-rated challenges, supports, and COVID-19 response

The range of ratings for each individual challenge across participants was 1 (no challenge at all) to 6 (critical challenge). Table 3.3 presents the mean ratings of each of the 22 challenges included in the survey in descending rank order. Figure 3.1 presents a forest plot of the means and 95% CIs of each challenge. The mean rating of all challenges across participants was 2.41 (SD = 0.97, 95% CI [2.26, 2.55]), which indicates an average low level of challenges experienced. Across the four categories of challenges, APA/APE programming issues were rated with the highest level of challenge (m = 2.64, SD = 1.13, 95% CI [2.46, 2.81]), followed by curricular issues (m = 2.48, SD = 1.18, 95% CI [2.30, 2.67]), institutional issues (m = 2.39, 1.16, [2.21, 2.57]), and faculty and student issues (m = 2.18, SD = 0.94, 95% CI [2.03, 2.32]). Among the individual challenge items, *lack of time to plan service-learning* was rated as the most critical challenge (m = 2.99, SD = 1.64, 95% CI [3.74, 3.24]), while *faculty not interested in service-learning* was rated as the least critical challenge (m = 1.56, SD = 0.97, 95% CI [1.41, 1.72]).

****Insert Table 3.3 here****

****Insert Figure 3.1 here****

Participant ratings of each individual support ranged from 1 (not a support at all) to 6 (critical support). Table 3.4 presents the mean ratings of each of the 12 supports in descending rank order. Figure 3.2 presents a forest plot of the means and 95% CIs of each support. Overall, the mean rating of all supports was 3.75 (SD = 1.18, 95% CI [3.57, 3.93]), suggesting a moderate level of support experienced on average. The most critical support was *adequate planning* (m =

4.18, SD = 1.67, 95% CI [3.92, 4.43]), while the least critical support was *parent or family involvement* (m = 2.90, SD = 1.65, 95% CI [2.64, 3.15].

****Insert Table 3.4 here****

****Insert Figure 3.2 here****

In response to COVID-19, 98 respondents (59.4%, 95% CI [0.52, 0.67]) indicated that in-person programming completely stopped while 55 respondents (33.3%, 95% CI [0.26, 0.41]) indicated that virtual or remote programming was implemented. Twelve respondents (7.3%, 95% CI [0.04, 0.12]) indicated that in-person programming did not stop. Among the 153 respondents who stopped typical, in-person programming, 105 respondents (68.6%, 95% CI [0.61, 0.76]) indicated that in-person programming would resume once it was safe, 40 (26.1%, 95% CI [0.19, 0.34]) were unsure, and 8 (5.2%, 95% CI [0.02, 0.10]) indicated that programming would not resume even when it was safe.

Differences in ratings based on university and instructor characteristics

Table 3.4 presents the results of each of the one-way ANOVAs that examined differences in mean ratings of challenges to service-learning based on university and instructor characteristics. No significant mean differences were found among the sample based on university type, region, service-learning role, or APA/APE major (see Table 3.4). However, a significant difference in mean ratings of challenges was found based on teacher certification status ($F(1, 163) = 4.35$, $p = .038$, $\eta^2 = 0.03$). Specifically, the mean challenge rating was significantly lower for participants with active teacher certifications (m = 2.24, SD = 0.95) than those without (m = 2.55, SD = 0.96). Equal variances were assumed according to Levene's test for equality of variance (F (1, 163) = .000, p = 0.98). To explore this relationship further, follow-up one-way ANOVAs were conducted to examine differences in ratings for the four specific categories of challenges. Significant differences in mean ratings of institutional challenges (*F*(1,

163) = 4.433, p = .037, η^2 = 0.03) and faculty/student challenges (F(1, 163) = 7.288, p = .008, h^2 = 0.04) were found based on teacher certification, with participants with active certifications rating challenges lower than those without for both challenge types. Equal variances were assumed for both analyses according to Levene's test for equality of variance (p > 0.05).

****Insert Table 3.5 here****

Table 3.5 presents the results of each of the one-way ANOVAs that examined differences in mean support ratings based on university and instructor characteristics. No significant differences in support ratings were found within any of the university or instructor grouping variables.

****Insert Table 3.6 here****

Relationship between challenges and supports to COVID-19 response

The results of the first binary logistic regression analysis suggest that the mean challenges rating does not significantly contribute to differences in response to COVID-19 between programs that stopped in-person programming (OR = 0.99, p = 0.93, 95% CI [.704, 1.38]). Follow-up analyses using the separate categories of challenges as predictor variables, as opposed to the mean of all challenges, showed similar, nonsignificant results for each predictor. The results of the second binary logistic regression suggest that the mean support ratings contributed to significant differences in program response (OR = 1.37, SE = .15, p = 0.04, 95% CI [1.02, 1.84]. Specifically, among programs that stopped in-person programming in response to COVID-19, for every one-unit increase in mean support ratings, there is a 1.37 increase in the odds of implementing virtual programming.

Discussion

This study is the first to explore the challenges and supports to APA/APE service-learning from the perspectives of undergraduate course instructors. Among all items, the supports that

were rated the highest by instructors included adequate planning, a well-trained staff, and a motivated leader. Alternatively, the three highest rated challenges to service-learning all related to lack of time, which is consistent with previous research (Anderson & Pickeral, 2000). To the authors' surprise, no differences were found in the mean ratings of supports based on any university or instructor characteristic examined in this study. Teacher certification status was the only university or instructor characteristic that contributed to differences in the ratings of challenges, with instructors without active certifications to teach PE or APE reporting significantly higher challenges than instructors with active certifications. In addition, mean supports were significantly related to virtual programming in response to COVID-19, but mean challenges were not significantly associated. The following discussion addresses how these findings contribute to existing literature and challenge the focus on eliminating barriers, instead of maximizing supports, within APA/APE service-learning.

Of the supports to service-learning examined in this study, those rated as the most critical to service-learning among instructors included adequate planning, a well-trained staff, and a motivated leader. Adequate planning has clear benefits and has been indicated as a facilitator to various initiatives and behaviors over time, including with APA/APE research (Haegele et al., 2018; Shields & Synnot, 2016; Wright et al., 2019). In addition, previous literature has similarly indicated that a trained staff is an important facilitator of after-school physical activity participation among children with disabilities (Obrusnikova & Miccinello, 2012), so it is no surprise that strong leadership variables support efforts in other types of APA/APE programming. An important next step, in research and among instructors, may be to identify strategies for how to ensure these supports can be cultivated within their own service-learning.

The least critical support to service-learning among instructors was family and parent involvement. This finding was unexpected as previous literature emphasizes the importance of

involving families of people with disabilities because of the unique support and guidance they may provide for programming (An & Hodge, 2013; Drum et al., 2009; Murphy & Carbone, 2008). In addition, in a previous study, allied health and sport clinicians identified parental support and motivation as a major facilitator of physical activity participation for children with disabilities (Wright et al., 2019). It is unknown at this time why parental and family support was not rated as a critical support to service-learning among instructors in this study. However, Naturkach and Goodwin (2019) suggest that people with disabilities who participated in APA service-learning report being largely left out of discussions and programming decisions. In addition, findings of additional work by the present authors (see results of manuscript #1) indicate that only a small proportion (<20%) of APA/APE service-learning include people with disabilities and their families in service-learning planning. Therefore, in contrast to the idea that parent or family involvement is not helpful to service-learning, the low rating for this item may instead reflect a lack of involvement or inclusion of parents and families of people with disabilities. Future research that explores the involvement or roles of parents and families of people with disabilities within APA/APE service learning is necessary to provide additional understanding of these results. Moreover, investigation of how involving people with disabilities and their families in service-learning impact student outcomes may promote their inclusion in programming.

It is interesting that the three most critical challenges to service-learning among instructors were all issues related to lack of time. This is consistent with findings from Anderson and Pickeral (2000), who examined the challenges to service-learning among teacher education faculty outside of PETE. The authors similarly reported that the three issues rated as most critical were faculty lack time to implement service-learning, lack of time in pre-service curriculum, and faculty lack the time to plan. In response to their findings, numerous recommendations were provided by their participants that may also be helpful in resolving or

minimizing challenges to APA/APE service-learning. For example, to address lack of time among faculty, faculty should focus on service-learning planning during “natural openings” (e.g., pauses in programming, accreditation periods, or summer terms) for program redesign (Anderson & Pickeral, 2000, p. 14). Faculty can also establish an advisory board of students, community members, people with disabilities and their family members, and faculty through which members can contribute to larger tasks such as planning, creating learning resources, and supervising pre-service teachers. In addition, to mitigate the challenge of lack of time in the pre-service curriculum, recommendations were made to integrate the various elements of service-learning throughout multiple courses so that instructors of a single course are not solely responsible for service-learning curriculum or the training goals within.

The recommendation to integrate service-learning into other courses so that no single course is overwhelmed aligns well with previous literature on APA/APE coursework (Kwon, 2018). For many years, scholars have documented and criticized the use of only one APA/APE course and one service-learning opportunity in APA/APE, if at all (Haegele et al., 2020; Piletic & Davis, 2010). While advocating for additional APA/APE courses and service-learning is important, until more learning opportunities are available, it is necessary to explore how to realistically create time to plan and implement service-learning to alleviate this specific challenge. Our findings suggest that adequate planning is a major support to service-learning in APA/APE. However, the instructors’ capacity to adequately plan service-learning may be directly limited as long as lack of time is a challenge. Therefore, not relying on service-learning as the main source of training in this area may also allow for more time and more adequate preparation (Anderson & Pickeral, 2000). For example, creating opportunities for undergraduate and graduate students to have a formal role in administrative planning may create more time for instructors, while also providing students access to build new skills and gain professional development. In addition,

infusing disability content (e.g., teaching modifications, social justice pedagogy) or alternative forms of contact with people with disabilities (e.g. video based contact) into other courses beyond APA/APE may contribute to similar service-learning objectives while alleviating the lack of time to plan (Kwon, 2018). Future research is needed to examine and confirm the learning effects for undergraduate students of integrating service-learning and APA/APE content throughout multiple courses as opposed to one.

Based on our findings, the only university or instructor characteristic that contributes to differences in mean rating of challenges was teacher certification, with respondents with active teaching certifications to teach PE or APE rating challenges as less critical than those without active certifications. The differences in challenge ratings based on teacher certifications are relatively small according to standard classifications of effect size (Cohen, 1988). Using common language effect size (Lakens, 2013), there is a 59.14% probability that a randomly sampled participant with active teacher certification will report a lower mean challenge rating than a randomly sampled participant without an active certification. However, discussing the possible justifications for these differences is worthwhile as this was the only variable examined in this study that influenced challenge or support ratings among instructors. First, it is possible that an active certification is indicative of current teaching practice and that participants with active certifications may be equally or more involved in the K-12 school system than at the university level (e.g., part-time or adjunct faculty or lecturers opposed to tenured faculty with full-time university roles). Therefore, the challenges specific to institutional issues and faculty/student issues may be less relevant to their assigned tasks and resultantly less critical. Alternatively, it is also possible that active certifications reflect ongoing professional development opportunities. Moreover, assuming that respondents with active certifications are currently teaching PE or APE in K-12 schools, they may be engaging in practical teaching experiences and professional

development that alleviate service-learning challenges more than those without active certifications. The present study did not collect data regarding whether or not course instructors are also teaching in public schools—future research that accounts for ongoing teaching or other professional development may provide additional insight into the influence of active certification on the challenges in service-learning.

Overall, with the exception of teacher certification, it was surprising that other university and instructor characteristics did not influence differences in ratings of challenges or supports in this study. This is inconsistent with other literature that has found differences in challenges between instructors from public versus private institutions, and between tenured and non-tenured track teacher education faculty (Anderson & Pickeral, 2000). Our results are therefore inconclusive at this time. It is possible that other factors, beyond our delimitations for this study, are related to challenges and supports and will be important to explore in the future. In addition, considering that previous literature in this area was not specific to APA/APE training, the lack of differences based on the factors examined in this study may highlight that the challenges and supports are unique to APA/APE and not dependent on instructor or university characteristics. These results provide an important building block for examining the complexities of service-learning among those who plan or facilitate the experiences for students. Future studies that examine the contribution of other contextual factors (e.g., instructor attitudes toward service-learning, training goals, use of best practices within programming) or use different research methods (e.g., qualitative) to explore the intricacies within the more critical challenges and supports to service-learning may further our understanding in this area.

Our results indicate that mean support ratings, but not mean challenges, were related to the implementation of virtual programming in response to COVID-19. Although it is important to recognize the challenges and complexities of service-learning, this result highlights that

efforts should be made to identify new and maximize supports to service-learning moving forward. In addition, it may be valuable to consider the pause or temporary change in programming due to COVID-19 as the “natural opening” in time needed to evaluate and redesign service-learning (Anderson & Pickeral, 2000). Course instructors and service-learning facilitators should consider how they can integrate available supports to service-learning and align service-learning with best-practice recommendations. We must acknowledge that virtual/remote programming response to COVID-19, the way in which behavior was delimited for this study, is certainly not the only important behavior relevant to course instructors and service-learning facilitators. Therefore, the extent to which challenges and supports relate to other service-learning behaviors, such as the use of best-practices, collaboration with the disability community, or implementation of important trainings, may be different. However, educators within APA/APE and other education fields are in new territories during COVID-19, so delimiting programming response to COVID-19 as a relevant behavior is timely for this study. Additionally, examining this specific behavior also highlights the significance of continuously being able to offer training opportunities to students and physical activity services to the disability community when other obstacles challenge in-person programming. While COVID-19 policies influence the most recent pause of in-person service-learning (Blagrave et al., 2021), it is important for instructors to have programming alternatives (e.g., virtual) in the face of other barriers (e.g., temporary loss of physical space). More research is needed to understand the impact of COVID-19 on APA/APE service-learning. At this time, however, these findings challenge the focus on minimizing barriers seen within the literature and highlight that supports to service-learning contributed to a behavioral outcome (e.g., virtual programming). Future research and evaluation efforts should focus on understanding how to increase supports to service-learning within and across the field.

Certain limitations in this study must be addressed. First, a pre-existing, quantitative survey that was developed for service-learning among teacher educators was used for this study and therefore may leave out important issues relevant to APA/APE (Anderson & Pickeral, 2000). To increase relevance to the present study's participants, the language and items of the survey were adapted to be more specific to university-based service-learning within APA/APE undergraduate courses and piloted by reviewers who have expertise in this area. However, it is possible that there are other, unique challenges and supports that the participants in this study were unable to address. Future studies may uncover additional challenges and supports in general or within some of the more critical issues.

In addition, differences in language of service-learning across the field may also limit our capacity to narrow in on the challenges and supports within APA/APE service-learning (Lillo, 2019). Over time, in APA/APE coursework, practice and literature, terminology such as *practicum*, *experiential learning*, *community engagement*, and others have been used interchangeably with service-learning. For this study, service-learning was purposefully, broadly defined to gather more information about formal, university-based opportunities for hands-on APA/APE training. Within this broad definition, it is possible that respondents define service-learning differently, which can limit the accuracy of our findings. To minimize the potential for this limitation, the survey used in this study explained that the programming of interest relates to university-based service-learning. In addition, respondents were screened for inclusion criteria at the start of the survey and responses were scanned and deleted if they were clearly representative of fieldwork experiences such as student teaching within the public school system. However, as more investigative work is dedicated toward evaluation of APA/APE service-learning, it will be important for scholars to, at minimum, acknowledge the definitions

they are using or operationally define each term and consistently use the appropriate terminology when referring to each program type.

This study examined the challenges and supports to APA/APE service-learning from the perspectives of undergraduate course instructors. Recommendations can be made that course instructors, service-learning facilitators, and associated faculty make efforts to increase factors that are supportive to service-learning at their university. In addition, challenges examined in this study present varying levels of challenges among the sample, but with relatively low average ratings. Future work in this area will benefit from research that identifies the intricate details of service-learning challenges that may not be captured using quantitative or group design methods. Moreover, considering findings of additional work of the present authors that suggest there are low proportions of service-learning using disability-centered best-practice recommendations, scholars should specifically examine the barriers or complexities to implementing important best-practices. The findings of this study contribute new knowledge of APA/APE service-learning and should be considered when supporting course instructors to facilitate quality programming for their students.

References

An, J., & Hodge, S. (2013). Exploring the meaning of parental involvement in physical education for students with developmental disabilities. *Adapted Physical Activity Quarterly*, *30*(2), 147–163. https://doi.org/10.1123/apaq.30.2.147

Anderson, J. B., & Pickeral, T. (2000). Challenges and strategies for success with service-learning in preservice teacher education. *National Society for Experiential Education Quarterly*, *25*(3), 7–22.

Barnett, K. B., McRee, A. L., Reiter, P. L., Paskett, E. D., & Katz, M. L. (2015). Cervical cancer prevention services at college health centers: Historically Black colleges and universities (HBCUs) compared to predominantly White institutions (PWIs). *Cancer Epidemiology and Prevention Biomarkers*, *24*(4), 758–758. https://doi.org/10.1158/1055-9965.EPI-15-0096

Blagrave, J., Young, A., & Bittner, M. (2021). *Community and service-learning programs go virtual*. The National Consortium for Physical Education for Individuals with Disabilities.

Case, L., Schram, B., Jung, J., Leung, W., & Yun, J. (2020). A meta-analysis on the effects of adapted physical activity service-learning programs on college student attitudes toward people with disabilities. *Disability and Rehabilitation*. https://doi.org/10.1080/09638288.2020.1727575

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Earlbaum Associates.

Deaner, R. O., Geary, D. C., Puts, D. A., Ham, S. A., Kruger, J., Fles, E., Winegard, B., & Grandis, T. (2012). A sex difference in the predisposition for physical competition: Males play sports much more than females even in the contemporary U.S. *PLoS ONE*, *7*(11), e49168–e49168. https://doi.org/10.1371/journal.pone.0049168

Drum, C., Peterson-Besse, J., Culley, C., Krahn, G., Heller, T., Kimpton, T., Mccubbin, J., Rimmer, J. H., Seekins, T., Suzuki, R., & White, G. (2009). Guidelines and criteria for the implementation of community-based health promotion programs for individuals with disabilities. *American Journal of Health Promotion*, *24*, 93–101, ii. https://doi.org/10.4278/ajhp.090303-CIT-94

Ginder, S. A., Kelly-Reid, J. E., & Mann, F. B. (2018). *2017–18 Integrated Postsecondary Education Data System (IPEDS) Methodology Report (NCES 2018-195)*. U.S. Department of Education. Washington, DC: National Center for Education Statistics. http://nces.ed.gov/pubsearch

Haegele, J., Yun, J., & Mccubbin, J. (2020). The need for preparing highly qualified faculty in adapted physical activity. *Palaestra*, *34*(3), 16–20.

Haegele, J., Zhu, X., & Davis, S. (2018). Barriers and facilitators of physical education participation for students with disabilities: An exploratory study. *International Journal of Inclusive Education*, *22*(2), 130–141. https://doi.org/10.1080/13603116.2017.1362046

Hodge, S. R., Davis, R., Woodard, R., & Sherrill, C. (2002). Comparison of practicum types in changing preservice teachers' attitudes and perceived competence. *Adapted Physical Activity Quarterly*, *19*(2), 155–171. https://doi.org/10.1123/apaq.19.2.155

Hodge, S. R., & Jansma, P. (1997). Attitude change of physical education majors toward teaching students with varied disability types. *Clinical Kinesiology*, *51*(4), 72–79. s3h.

Hodge, S. R., & Jansma, P. (1999). Effects of contact time and location of practicum experiences on attitudes of physical education majors. *Adapted Physical Activity Quarterly*, *16*(1), 48–63.

Hutzler, Y., Meier, S., Reuker, S., & Zitomer, M. (2019). Attitudes and self-efficacy of physical education teachers toward inclusion of children with disabilities: A narrative review of

international literature. *Physical Education and Sport Pedagogy*, *24*(3), 249–266. https://doi.org/10.1080/17408989.2019.1571183

Kang, H. (2013). The prevention and handling of the missing data. *Korean Journal of Anesthesiology*, *64*(5), 402–406. https://doi.org/10.4097/kjae.2013.64.5.402

Kenworthy-U'Ren, A. L. (2008). A decade of service-learning: A review of the field ten years after JOBE's seminal special issue. *Journal of Business Ethics*, *81*(4), 811–822. https://doi.org/10.1007/s10551-007-9549-3

Kwon, E. H. (2018). Status of introductory APE course and infusion in PETE program. *Palaestra*, *32*(1), 32–39.

Lakens, D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: A practical primer for t-tests and ANOVAs. *Frontiers in Psychology*, *4*. https://doi.org/10.3389/fpsyg.2013.00863

Lee, J., Chang, S. H., & Haegele, J. (2020). Does service learning Work? Attitudes of college students toward individuals with disabilities. *Journal of Experiential Education*, *43*(4), 365–380. https://doi.org/10.1177/1053825920918887

Lillo, S. (2017). Recognizing the complexity of service-learning and community engagement efforts: Facilitator standpoints from International Baccalaureate Organization secondary schools in Kenya, Ethiopia, and South Africa. *Journal of Research in International Education*, *16*(1), 110–110. https://doi.org/10.1177/1475240917691221

Lillo, S. (2019). In pursuit of community engagement: Unpacking the knowledge and skills associated with service-learning efforts. *Journal of Research in International Education*, *18*(1), 3–22. https://doi.org/10.1177/1475240919829997

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association*, *83*(404), 1198–1202. https://doi.org/10.1080/01621459.1988.10478722

McNamara, S. W. T., Lieberman, L., Wilson, K., & Colombo-Dougovito, A. (in press). "I mean I hate to say it's sink or swim, but..': College course instructors' perceptions of the adapted physical education content that they prioritize and teach. *Sport, Education and Society*. https://doi.org/10.1080/13573322.2021.1882978

Murphy, N. A., & Carbone, P. S. (2008). Promoting the participation of children with disabilities in sports, recreation, and physical activities. *Pediatrics*, *121*(5), 1057–1061. https://doi.org/10.1542/peds.2008-0566

Naturkach, R. T. M., & Goodwin, D. L. (2019). The unheard partner in adapted physical activity community service learning. *Adapted Physical Activity Quarterly*, *36*(2), 264–281. https://doi.org/10.1123/apaq.2018-0074

Obrusnikova, I., & Miccinello, D. L. (2012). Parent perceptions of factors influencing after-school physical activity of children with autism spectrum disorders. *Adapted Physical Activity Quarterly*, *29*(1), 63–80. https://doi.org/10.1123/apaq.29.1.63

Piletic, C. K., & Davis, R. (2010). A profile of the introduction to adapted physical education course within undergraduate physical education teacher education programs. *ICHPER-SD Journal of Research*, *5*(2), 26–32.

Richards, K. A. R., Wilson, W. J., & Eubank, L. (2012). Planning a service–learning program to benefit children with disabilities. *Journal of Physical Education, Recreation & Dance*, *83*(7), 32–45. https://doi.org/10.1080/07303084.2012.10598810

Rowe, J., & Stutts, R. M. (1987). Effects of practica type, experience, and gender on attitudes of undergraduate physical education majors toward disabled persons. *Adapted Physical Activity Quarterly*, *4*(4), 268–277. s3h.

Shields, N., & Synnot, A. (2016). Perceived barriers and facilitators to participation in physical activity for children with disability: A qualitative study. *BMC Pediatrics*, *16*(1), 9. https://doi.org/10.1186/s12887-016-0544-7

Taliaferro, A. R., & Bulger, S. M. (2020). A delphi study of effective adapted physical education practicum experiences. *Adapted Physical Activity Quarterly*, *37*(1), 20–40. https://doi.org/10.1123/apaq.2018-0199

Taliaferro, A. R., Hammond, L., & Wyant, K. (2015). Preservice physical educators' self- efficacy beliefs toward inclusion: The impact of coursework and practicum. *Adapted Physical Activity Quarterly*, *32*(1), 49–67. https://doi.org/10.1123/apaq.2013-0112

Whitley, M. A. (2014). A draft conceptual framework of relevant theories to inform future rigorous research on student service-learning outcomes. *Michigan Journal of Community Service Learning*, *20*(2), 19–40.

Wright, A., Roberts, R., Bowman, G., & Crettenden, A. (2019). Barriers and facilitators to physical activity participation for children with physical disability: Comparing and contrasting the views of children, young people, and their clinicians. *Disability and Rehabilitation*, *41*(13), 1499–1507. https://doi.org/10.1080/09638288.2018.1432702

Yorio, P., & 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*(1), 9–27. https://doi.org/10.5465/amle.2010.0072

Tables

Table 3.1 Participant demographics

Participant characteristic	n	%	95% CI
Age	165	-	-
25-34	22	13.3%	[.085, .195]
35-44	55	33.3%	[.262, .411]
45-54	29	17.6%	[.121, .243]
55-64	43	26.1%	[.195, .335]
65-74	16	9.7%	[.056, .153]
Race	165	-	-
Black of African American	9	5.5%	[.025, .101]
American Indian or Alaska Native	3	1.8%	[.004, .052]
Asian	7	4.2%	[.017, .085]
Native Hawaiian or Pacific Islander	0	0%	[.000, .022]
White	146	88.5%	[.826, .929]
Other	3	1.8%	[.004, .052]
Ethnicity	165	-	-
Hispanic or Latino	5	3.0%	[.010, .069]
Not Hispanic or Latino	160	97.0%	[.931, .990]
Disability Status	165	-	-
Yes	27	16.4%	[.111, .229]
No	138	83.6%	[.771, .889]
Primary Service-Learning Role	165	-	-
Student staff	9	5.5%	[.025, .101]
Faculty program director or supervisor	82	49.7%	[.418, .576]
Instructor of associated course	61	37.0%	[.296, .448]
Other	4	2.4%	[.007, .061]
Not formally involved	9	5.5%	[.025, .101]
Major of Highest Degree	165	-	-
Kinesiology or Exercise Science	26	15.8%	[.106, .222]
Physical Education	45	27.3%	[.206, .347]
Adapted Physical Education or Activity	56	33.9%	[.268, .417]
Health Education	2	1.2%	[.001, .043]
Special Education	7	4.2%	[.017, .085]
Physical or Occupational Therapy	1	0.6%	[.000, .033]
Other	28	17.0%	[.116, .236]
Teaching Certification (PE or APE)	165	-	-
Yes	75	45.5%	[.377, .534]
In the past	54	32.7%	[.256, .405]
Never	36	21.8%	[.158, .289]

Table 3.2. University characteristics

University characteristics	n	%	95% CI
Type	165	-	-
Public	107	64.8%	[.570, .721]
Private, not-for-profit	58	35.2%	[.279, .430]
Region	165	-	-
West	26	15.8%	[.106, .222]
Southwest	12	7.3%	[.038, .124]
Midwest	55	33.3%	[.262, .411]
Northeast	24	14.5%	[.095, .209]
Southeast	36	21.8%	[.158, .289]
Mid-Atlantic	12	7.3%	[.038, .124]

Table 3.3. Means and 95% CIs of challenges in descending rank order

Rank	Challenge Item	Type	Mean	95% CI
1	Lack of time to plan service-learning activities	C	2.99	[2.74, 3.24]
2	Faculty lack time necessary to implement service-learning	FS	2.95	[2.69, 3.21]
3	Lack of time in preservice curriculum	C	2.95	[2.69, 3.20]
4	Lack of resources to provide disability training	APE	2.84	[2.59, 3.09]
5	Lack of appropriate equipment	APE	2.81	[2.56, 3.07]
6	Difficulty implementing effective behavior management training	APE	2.76	[2.54, 3.03]
7	Lack of funds	I	2.76	[2.48, 2.98]
8	Liability and safety concerns	I	2.59	[2.36, 2.83]
9	Lack of sustained professional development opportunities	I	2.54	[2.34, 2.74]
10	Lack of service-learning curriculum	C	2.49	[2.24, 2.73]
11	Students unable to cope with participant behaviors and needs	FS	2.46	[2.24, 2.69]
12	Difficulty communicating with parents and families	APE	2.44	[2.20, 2.68]
13	Difficulty implementing appropriate teaching methods	APE	2.33	[2.13, 2.52]
14	Lack of administrative support	I	2.22	[2.13, 2.52]
15	Lack of alignment with faculty roles	I	2.19	[1.98, 2.45]
16	Lack of student interest in service-learning	FS	2.18	[1.96, 2.42]
17	Difficulty aligning service-learning with state/national teacher education standards	C	2.18	[1.95, 2.39]
18	Lack of alignment of service-learning with department priorities	I	2.06	[1.84, 2.27]
19	Ineffective collaboration between those involved	FS	1.98	[1.80, 2.16]
20	Faculty unprepared to integrate service-learning into teaching	FS	1.84	[1.66, 2.01]
21	Difficulty linking service-learning to lecture	C	1.82	[1.63, 2.00]
22	Faculty not interested in service-learning	FS	1.56	[1.41, 1.72]

Note. Items are rated in order from most critical to least critical challenge. APE, Adapted Physical Education; C, Curricular; FS, Faculty/Student; I, Institutional. Scores ranged from 0 (*not a challenge at all*) to 5 (*a critical challenge*) and were recoded on a scale from 1-6.

Table 3.4. Means and 95% CIs of support ratings in descending rank order

Rank	Support Item	Mean	95% CI
1	Adequate planning	4.18	[3.92, 4.43]
2	Well-trained staff	4.14	[3.89, 4.39]
3	Motivated leader or leadership team	4.12	[3.85, 4.39]
4	Collaboration among those involved	4.12	[3.86, 4.38]
5	High expectations of students	4.08	[3.84, 4.32]
6	High self-efficacy among students	3.87	[3.64, 4.11]
7	Adequate resources for training	3.83	[3.60, 4.06]
8	Favorable disability attitudes among students	3.73	[3.50, 3.97]
9	Multidisciplinary team approach	3.45	[3.12, 3.66]
10	Funding support	3.39	[3.19, 3.72]
11	Previous experience with individuals with disabilities among students	3.15	[2.92, 3.38]
12	Parent or family involvement	2.90	[2.64, 3.15]

Note. Items are rated in order from most critical to least critical support. Scores ranged from 0 (*not a support at all*) to 5 (*a critical support*) and were recoded on a scale from 1-6.

Table 3.5 One-way ANOVA results for mean challenge ratings by university and instructor characteristics

University Characteristic		n	m (SD)	*F*	*p*	η^2
Type	*Public*	107	2.46 (0.94)	.98	.324	0.01
	Private, not-for-profit	58	2.30 (1,00)			
Region	*West*	26	2.46 (1.01)	.51	.771	0.02
	Southwest	12	2.34 (0.81)			
	Midwest	55	2.36 (1.14)			
	Northeast	24	2.67 (1.05)			
	Southeast	36	2.33 (0.73)			
	Mid-Atlantic	12	2.25 (0.63)			
Instructor Characteristics		n	m (SD)	*F*	*p*	η^2
Major	*APA/APE*	56	2.34 (0.89)	0.21	.815	0.003
	Physical Education	45	2.42 (1.02)			
	Other	64	2.45 (1.00)			
Role in service-learning	*Faculty director/supervisor*	82	2.42 (0.96)	1.90	.153	0.02
	Course instructor	61	2.27 (0.90)			
	Other	22	2.73 (1.11)			
Certification	*Active*	75	2.24 (0.95)	4.35	.038*	0.03
	Inactive or never	90	2.55 (0.96)			

Note. m = mean; SD = standard deviation; F = F-statistic; p = p-value, η^2 = eta-squared effect size; *, $p < 0.05$

Table 3.6. One-way ANOVA results for mean support ratings by university and instructor characteristics

University Characteristic		n	m (SD)	*F*	*p*	η^2
Type	*Public*	107	3.80 (1.17)	.57	.451	0.003
	Private, not-for-profit	58	3.65 (1,21)			
Region	*West*	26	4.28 (1.07)	2.09	.069	0.06
	Southwest	12	3.08 (1.12)			
	Midwest	55	3.69 (1.28)			
	Northeast	24	3.85 (1.25)			
	Southeast	36	3.57 (1.07)			
	Mid-Atlantic	12	3.83 (0.82)			
Instructor Characteristics		**n**	**m (SD)**	***F***	***p***	η^2
Major	*APA/APE*	56	3.81 (1.16)	1.97	.142	0.02
	Physical Education	45	3.46 (1.25)			
	Other	64	3.89 (1.13)			
Role in service-learning	*Faculty director/supervisor*	82	3.83 (1.15)	0.91	.405	0.01
	Course instructor	61	3.75 (1.25)			
	Other	22	3.44 (1.12)			
Certification	*Active*	75	3.68 (1.26)	0.40	.530	0.002
	Inactive or never	90	3.80 (1.12)			

Note. m = mean; SD = standard deviation; F = F-statistic; p = p-value, η^2 = eta-squared effect size

Figures

Figure 3.1. Forest plot of mean challenge ratings

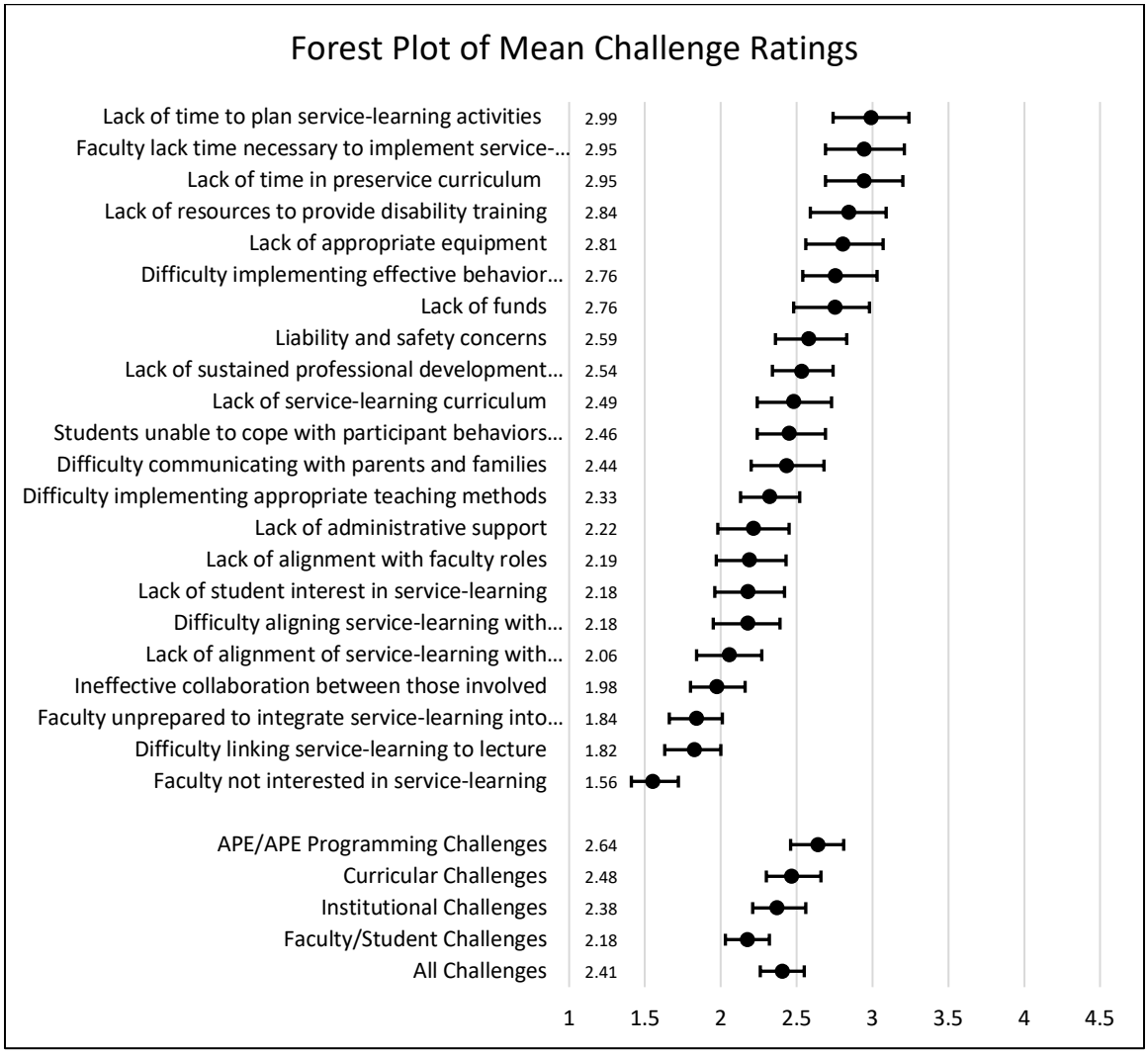
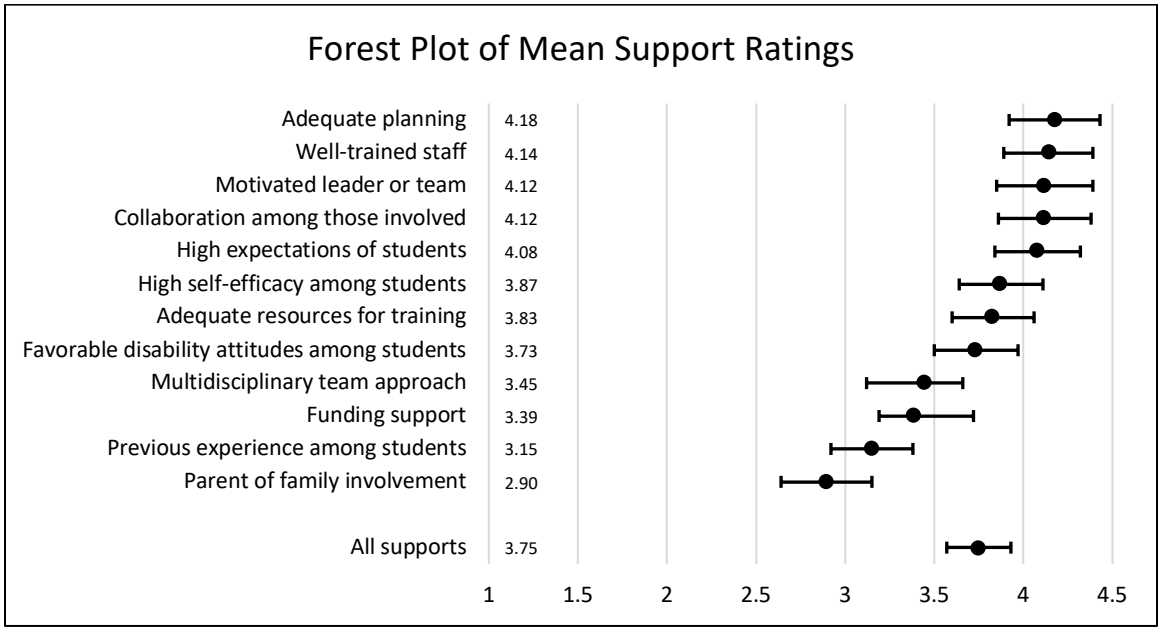


Figure 3.2. Forest plot of mean support ratings



CHAPTER IV. GENERAL CONCLUSION

This study lays the foundation for future work on aligning APA/APE service-learning with best-practice recommendations in the literature. Service-learning for undergraduate students, including preservice physical educators, is an integral component of professional preparation (Hutzler et al., 2019) and has elicited positive benefits, including improvements in attitudes toward people with disabilities (Case et al., 2020). The variability in service-learning programming observed in the literature, however, highlights the potential for differences in the quality of experience that undergraduate students may gain across the field (Whitley, 2014). While research has emphasized positive effects, the extent to which service-learning has implemented evidence-based or recommended practices is unclear (Case et al., 2020; Taliaferro & Bulger, 2020). In addition, the literature has primarily focused on describing best practices and examining the effects of service-learning for undergraduate students (Conway et al., 2009; Taliaferro & Bulger, 2020; Yorio & Ye, 2012), with minimal attention given to disability-centered best practices (Naturkach & Goodwin, 2019). However, service-learning is intended to be mutually beneficial and center around both groups involved, including undergraduate students and people with disabilities (Gent & Gurecka, 2001; National Youth Leadership Council, 2008). Therefore, it is imperative that efforts be made to examine how programming aligns with disability-centered best-practice recommendations.

In addition, researchers have previously suggested that there are serious complexities of service-learning that challenge the quality and potential success of the programs (Lillo, 2017, 2019). For example, teacher educators involved in service-learning reported that lack of time and lack of alignment between service-learning and faculty roles are critical barriers to implementing service-learning for preservice teachers (Anderson & Pickeral, 2000). These complexities can challenge service-learning efforts (Lillo, 2019), including the use of high-quality

or evidence-based practices. The goal of this dissertation was therefore to gain an updated summary of university-based APA/APE service-learning while evaluating the use of best-practice recommendations and exploring instructor-rated challenges and supports to service-learning. Results of this dissertations are presented and discussed within two manuscripts and have implications for service-learning programming and evaluation in APA/APE.

The purpose of the first manuscript was the evaluate the extent to which APA/APE service-learning at U.S. universities follows (a) student-centered best-practice recommendations, (b) disability-centered best-practice recommendations, and (c) recommendations for favorable attitude change toward people with disabilities. The specific aims were (1) to describe the proportions of service-learning programs that report to following best-practice recommendations, (2) to examine the differences between the use of student-centered versus disability-centered best-practice recommendations, and (3) to evaluate the extent to which attitude change objectives contribute to differences in implementing attitude change activities. Using online survey methods, data was collected from 165 participants to obtain information about APA/APE service-learning at their university. Findings suggest that relatively low proportions of universities are following the disability-centered recommendations examined in this study, and that significantly more student-centered best-practice recommendations are implemented than compared to disability-centered (median difference = 2, Z = -10.45, p < .001, 95% CI [1.5, 2.0]). Findings also suggest that programs with attitude change objectives do not have higher odds of implementing attitude change activities (OR = 1.14, p = .663, 95% CI [0.64, 2.04]). The results of this study draw attention to the limited implementation of important disability-centered practices, despite calls for people with disabilities to be equal partners in service-learning. In addition, our findings may suggest that

service-learning activities are misaligned with the objectives or outcomes of interest and warrant further evaluation.

The purpose of the second manuscript was to examine the challenges and supports to service-learning among instructors of APA/APE undergraduate courses. The first aim was to identify the most critical challenges and supports to service-learning among course instructors. The second aim was to evaluate the influence of several university and instructor characteristics on ratings of the (a) challenges and (b) supports to service-learning. The third aim was to examine the extent to which service-learning (a) challenges and (b) supports each contribute to differences in behavior (e.g., virtual programming response to COVID-19) among instructors. One-hundred and sixty-five participants completed an online survey that collected information related to their ratings of various challenges and supports to service-learning and service-learning programming response to COVID-19. Descriptive statistics indicate that the most critical challenges to service-learning among respondents all related to lack of time, whereas the most critical supports related to adequate planning and high-quality staff. The results of the 5 separate one-way ANOVAs that examined differences in mean challenge ratings indicated that the only university or instructor factor that contributed to significant differences in mean challenge ratings was active teacher certification ($F(1, 163) = 4.353$, $p = .038$, $\eta^2 = 0.03$). Based on the results of the separate one-way ANOVAs that examined differences in mean ratings of supports to service-learning, no significant differences were found within any of the university or instructor grouping variables. In addition, the binary logistic regression results suggest that the mean support ratings positively predicted virtual programming in response to COVID-19 (OR = 1.37, SE = .15, p = 0.04, 95% CI [1.02, 1.84]), while mean barrier ratings did not contribute to differences in program response (OR = 0.99, $p = 0.93$, 95% CI [.704, 1.38]). The results of this study highlight that the main supports to service-learning may be limited by the main challenges

reported among course instructors. To support course instructors, efforts should be made to maximize planning while allowing for more time. Integrating service-learning, hands-on training, and APA/APE content into other courses in the curriculum may be beneficial and lowers the responsibility of one course to sufficiently prepare students to work with disabilities. In addition, our findings suggest that maximizing supports, rather than eliminating barriers, may be more influential for instructor behavior within service-learning.

Collectively, the findings from this study have the potential to influence the way APA/APE scholars evaluate and design service-learning experiences for their students. University-based service-learning is often closely connected with academic courses and, as such, it is important and expected that student learning objectives are emphasized. However, this focus should not limit our use of strategies that are intended to benefit and include people with disabilities in our programs. Researchers have reported that people with disabilities want to be included in APA/APE service-learning planning yet may be excluded (Naturkach & Goodwin, 2019). Service-learning facilitators and course instructors should explore how the disability-centered guidelines and best-practice recommendations examined in this study may be incorporated into their own programming.

While these findings provide a preliminary examination of how service-learning programming aligns with multiple sets of best-practice recommendations, more studies are needed to further explore important relationships that contribute to high quality service-learning in APA/APE. For example, research efforts should be made to investigate how service-learning activities and pedagogy strategies effectively align with the most common objectives of interest within APA/APE service-learning. In addition, while this study broadly explored the challenges and supports to service-learning that course instructors may have, future studies should be made that specifically examine the barriers and facilitators to implementing disability-

centered best-practice recommendations. Continued research in this area may have important implications for understanding how to better support service-learning facilitators, including to use disability-centered programming and plan high-quality experiences for their students. In addition, it is important to acknowledge the unique timing of this research. Based on our results, the large majority (92.8%) of service-learning stopped typical in-person programming in response to COVID-19, with 33.3% implementing virtual or remote programming. Previous research has suggested that service-learning facilitators should use “natural openings” for program redesign to improve service-learning (Anderson & Pickeral, 2000). Therefore, the pause or temporary change in programming due to COVID-19 may be a valuable opportunity to consider our results and reflect on what best-practice recommendations are missing from, but have the capacity to be integrated into, our respective programs. It is also important to consider how the service-learning experiences we plan align with the populations who participate and the specific learning or research objectives we would like to meet.

CHAPTER V. BIBLIOGRAPHY

Allport, G. W. (1954). *The nature of prejudice*. Addison-Wesley.

An, J., & Hodge, S. (2013). Exploring the meaning of parental involvement in physical education for students with developmental disabilities. *Adapted Physical Activity Quarterly*, *30*(2), 147–163. https://doi.org/10.1123/apaq.30.2.147

Anderson, J. B., & Pickeral, T. (2000). Challenges and strategies for success with service-learning in preservice teacher education. *National Society for Experiential Education Quarterly*, *25*(3), 7–22.

Association of American Colleges and Universities. (2007). *College learning for the new global century: A report from the national leadership council for liberal education & america's promise*. Association of American Colleges and Universities.

Barnett, K. B., McRee, A. L., Reiter, P. L., Paskett, E. D., & Katz, M. L. (2015). Cervical cancer prevention services at college health centers: Historically Black colleges and universities (HBCUs) compared to predominantly White institutions (PWIs). *Cancer Epidemiology and Prevention Biomarkers*, *24*(4), 758–758. https://doi.org/10.1158/1055-9965.EPI-15-0096

Bergman, M. M., & Hanson, C. S. (2000). The relationship between participation in a sports camp and students' attitudes towards persons with disabilities. *Occupational Therapy in Health Care*, *12*(4), 51–63.

Blagrave, J., Young, A., & Bittner, M. (2021). *Community and service-learning programs go virtual*. The National Consortium for Physical Education for Individuals with Disabilities.

Brooks, D. D., Harrison Jr, L., Norris, M., & Norwood, D. (2013). Why we should care about diversity in Kinesiology. *Kinesiology Review*, *2*(3), 145–155.

Burden, J., Hodge, S., & Harrison, L. (2012). Teacher educators' views about social justice pedagogies in Physical Education Teacher Education. *Journal of Curriculum and Teaching*, *1*(1), 6–21. https://doi.org/10.5430/jct.v1n1p6

Carlson, W., & Witschey, H. (2018). Undergraduate students' attitudes toward individuals with disabilities: Integrating psychology disability curriculum and service-learning. *Teaching of Psychology*, *45*(2), 189–192. https://doi.org/10.1177/0098628318762929

Case, L., Schram, B., Jung, J., Leung, W., & Yun, J. (2020). A meta-analysis on the effects of adapted physical activity service-learning programs on college student attitudes toward people with disabilities. *Disability and Rehabilitation*. https://doi.org/10.1080/09638288.2020.1727575

Centers for Disease Control and Prevention. (2021). *Coronavirus Disease 2019 (COVID-19)*. https://www.cdc.gov/dotw/covid-19/index.html

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Earlbaum Associates.

Conner, J. E. (2017). When does service-learning work? *Michigan Journal of Community Service Learning*, *23*(2), 53–65. http://dx.doi.org/10.3998/mjcsloa.3239521.0023.204

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*(4), 233–245.

Deaner, R. O., Geary, D. C., Puts, D. A., Ham, S. A., Kruger, J., Fles, E., Winegard, B., & Grandis, T. (2012). A Sex Difference in the Predisposition for Physical Competition: Males Play Sports Much More than Females Even in the Contemporary U.S. *PLoS ONE*, *7*(11), e49168–e49168. https://doi.org/10.1371/journal.pone.0049168

Deci, E., & Ryan, R. (1980). Self-determination theory: When mind mediates behavior. *The Journal of Mind and Behavior*, *1*(1), 33–43.

Drum, C., Peterson-Besse, J., Culley, C., Krahn, G., Heller, T., Kimpton, T., Mccubbin, J., Rimmer, J. H., Seekins, T., Suzuki, R., & White, G. (2009). Guidelines and criteria for the implementation of community-based health promotion programs for individuals with disabilities. *American Journal of Health Promotion*, *24*, 93–101, ii. https://doi.org/10.4278/ajhp.090303-CIT-94

Dunn, D. (2015). *The Social Psychology of Disability*. Oxford University Press.

Folsom-Meek, S. L., Nearing, R. J., Groteluschen, W., & Krampf, H. (1999). Effects of academic major, gender, and hands-on experience on attitudes of preservice professionals. *Adapted Physical Activity Quarterly*, *16*(4), 389–402.

Gent, P. J., & Gurecka, L. E. (2001). Service-learning: A disservice to people with disabilities? *Michigan Journal of Community Service Learning*, *8*(1), 36–43.

Ginder, S. A., Kelly-Reid, J. E., & Mann, F. B. (2018). *2017–18 Integrated Postsecondary Education Data System (IPEDS) Methodology Report (NCES 2018-195)*. U.S. Department of Education. Washington, DC: National Center for Education Statistics. http://nces.ed.gov/pubsearch

Haegele, J., Yun, J., & Mccubbin, J. (2020). The need for preparing highly qualified faculty in adapted physical activity. *Palaestra*, *34*(3), 16–20.

Haegele, J., Zhu, X., & Davis, S. (2018). Barriers and facilitators of physical education participation for students with disabilities: An exploratory study. *International Journal of Inclusive Education*, *22*(2), 130–141. https://doi.org/10.1080/13603116.2017.1362046

Healy, S., Judge, J. P., Block, M. E., & Kwon, E. H. (2016). Preparing adapted physical educators to teach students with autism: Current practices and future directions. *Physical Educator*, *73*(1), 97–109.

Hodge, S. R. (1998). Prospective physical education teachers' attitudes toward teaching students with disabilities. *Physical Educator*, *55*(2), 68–77.

Hodge, S. R., Davis, R., Woodard, R., & Sherrill, C. (2002). Comparison of practicum types in changing preservice teachers' attitudes and perceived competence. *Adapted Physical Activity Quarterly*, *19*(2), 155–171. https://doi.org/10.1123/apaq.19.2.155

Hodge, S. R., & Jansma, P. (1997). Attitude change of physical education majors toward teaching students with varied disability types. *Clinical Kinesiology*, *51*(4), 72–79. s3h.

Hodge, S. R., & Jansma, P. (1999). Effects of contact time and location of practicum experiences on attitudes of physical education majors. *Adapted Physical Activity Quarterly*, *16*(1), 48–63.

Hodge, S. R., Tannehill, D., & Kluge, M. A. (2003). Exploring the meaning of practicum experiences for PETE students. *Adapted Physical Activity Quarterly*, *20*(4), 381–399. https://doi.org/10.1123/apaq.20.4.381

Hodge, S. R., & Wiggins, D. (2010). The African American experience in Physical Education and Kinesiology: Plight, pitfalls, and possibilities. *Quest*, *62*(1), 35–60. https://doi.org/10.1080/00336297.2010.10483631

Holsapple, M. A. (2012). Service-learning and student diversity outcomes: Existing evidence and directions for future research. *Michigan Journal of Community Service Learning*, *18*(2), 5–18.

Hunt, C. S., & Hunt, B. (2004). Changing attitudes toward people with disabilities: Experimenting with an educational intervention. *Journal of Managerial Issues*, *16*(2), 266–280.

Hutzler, Y., Meier, S., Reuker, S., & Zitomer, M. (2019). Attitudes and self-efficacy of physical education teachers toward inclusion of children with disabilities: A narrative review of international literature. *Physical Education and Sport Pedagogy*, *24*(3), 249–266. https://doi.org/10.1080/17408989.2019.1571183

Johnson, M., Magnussen, S., Thoresen, C., Lønnum, K., Burrell, L. V., & Melinder, A. (2015). Best practice recommendations still fail to result in action: A national 10-year follow-up study of investigative interviews in CSA cases. *Applied Cognitive Psychology*, *29*(5), 661–668. https://doi.org/10.1002/acp.3147

Kang, H. (2013). The prevention and handling of the missing data. *Korean Journal of Anesthesiology*, *64*(5), 402–406. https://doi.org/10.4097/kjae.2013.64.5.402

Kenworthy-U'Ren, A. L. (2008). A decade of service-learning: A review of the field ten years after JOBE's seminal special issue. *Journal of Business Ethics*, *81*(4), 811–822. https://doi.org/10.1007/s10551-007-9549-3

Kocman, A., & Weber, G. (2018). Assessment of job satisfaction in people with intellectual disabilities: Towards best-practice recommendations. *Journal of Applied Research in Intellectual Disabilities*, *31*(5), 804–819. https://doi.org/10.1111/jar.12434

Kraus, L. E., & Jans, L. (2014). *Disability Inclusion in Physical Activity, Nutrition, and Obesity Programs and Policies Implementation Manual*. Center on Disability at the Public Health Institute.

Kwon, E. H. (2018). Status of introductory APE course and infusion in PETE program. *Palaestra*, *32*(1), 32–39.

Lakens, D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: A practical primer for t-tests and ANOVAs. *Frontiers in Psychology*, *4*. https://doi.org/10.3389/fpsyg.2013.00863

Lavay, B. (2019). Behavior management: What I have learned. *Journal of Physical Education, Recreation & Dance*, *90*(3), 5–9. https://doi.org/10.1080/07303084.2019.1559646

Lavay, B., Guthrie, S., & Henderson, H. (2014). The behavior management training and teaching practices of nationally Certified Adapted Physical Education (CAPE) teachers. *Palaestra*, *28*(1), 24–31.

Lee, J., Chang, S. H., & Haegele, J. (2020). Does service learning Work? Attitudes of college students toward individuals with disabilities. *Journal of Experiential Education*, *43*(4), 365–380. https://doi.org/10.1177/1053825920918887

Lee, J., Santiago, J. A., Chang, S. H., & Haegele, J. (2017). Academic community engagement research in kinesiology: Undergraduate students' attitudes toward individuals with disabilities. In *Community Engagement Findings Across the Disciplines: Applying Course Content to Community Needs*. Rowman & Littlefield.

Levac, D., Glegg, S. M. N., Camden, C., Rivard, L. M., & Missiuna, C. (2015). Best practice recommendations for the development, implementation, and evaluation of online knowledge translation resources in rehabilitation. *Physical Therapy*, *95*(4), 648–662. https://doi.org/10.2522/ptj.20130500

Li, C., & Wang, C. K. J. (2013). Effect of exposure to Special Olympic Games on attitudes of volunteers towards inclusion of people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, *26*(6), 515–521. https://doi.org/10.1111/jar.12053

Lillo, S. (2017). Recognizing the complexity of service-learning and community engagement efforts: Facilitator standpoints from International Baccalaureate Organization secondary schools in Kenya, Ethiopia, and South Africa. *Journal of Research in International Education*, *16*(1), 110–110. https://doi.org/10.1177/1475240917691221

Lillo, S. (2019). In pursuit of community engagement: Unpacking the knowledge and skills associated with service-learning efforts. *Journal of Research in International Education*, *18*(1), 3–22. https://doi.org/10.1177/1475240919829997

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association*, *83*(404), 1198–1202. https://doi.org/10.1080/01621459.1988.10478722

McKay, C., Park, J. Y., & Block, M. (2018). Fidelity criteria development: Aligning paralympic school day with contact theory. *Adapted Physical Activity Quarterly*, *35*(2), 233–242. https://doi.org/10.1123/apaq.2017-0064

McNamara, S. W. T., Lieberman, L., Wilson, K., & Colombo-Dougovito, A. (in press). "I mean I hate to say it's sink or swim, but..': College course instructors' perceptions of the adapted physical education content that they prioritize and teach. *Sport, Education and Society*. https://doi.org/10.1080/13573322.2021.1882978

Murphy, N. A., & Carbone, P. S. (2008). Promoting the participation of children with disabilities in sports, recreation, and physical activities. *Pediatrics*, *121*(5), 1057–1061. https://doi.org/10.1542/peds.2008-0566

National Youth Leadership Council. (2008). *K-12 Service-Learning Standards for Quality Practice*. https://nylc.org/service-learning/

Naturkach, R. T. M., & Goodwin, D. L. (2019). The unheard partner in adapted physical activity community service learning. *Adapted Physical Activity Quarterly*, *36*(2), 264–281. https://doi.org/10.1123/apaq.2018-0074

Neitzel, J. (2010). Positive behavior supports for children and youth with autism spectrum disorders. *Preventing School Failure: Alternative Education for Children and Youth*, *54*(4), 247–255. https://doi.org/10.1080/10459881003745229

Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education*, *7*(2), 133–144. https://doi.org/10.1177/1477878509104318

Obrusnikova, I., & Miccinello, D. L. (2012). Parent perceptions of factors influencing after-school physical activity of children with autism spectrum disorders. *Adapted Physical Activity Quarterly*, *29*(1), 63–80. https://doi.org/10.1123/apaq.29.1.63

Pangelinan, M., Norcross, M., MacDonald, M., Rudisill, M., Wadsworth, D., & McDonald, J. (2018). Development, management, and evaluation of undergraduate experiential learning: Recommendations for best practices. *Kinesiology Review*, *7*(4), 339–344. https://doi.org/10.1123/kr.2018-0044

Perlman, D., & Piletic, C. (2012). The influence of an adapted physical education course on preservice teacher instruction: Using a self-determination lens. *Australian Journal of Teacher Education*, *37*(1), 1–17. https://doi.org/10.14221/ajte.2012v37n1.6

Pettigrew, T., & Tropp, L. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, *90*(5), 751–783. https://doi.org/10.1037/0022-3514.90.5.751

Pettigrew, T., & Tropp, L. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*, *38*(6), 922–934. https://doi.org/10.1002/ejsp.504

Pettigrew, T., Tropp, L., Wagner, U., & Christ, O. (2011). Recent advances in intergroup contact theory. *International Journal of Intercultural Relations*, *35*(3), 271–280. https://doi.org/10.1016/j.ijintrel.2011.03.001

Piletic, C. K., & Davis, R. (2010). A profile of the introduction to adapted physical education course within undergraduate physical education teacher education programs. *ICHPER-SD Journal of Research*, *5*(2), 26–32.

Richards, K. A. R., Wilson, W. J., & Eubank, L. (2012). Planning a service–learning program to benefit children with disabilities. *Journal of Physical Education, Recreation & Dance*, *83*(7), 32–45. https://doi.org/10.1080/07303084.2012.10598810

RMC Research Corporation. (2008). *Standards and indicators for effective service-learning practice*. National Service-Learning Clearinghouse. http://www.servicelearning.org/instant_info/fact_sheets/k-12_facts/engagement/

Roth, D., Pure, T., Rabinowitz, S., & Kaufman-Scarborough, C. (2018). Disability awareness, training, and empowerment: A new paradigm for raising disability awareness on a university campus for faculty, staff, and students. *Social Inclusion*, *6*(4), 116–124. https://doi.org/10.17645/si.v6i4.1636

Rowe, J., & Stutts, R. M. (1987). Effects of practica type, experience, and gender on attitudes of undergraduate physical education majors toward disabled persons. *Adapted Physical Activity Quarterly*, *4*(4), 268–277. s3h.

Santistevan Matthews, P. D., Hawken, L. S., Burrow-Sánchez, J. J., Peterson, P. J., & Fields, M. K. (2007). Preservice Special Education Service Providers' Attitudes on Diversity. *Multicultural Learning and Teaching*, *2*(1), 39–51.

Schoffstall, J., & Ackerman, B. (2007). Attitudes of pre-service physical educators at a faith-based university toward individuals with disabilities. *Journal of Beliefs & Values*, *28*(2), 183–193. https://doi.org/10.1080/13617670701485789

Shields, N., & Synnot, A. (2016). Perceived barriers and facilitators to participation in physical activity for children with disability: A qualitative study. *BMC Pediatrics*, *16*(1), 9. https://doi.org/10.1186/s12887-016-0544-7

Shields, N., & Taylor, N. F. (2014). Contact with young adults with disability led to a positive change in attitudes toward disability among physiotherapy students. *Physiotherapy Canada*, *66*(3), 298–305. https://doi.org/10.3138/ptc.2013-61

Stewart, C. C. (1990). Effect of practica types in preservice adapted physical education curriculum on attitudes toward disabled populations. *Journal of Teaching in Physical Education*, *10*(1), 76–83.

Taliaferro, A. R., & Bulger, S. M. (2020). A delphi study of effective adapted physical education practicum experiences. *Adapted Physical Activity Quarterly*, *37*(1), 20–40. https://doi.org/10.1123/apaq.2018-0199

Taliaferro, A. R., Hammond, L., & Wyant, K. (2015). Preservice physical educators' self- efficacy beliefs toward inclusion: The impact of coursework and practicum. *Adapted Physical Activity Quarterly*, *32*(1), 49–67. https://doi.org/10.1123/apaq.2013-0112

Watters, A. L., Stabulas-Savage, J., Toppin, J. D., Janal, M. N., & Robbins, M. R. (2015). Incorporating experiential learning techniques to improve self-efficacy in clinical special care dentistry education. *Journal Of Dental Education*, *79*(9), 1016–1023.

Whitley, M. A. (2014). A draft conceptual framework of relevant theories to inform future rigorous research on student service-learning outcomes. *Michigan Journal of Community Service Learning*, *20*(2), 19–40.

Winnick, J. P., & Porretta, D. L. (2017). *Adapted Physical Education and Sport* (6th ed.). Human Kinetics.

Wright, A., Roberts, R., Bowman, G., & Crettenden, A. (2019). Barriers and facilitators to physical activity participation for children with physical disability: Comparing and contrasting the views of children, young people, and their clinicians. *Disability and Rehabilitation*, *41*(13), 1499–1507. https://doi.org/10.1080/09638288.2018.1432702

Yorio, P., & 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*(1), 9–27. https://doi.org/10.5465/amle.2010.0072

CHAPTER VI. APPENDICES

APPENDIX A. LITERATURE REVIEW

Service-learning is an essential component of undergraduate student education and is reported as a key feature of professional training in adapted physical activity and education (APA/APE) disciplines. This dissertation study describes service-learning opportunities within undergraduate adapted physical activity/education courses at U.S. universities, examines alignment of service-learning with best-practices, and explores instructor-reported challenges and supports to service-learning. The following literature review will provide a brief overview of the current literature related to major components of this dissertation.

Service-Learning Intervention

Service-learning is an educational strategy that has been strongly advocated for within previous literature (Conway, Amel, & Gerwien, 2009; Yorio & Ye, 2012). Also referred to as experiential learning or hands-on experience, service-learning is both an instructional and learning practice that provides university students with opportunities to directly experience issues and content that are discussed within and beyond the classroom (National Youth Leadership Council, 2008). Service-learning practice is often linked to course curriculums, includes multiple opportunities for reflection and guided learning, and should be mutually beneficial to all groups involved. Service-learning also often allows for groups from different backgrounds, including people with and without disabilities, to make meaningful contact and share experiences, which has been shown to have advantages such as positive attitude change and increased empathy and understanding (Dunn, 2015; Pettigrew & Tropp, 2006)

A large body of literature suggests that service-learning positively impacts a variety of outcomes among program participants, including college student volunteers (Conway et al., 2009; Yorio & Ye, 2012). A meta-analysis of the effects of service-learning on academic, personal, social, and citizenship outcomes, by Conway and colleagues (2009), found that service-

learning is a valuable tool to promote positive changes in its participants, and that effects vary across programs. Specifically, the authors found that the largest effect sizes were seen within academic outcomes, such as GPA and grades, and beliefs and attitudes toward those being served through service-learning (Conway et al., 2009). In addition, service-learning has also been noted to be an important and effective instructional strategy for improving perceived competence and teacher preparation (Taliaferro et al., 2015), understanding social issues (Yorio & Ye, 2012), and attitudes and self-efficacy towards teaching children with disabilities (Wickline et al., 2016; Wozencroft et al., 2015). Despite documented improvements in a variety of outcomes, multiple factors and dimensions within the service-learning experience, including course variables, student variables, and activity variables, may affect student outcomes (Whitley, 2014). Resultantly, not all service-learning programs and experiences are similar.

Reflective activities have been documented as an important component of service-learning and have been highlighted as critical for successful service-learning experiences. Reflection involves helping students make connections between course content and the service experience and allows the students to consider how they may be different or impacted by service-learning (Yorio & Ye, 2012). Researchers have explored the relationship between reflection and service-learning outcomes among program participants (Conway et al., 2009; Yorio & Ye, 2012). For example, Conway and colleagues (2009) found that service-learning experiences that included structured reflections produced greater changes in outcomes when compared to experiences that did not include or report the use of reflection. Differences in effect sizes between these two were relatively large (Conway et al., 2009). Similarly, in a meta-analysis examining the effects of service-learning among college students, Yorio and Ye (2012) highlighted that reflective activities within service learning had positive impacts on the participants' understanding of social issues after the experience. Additionally, the results

revealed that discussion reflection had a significantly larger impact on understanding social issues compared to written reflections (Yorio & Ye, 2012), indicating that specific types of reflections can be more beneficial than others.

Adapted Physical Activity Service-Learning

More specifically, service-learning has long been a common format used within Kinesiology and Adapted Physical Activity practicum in order to provide learning and teaching opportunities to preservice physical education teachers and other university students working with children and individuals with disabilities (Hodge, 1998). As described in relevant literature, service-learning within the field of adapted physical activity typically include university student volunteers or university students enrolled in a Kinesiology or Adapted Physical Education course and associated practicum, through which students work with youth and/or individuals with various disabilities in physical activity, motor skill, sport, or aquatic settings. For example, Taliaferro and colleagues (2015) examined the self-efficacy beliefs toward including individuals with disabilities of 98 undergraduate students enrolled in a 15-week Adapted Physical Education course with an associated lab practicum. During the practicum, college students worked with individuals with disabilities between the ages of 5 and 19 years in either a motor skill or aquatic learning environment (Taliaferro et al., 2015). Other service-learning programs within adapted physical activity have included Special Olympics program (Li & Wang, 2013), individualized fitness programming for a university student with disabilities (Craig, 1990), and weekly walking programs (Shields & Taylor, 2014a), in which university students are paired or grouped with individuals with disabilities.

Researchers have shown that service-learning interventions within adapted physical activity have led to a variety of effects among university students. For example, (Hodge et al., 2002) compared the effects of on-campus and off-campus service-learning practicums on

physical education teacher education (PETE) students' attitudes and perceived competence toward teaching children with physical and intellectual disabilities. The authors found that attitude scores among the participants did not significantly differ from pre-test to post-test with on- or off-campus practicum. However, the results suggested that perceived competence improved significantly in response to both practicum types. In addition to the above study, researchers have also found that adapted physical activity service learning and practicum have revealed significant improvements in attitudes toward people with disabilities (Shields & Taylor, 2014a), self-efficacy beliefs toward including individuals with disabilities within Physical Education (Taliaferro et al., 2015), as well as improvements in self-reported professional behaviors and the likelihood of working with people with disabilities beyond the service-learning program (Shields & Taylor, 2014a).

Over time, increased attention has been placed on the importance of positive attitudes of professionals, such as Physical Educators, working with children with disabilities (Hutzler et al., 2019), with researchers suggesting that service-learning may be a valuable tool in improving attitudes toward people with disabilities among college students. Multiple studies within adapted physical activity research have examined the effects of service-learning specifically on college student attitudes toward disability, toward teaching students with disabilities, and toward inclusion of children with disabilities (Case et al., 2020.). However, inconsistencies regarding the extent to which attitudes are impacted by service learning remain in the literature (Hodge et al., 2002; Li & Wang, 2013; Wozencroft et al., 2015). A recent meta-analysis examined the effects of adapted physical activity service learning on college student attitudes among 14 studies, and suggested that, collectively, service-learning programs have positive yet small effects, with variability in the effects across service-learning programs (Case et al., 2020). According to the results, programs that include voluntary participation, do not include lecture

components, are hosted off-campus, and promote common goals between students and individuals with disabilities have larger effects on attitudes than programs that are mandatory, associated with a lecture, on-campus, and promote teacher-centered goals, respectively. The unique influence of additional program factors, including theoretical foundations within the program, academic major, total contact hours and intervention duration, were also investigated within this meta-analysis. The influence of these factors on the effects of adapted physical activity service learning, however, is currently inconclusive.

Attitudes toward Disability

Attitudes and beliefs are known to influence the ways in which individuals view, approach and understand other individuals (Dunn, 2015; Hutzler et al., 2019). Attitudes toward disability typically refer to how people without disabilities feel and think regarding disability or about people with disabilities (Dunn, 2015). Researchers have long since examined people's attitudes toward disability, with the assumption that understanding a person's attitude will predict future behaviors and actions. Given the evidence that people without disabilities tend to have negative attitudes towards people with disabilities, an important area of research has included examination and intervention of attitudes in order to reduce intergroup prejudice and increase experiences for people within disability populations.

Within disability literature, researchers have commonly adopted the Contact Hypothesis (Allport, 1954), or intergroup contact theory, as a means of understanding and changing attitudes toward people with disabilities. Allport (1954) proposed that increasing contact between groups of people who are seemingly different from one another may reduce prejudice and lead to more positive interactions and feelings toward one another. As such, contact between people with and without disabilities is thought to improve attitudes toward those in the other groups. Moreover, when four specific conditions of intergroup contact are met, the

potential effects can be substantial (Dunn, 2015; Pettigrew & Tropp, 2006, 2008). These four conditions include: (a) *common goals*, in which contact emphasizes goals, activities, and objectives common between the two groups; (b) *equal status*, in which individuals from each group are perceived and seen as having equal standing within contact; (c) *social norms*, in which contact includes expected social behaviors; and (d) *cooperative activities*, in which individuals from each group work together to achieve shared, common goals between the two groups. *Personal interaction*, or one-on-one interaction within contact, is also assumed through the four optimal contact conditions.

Specifically, college student attitudes toward disability have been a topic of study within adapted physical activity and adapted physical education research for over three decades (Mason, 1983; Roswal, 1988). Results of a recent meta-analysis on the overall effects of service learning on college students suggest that, collectively, service-learning programs within adapted physical activity have positive but small effects on college student attitudes, with some variability in the effects across service-learning programs (Case et al., 2020). Specifically, the authors suggested that programs that are mandatory or assigned as course content, take place on university campus, and include a lecture component, have smaller effects on programs that include voluntary involvement, take place off campus, and do not include lecture, respectively. The authors also found that programs that emphasize side-by-side participation and common goals between university students and people with disabilities have larger effects on attitude change than programs that emphasize teacher-chosen goals. Given these findings, the authors recommended that service-learning practitioners and researchers look to increase autonomy among their students and integrate choice-making opportunities within the service-learning programs. These findings align with the contact hypothesis and are consistent with research that suggests that negative contact (e.g., involuntary or threatening contact) can reinforce negative

attitudes or stereotypes (Pettigrew et al., 2011). To increase autonomy or voluntary circumstances within contact, providing students with choices between practicum types, disability subpopulations, and program locations were among the strategies recommended.

Measuring Attitudes toward Disability

A large body of literature involves the measurement of attitudes toward individuals with disabilities and related constructs (Antonak & Livneh, 2000; Palad et al., 2016). Moreover, a wide variety of measurement tools aim to appropriately measure attitudes toward disability. A literature review by Palad et al. (2016) synthesized available measurement tools and instruments that measure attitudes toward disability in order to provide an overall consensus of existing measures. Palad and colleagues (2016) reviewed 31 different measurement tools that measure attitudes toward disability, in general and specific disabilities. According to the review, fifteen instruments measured attitudes toward disability in general, whereas five measured attitudes toward communication disabilities, seven toward intellectual disabilities, and four toward mental illness. The authors also noted that 23 instruments were found to have appropriate utility and psychometric properties as supported in the literature, while 8 instruments demonstrated poor overall utility and psychometric properties. In total, 92 measurement tools were identified in the first phase of this review, with 61 studies being excluded due to lack of necessary data or nor measuring attitudes toward disabilities. Therefore, due to specific inclusion and exclusion criteria of this study, the 31 instruments included in this review is not an exhaustive list of instruments measuring attitudes toward disability. In fact, Antonak and Livneh (2000) expressed concern over the excess number of existing scales that measure attitudes toward people with disabilities approximately 16 years before Palad et al.'s (2016) review was published.

Despite the large number of measurement instruments that aim to measure attitudes toward disability, existing measurement practices have received multiple critiques within the literature. Many researchers have pointed out that, despite attitudes including multiple dimensions, instruments and studies present attitudes as a unidimensional construct with only one measurement score (Antonak & Livneh, 2000; Weisel et al., 1988). Palad et al. (2015) also noted that multiple commonly used instruments do not demonstrate evidence regarding responsiveness to change, despite their use to examine change in attitudes. In addition to criticisms and critiques, recommendations have been made to improve the measurement practice of attitudes toward people with disabilities. For example, it has been recommended that researchers establish the responsiveness to change that attitudinal instruments demonstrate considering multiple studies measure attitude change as a result of intervention and time (Palad et al., 2016). In addition, Antonak and Livneh (2000) and Dunn (2015) both summarize multiple recommendations and implications for attitude scholars, including refinement, review and revision of existing instruments, as opposed to the continual development of new scales, and the use of person-first language as opposed to outdated language (e.g., “the handicapped”).

Self-Efficacy, Interest, and Anxiety toward working with People with Disabilities in Service-learning

In addition to attitudes toward disability, other constructs and variables that may influence or relate to attitudes toward disability appear within adapted physical activity and service-learning literature. Perceived competence, which has often been used synonomously with self-efficacy and has previously been indicated as a significant predictor of attitudes, toward working with individuals with disabilities has been measured and targeted through service learning intervention (Hodge et al., 2002; Shields & Taylor, 2014). Hodge et al. (2002)

found that PETE students' perceived competence toward teaching children with disabilities significantly improved from pre-test to post-test following involvement in a 15-week introductory adapted physical education course with 8 sessions of service learning. College students participants involved in both on-campus and off-campus practicum experienced improvements in perceived competence. Shields and Taylor (2014) also similarly examined the self-reported changes in confidence working with someone with an intellectual disability and competence in nine different professional skills, such as implementing a progressive resistance training, modifying exercises for a resistance program, and giving clear instructions, following a 10-week, twice a week progressive resistance training program for young people with Down Syndrome. The results suggested significant improvements in self-reported competence of seven of the nine professional behaviors and confidence working with someone with an intellectual disability. Additionally, Taliaferro, Hammond and Wyant (2015) examined the effect of an adapted physical education course with an associated on-campus, service-learning component had on preservice physical educators' self-efficacy toward including individuals with autism, intellectual disabilities, physical disabilities, and visual impairments. Participants self-efficacy beliefs were measured using two separate, context-specific instruments: (1) the Physical Educators' Self-Efficacy toward Including Students with Disabilities-Autism scale and (2) the Situation Specific Self-Efficacy Instrument for Physical Education Teacher Education Majors scale (Taliaferro et al., 2015). The results revealed significant improvements in self-efficacy from pre- to post-intervention across all disability categories. Collectively, these studies highlight that service learning may be an important tool in improving self-efficacy, perceived competence and confidence toward working with individuals with disabilities among the college student population, including preservice physical educators.

Professional interest, or the vocational call to teach, and intentions toward working with people with disabilities within an adapted physical activity setting have also been measured among university students, although minimally (Miller, 2012; Shields & Taylor, 2014). Shields and Taylor (2014) measured the self-reported changes in professional behaviors, confidence, and the likelihood of working with individuals with intellectual disabilities in the future among 28 physiotherapy students. Each student was individually paired with a person with Down syndrome and completed a 10-week community-based progressive resistance training or social program with their partner. All students answered one question to rate their likelihood of working with people with intellectual disability in the future. Across both program types (resistance training and social), participants reported positive changes in the likelihood of individuals with disabilities in the future after participating in a 10-week program with an individual with Down syndrome, suggeting similar practicum may be useful for improving the likelihood that preservice professionals choose to work with disability populations. Miller (2012) also examined professional interest in working with disability through her examination of college student's vocational call to teach following participation in service learning. In this study, a group of 26 first-year physical education majors were enrolled in a motor development class with an associated early childhood, motor development practicum that included children with and without disabilities. Two students were assigned to two children, one with disability and one without disability, and assisted them throughout the lesson plan activities for 45 minutes per session. Participants filled out weekly reflective journal logs and completed a survey titled Physical Education Teacher Call to Vocation (PET-Call) regarding their service-learning experience and their feelings towards teaching PE to children with and without disabilities. Mean survey results suggested that participants were not unsettled or anxious by the inclusion of children with disabilities in their PE class. However, results also suggested that participants

were not interested in teaching preschool-age children with disabilities after the service-learning experience, which highlights inconsistent results on the influence of service-learning practicum on professional interest in the population. Intentions, which can be influenced by personal beliefs and attributes (Hutzler et al., 2019), toward teaching children with disabilities have also been examined among physical educators within the field (Jeong & Block, 2011).

In addition to seemingly positive outcomes, including increased self-efficacy and interest toward working with children with disabilities, preservice teachers and college students majoring in physical education teacher education have also demonstrated anxiety working with students with disabilities (Everhart, 2009), which may be associated with attitudes toward this population. Everhart (2009) conducted a preliminary investigation of anxiety levels of preservice physical education students regarding teaching students with disabilties. Six physical education majors enrolled in an Adapted Physical Education course participated in this study. During one semester, participants in the course instructed separate groups of children with and without disabilities through physical education lesson plans at the university gymnasium 1-2 times per week. For groups of children with disabilities, the physical education students were responsible for creating adaptations and modifications to the lesson plans. As part of the study, data was collected on participants heart rate (via heart rate monitor) while teaching their lesson plans to both children with and without disabilities, as well as their views, concerns and experience while teaching both groups (via questionnaire). Visual graphs of participant heart rate while teaching suggest that participants appeared to be more anxious and excited while teaching students with disabilities compared to those without. Additionally, results from the participant questionnaires concluded that participants in this study were nervous, yet excited, about working with students with disabilities. Participants noted that they felt anxious about teaching children with disabilities due to unfamiliarity and not knowing what to expect.

APA/E Undergraduate Courses

In addition to examining the effects of APA/APE coursework and service-learning among college students (Taliaferro et al., 2015), researchers have also explored APA/APE undergraduate courses for the purposes of describing the course content (Kwon, 2018; McNamara et al., in press; Piletic & Davis, 2010) and examining their effects on attitudes toward people with disabilities. Piletic and Davis (2010) and Kwon (2018) used similar survey methods to describe the present status of introductory APE courses within PETE programs across the U.S. Both studies provide large amounts of quantitative information that detail a summary of courses, including information about the structure of the course, the most commonly reported and most important content areas according to the instructors, and descriptive information of the associated practicum or service-learning experience. In terms of the associated practicum, both studies described the majority of programs as involving K-12 students with disabilities. However, the two reports differed in the most common, primary goal of the practicum experience. Piletic and Davis (2010) reported that hands-on experience with the goal of changing attitudes was the main program objective among instructors, whereas Kwon (2018) suggested the major purpose was to gain direct teaching experiences with people with disabilities.

McNamara et al. (in press) also explored introductory APE courses by qualitatively examining the course instructors' perspectives toward the purpose of the course, the content delivered within the course, and their rationale for including the content. Alternative to previous studies in this area that examined a larger sample of faculty (Kwon, 2018; Piletic & Davis, 2010), the authors interviewed seven faculty to gather data in this area. Findings highlights that 6 of the 7 courses included an associated practicum or service-learning component. In addition, based on the interviews, the authors highlighted three themes, including (1) "it is learning that

this may fail," (2) "[our] purpose is to expose them" and (3) "we cover…broad strokes." The authors described that the instructors were challenged and limited by the large amount of concepts that were important to cover, with only one course to cover it. The authors drew attention to several institutional and societal barriers, including lack of priority on advanced training in APA/APE within PETE curriculum, that are currently impacting the way in which future educators are trained to teach students with disabilities. Several suggestions for practice, curriculum development, and future research were made based on their findings.

Best-practice recommendations for Experiential/Service-Learning

Across fields of education and research, a large body of literature is dedicated to outlining essential components for service-learning as an educational practice (Pangelinan et al., 2018; Whitley, 2014). According to the National Youth Leadership Council (2008), there are 8 evidence-based standards for high-quality practice in K-12 service-learning. The standards include: (1) meaningful service, (2) link to curriculum, (3) ongoing, reflection activities, (4) diversity and mutual respect among all participants, (5) youth voice, (6) mutually beneficial, collaborative partnerships, (7) progress monitoring, and (8) sufficient duration and intensity. Scholars have also emphasized the importance of incorporating best practices into service-learning, specifically in academic and higher education settings. Whitley (2014) proposed a conceptual framework to specifically improve research that examines the effects of service-learning on student outcomes. However, she also made several recommendations for practice that may enhance and should guide service-learning efforts, such as reflection, critical thinking, problem solving, and autonomy among students and the use of a conceptual guide or other theories to inform student learning and program development. Niemiec and Ryan (2009) similarly suggested the importance of integrating autonomy and intrinsic motivation into

educational practices, like service-learning, and made recommendations for teachers to provide choice and minimize pressure and control among their students.

Scholars have also outlined important practices and recommendations for service-learning components within Kinesiology fields (Cervantes & Meaney, 2013; Pangelinan et al., 2018; K. A. R. Richards et al., 2012; Whitley, 2014; Whitley & Walsh, 2014). For examples, Whitley and Walsh (2014) describe a framework for service-learning that provides a structure for the design, delivery, and evaluation of courses that include service-learning, drawing attention to many practices that are essential for student outcomes. The authors suggest that opportunities for reflection (e.g., written reflections about course readings, program observations, and mentoring sessions) should be included and may mediate the effect of service-learning on students. Pangelinan and colleagues (2018) similarly indicate that reflection is essential for service-learning and experiential learning in Kinesiology, and highlight the importance of 7 other best practices including intention, preparedness and planning, authenticity, orientation and training, ongoing, formal evaluation of students, assessment and evaluation, and acknowledgement (National Society for Experiential Education, 1998). In addition, Cervantes and Meaney (2013) recommend that service-learning in PETE should include an underlying theoretical framework and be carefully designed to address teacher effectiveness, student learning and community outcomes.

Guidelines and Recommendations for Service-learning and Community Health Programs for People with Disabilities

In recent years, there have been noticeable increases in health promotion programs and public health efforts for people with disabilities. Despite this increase, scholars recognized that very little advocacy and empirical research had been conducted to identify evidence-based practices for health promotion programs for people with disabilities (Drum et al., 2009).

Therefore, in 2009, Drum and colleagues used several research procedures, including systematic literature review and expert panel review, to identify, describe, and propose a set of 7 guidelines to follow when implementing health promotion programs for people with disabilities. Based on consensus from the Expert Panel, and through feedback from people with disabilities, the following guidelines were created stating that health promotion program should:

1. Include an underlying conceptual or theoretical framework
2. Implement process evaluation, such as program satisfaction, participant feedback, and intervention-related expenses.
3. Collect outcome data using disability-appropriate measures
4. Involve people with disabilities and their families in the development and implementation of the health promotion programs.
5. Consider the beliefs, practices, and values of people with disabilities, as well as support opportunities for personal choice.
6. Be social, behaviorally, programmatically, and environmentally accessible
7. Be affordable or maintain reasonable fees

The authors made clear that there may be considerable barriers to implementing some of these guidelines. In addition, the authors posited that these strategies were not meant to be implemented as a substitute for other important programming best-practices, but instead should be used to increase the extent to which the disability community is included within the planning and programming of health promotion programs (Drum et al., 2009).

Several organizations and researchers have made similar recommendations for how people with disabilities can be supported within health programming, including for physical activity (Kraus & Jans, 2014; Rimmer et al., 2004; Rimmer & Rowland, 2008). For example, Rimmer and colleagues (2004) identified several barriers and facilitators associated with

participation in fitness and recreation programs among people with disabilities with the intentions of identifying strategies and recommendations for improving physical activity participation. Recommendations such as including people with disabilities in the purchasing of adaptive equipment, prioritizing appropriate physical access to the fitness center, providing free or reduced fee transportation to and from the facility for people with disabilities, and improving attitudes toward disability among fitness professionals, were made in order to facilitate physical activity among people with disabilities (Rimmer et al., 2004). The National Center on Health, Physical Activity and Disability (NCHPAD) has also made several resources and guidelines that center around improving accessibility of physical activity promotion programs, organizations, and marketing strategies for people with disabilities (Kraus & Jans, 2014). Similar to Drum et al.'s (2009) guidelines, NCHPAD also suggests that people with disabilities are involved in program planning and implementation, process and outcome evaluation are implemented, program cost is feasible and affordable, and the program is accessibility. Additional guidelines include that program objectives include people with disabilities and that a variety of accessible methods of outreach and communication are used to promote the program to people with disabilities.

Despite guidelines for important practices in the literature, minimal research has examined the perspectives of community members with disabilities who participate in the programs (Naturkach & Goodwin, 2019). One study by Naturkach and Goodwin (2019) used an interpretative phenomenological analysis qualitative research approach to examine how 9 people with disabilities in the community have experiences involvement in an undergraduate APA/APE course. Based on individual and focus-group interviews, the authors presented the results according to four major themes: (1) yes, we are willing partners, (2) but…we're in the dark, (3) subjected to being the subjects, and (4) engage through relationships. Overall, the participants expressed that they were satisfied and supportive with the service-learning

program and understanding that the program was a training opportunity for students within a safe learning environment. Interestingly, many of the participants expressed however that no to minimal communication was provided about the students' involvement and the effects that the training opportunities had. This led to discussions and sentiments from the participants about being used for student training as opposed to being valued as equal partners within the service-learning program. Based on their findings, the authors expressed the need to prioritize programming that is mutually beneficial within service-learning contexts, particularly creating an environment that fosters respect and mutual understanding and challenges ableism and power structures. At the same time, the authors acknowledged that there is little understanding and information regarding how to create service-learning contexts that are mutually beneficial to students and people with disabilities in the community.

Barriers and Facilitators to Service-learning

Researchers have expressed that there are complex challenges to service-learning implementation, including within teacher preparation programs (Lillo, 2019). Only a few studies have directly explored the challenges to service-learning (Anderson & Pickeral, 2000). Anderson and Pickeral (2000) examined the perceived challenges that teacher educators have regarding the use of service-learning in preservice teacher education and identified several strategies to overcome those challenges. Seventy-two teacher education faculty with experience with service-learning participated in the study. Participants completed a survey in which they were asked to rate 22 separate issues related to service-learning on a scale from 0 (not a challenge) to 5 (critical challenge). Results of the study indicate that the most critical challenges relate to lack of time for teacher educators to engage in service-learning, too little time in the preservice curriculum, and a misalignment between service-learning with faculty roles and university priorities. In addition, results indicate that the mean ratings among teachers from public

institutions differed from those from private institutions of the specific challenge of lack of alignment between service-learning and institutional priorities. Other differences were found between male and female participants as well as tenured and non-tenured participants. In addition to examining the self-rated challenges, the researchers also interviewed a smaller sample of teacher educators regarding suggestions for successful strategies to resolve or minimize the challenges explored in the study. Numerous strategies were provided for each challenge. While this study provides a foundation for examining challenges and supports in other work, the time that has passed since this study was conducted (1998) may suggest that new challenges or strategies for support may exist within current service-learning.

Alignment between pedagogical objectives and activities in APA/APE service-learning

Many studies have examined the effects of APA/APE service-learning on important learning outcomes, such as improvements in favorable attitudes toward people disabilities, for undergraduate students. However, minimal research has explored the extent to which service-learning is implementing learning activities that are designed to contribute to the outcomes of interest. In fact, regarding their meta-analysis that included 14 studies that examined the effect of service learning on college student attitudes toward people with disabilities, Case et al. (2020) questioned if APA/APE service-learning programs were deliberately designing programming to improve attitudes. This questioning was in response to several of the studies' indication of program objectives other than favorable attitude change, such as improved teacher competence and increased physical activity levels among people with disabilities. In addition, many of the studies left out details regarding the activities within the service-learning. Therefore, with the exception of in-person contact, most studies did not explicitly describe the implementation of any activities that promote positive attitude change.

Two studies have done work related to aligning APA/APE programming, including service-learning, with best practices (McKay et al., 2018; Taliaferro & Bulger, 2020). First, McKay et al. (2018) used a new fidelity criteria instrument to measure alignment between Contact Theory and a Paralympic School Day (PSD) disability awareness program. One hundred and forty-five sixth grade students (ages 11-13) in New York participated in this study. All participants took part in the PSD program, through which they interacted with people with disabilities. Immediately after participation in the program, participants responded to four questions on the fidelity criteria instrument that corresponded to the four optimal contact conditions (Allport, 1954), and then responded to the instrument again 6 weeks later. A chi-square goodness of fit-test was conducted to examine frequencies of positive responses to the four questions. Results indicated that there was a significant difference in students' responses across all four Contact Theory components, suggesting that the intervention supported the theory. Importantly, through the creation of the fidelity instrument, the researchers were able to examine if the PSD intervention aligned with the four optimal contact components of the Contact Theory. Using similar instruments that measure intervention fidelity to theoretical components may be important for other APA/APE programming as well.

Taliaferro and Bulger (2020) also contributed to APA/APE research that aims to align service-learning and student training with best practices through the use of a Delphi Study. The authors described that there is little agreement throughout the field on the purpose, design, included activities, and scope of the hands-on training, such as practicum and service-learning, with children with disabilities and, therefore, evaluation of best practices was warranted. The purpose of the study was to determine expert consensus regarding the essential characteristics of APE practicum for preservice physical educators. Researchers used a 3-round Delphi research procedure, through which an online questionnaire was circulated among expert panelists for

three rounds. Panelists first generated items to the following open-ended prompt: “One thing that characterizes an effective APE practicum for preservice teachers within undergraduate PETE programs is…”. The second and third rounds involved evaluating and then reevaluating the resulting responses on a 7-point Likert scale ranging from *not important* (1) to *extremely important* (7). Of the 70 rated items, researchers then excluded items with mean ratings less than 5 and clustered the remaining 47 best practice items into four themes: program context, teaching and learning activities, outcomes/soft skills, and evaluation of instructor performance. In sum, the findings of this study demonstrate an expert consensus on the essential characteristics that an APE practicum for preservice physical characteristics should include. The included items did not clearly align with attitude change activities or of evidence support favorable attitude change toward people with disabilities. However, the results of the study have major implications for creating tools in which service-learning facilitators can evaluate their programs again best-practice recommendations for practicum.

APPENDIX B. STUDY INVITATION LETTER

From: Layne Case
To: [email recipient]
Subject: Invitation to Participate: APA/APE Service-learning and Practicum Questionnaire

Hi [recipient name],

This is an invitation to participate in a research study titled "A critical summary of campus-based adapted physical activity service-learning opportunities for undergraduate students" to learn more about adapted physical activity (APA) and adapted physical education (APE) service-learning/practicum for undergraduate students enrolled at 4-year universities. This project is led by Layne Case (graduate student researcher), as partial fulfillment of her doctoral degree in Kinesiology/Adapted Physical Activity, and Dr. Sam Logan (Associate Professor) from Oregon State University.

We are inviting you to participate in this study because you were identified as an instructor of an APA/APE course by your university or as an individual who directs or supervises APA/APE service-learning at your university. If this is incorrect, please forward this email to the appropriate individual.

Participation in this study includes completing an online survey. This survey will be anonymous—your name, email, or university will not be recorded along with your responses. The survey will take up to 15-20 minutes to complete.

Your responses will be helpful in understanding the current status of APA/APE service-learning experiences available to undergraduate students, potential program barriers and supports, and unanticipated program changes due to COVID-19.

Follow this link to the Survey: [personalized hyperlink]
Or copy and paste the URL below into your internet browser: [personalized URL]

If you have any questions about the study, please email Layne Case (graduate student researcher) at casela@oregonstate.edu or Sam Logan (Principal Investigator) at Sam.Logan@oregonstate.edu. Thank you very much for your time and help with completing this research!

Sincerely,

Layne Case, MS
Doctoral Candidate
Adapted Physical Activity | Kinesiology
College of Public Health and Human Sciences
Oregon State University
casela@oregonstate.edu
Pronouns: she/her/hers

APPENDIX C. STUDY INSTRUMENT

Link to survey: https://oregonstate.qualtrics.com/jfe/form/SV_9ZAbdLGFgQn0jtz

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RESEARCH CONSENT FORM

We are inviting you to take part in a research study.

Purpose: This study is about adapted physical activity (APA) and adapted physical education (APE) service-learning and practicum experiences for undergraduate students enrolled at 4-year universities. We are asking you to participate in this study because you were identified as an instructor of an APA/APE course by your university or as an individual who directs or supervises an APA/APE service-learning/practicum at your university.

Voluntary: You do not have to be in the study if you do not want to. You can skip any questions you would prefer not to answer. You can also decide to be in the study now and change your mind later.

Activities: The study activities include completing an online survey. Your participation in this study will be kept *confidential*—your name, email, or university will not be recorded with your responses. The survey may take up to 15-20 minutes to complete but may take less.

Benefits: We do not know if you will benefit from being in this study. However, your responses will be helpful in understanding the current status of APA/APE service-learning and practicum experiences available to undergraduate students, potential barriers and supports to practical experiences, and unanticipated changes due to COVID-19.

Confidentiality: Your participation in this study will be kept confidential to the extent permitted by law. Research records will be stored securely and only researchers will have access to records. If the results of this project are published, your identity or university will not be made public.

Study contacts: If you have any questions about the study, please email Layne Case (graduate student researcher) at casela@oregonstate.edu or Dr. Sam Logan (Principal Investigator) at Sam.Logan@oregonstate.edu. You can also contact the Human Research Protection Program with any concerns that you have about your rights or welfare as a study participant. This office can be reached at (541) 737-8008 or by email at IRB@oregonstate.edu You may print a copy of this form for your records.

Future Use of Data: Do we have your permission to store the data collected from this survey for future studies related to APA/APE program evaluation?

- ○ Yes
- ○ No

1.2 **Consent**: Checking this box indicates that this study has been explained to you, that your questions have been answered, and that you agree to take part in this study. *Must be answered to start the study.*

- ◯ I agree to take part in this study.

End of Block: Consent information

Start of Block: Service-learning at your university

2.1 **We are interested in Adapted Physical Activity (APA) and Adapted Physical Education (APE) practicum and service-learning programs (e.g., hands-on exposure teaching or working with individuals with disabilities) at your university.**

Please answer questions based on how the programs ran <u>BEFORE the COVID-19</u> pandemic. There will be an opportunity later in the survey to answer questions about potential changes due to COVID-19.

2.2 **Please answer the following questions about your university:**

Which U.S. region is your university located in?

- ◯ West
- ◯ Southwest
- ◯ Midwest
- ◯ Northeast
- ◯ Southeast
- ◯ Mid-Atlantic

2.3 Are you currently, or have you previously been, an instructor of an Adapted Physical Activity (APA) or Adapted Physical Education (APE) related undergraduate course at your university?

- ◯ Yes
- ◯ No

Display This Question:
If Are you currently, or have you previously been, an instructor of an Adapted Physical Activity (AP... = Yes

2.4 As part of the APA or APE course at your university, is it typically expected that undergraduate students engage in a practical experience with people with disabilities (e.g., service-learning, practicum)?

- Yes
- No
- I don't know

Display This Question:
If As part of the APA or APE course at your university, is it typically expected that undergraduate... = Yes

2.5 Do students participate in on-campus or off-campus programming?

- On-campus
- Off-campus
- Both
- I don't know

Display This Question:
If Are you currently, or have you previously been, an instructor of an Adapted Physical Activity (AP... = No
Or As part of the APA or APE course at your university, is it typically expected that undergraduate... = No
Or As part of the APA or APE course at your university, is it typically expected that undergraduate... = I don't know

2.6 Are you involved with an APA/APE practical experience offered to undergraduate students that takes place on a university campus? (e.g., service-learning program, practicum, camp, etc.)

- Yes
- No

End of Block: Service-learning at your university

Start of Block: Program barriers and challenges:

12.1 Please rate each of the following factors from **(0) not a challenge at all** to **(5) a critical challenge** to APA/APE service-learning or practicum experiences at your university**:** **INSTITUTIONAL ISSUES**

	Level of Challenge					
	0	1	2	3	4	5
Lack of funds	○	○	○	○	○	○
Liability and safety concerns	○	○	○	○	○	○
Lack of administrative support	○	○	○	○	○	○
Lack of alignment with faculty roles	○	○	○	○	○	○
Lack of alignment of service-learning with department priorities	○	○	○	○	○	○
Lack of sustained professional development opportunities	○	○	○	○	○	○

12.2 **CURRICULAR ISSUES**

	Level of challenge					
	0	1	2	3	4	5
Lack of time in preservice curriculum	○	○	○	○	○	○
Lack of time to plan service-learning activities	○	○	○	○	○	○
Lack of service-learning curriculum	○	○	○	○	○	○
Difficulty aligning service-learning with state/national teacher education standards	○	○	○	○	○	○
Difficulty linking service learning to lecture	○	○	○	○	○	○

12.3 **FACULTY and STUDENT ISSUES**

	Level of challenge					
	0	1	2	3	4	5
Faculty lack time necessary to plan service-learning	○	○	○	○	○	○
Faculty unprepared to integrate service-learning into teaching	○	○	○	○	○	○
Lack of student interest in service-learning	○	○	○	○	○	○
Students unable to cope with participant behaviors and needs	○	○	○	○	○	○
Faculty not interested in service-learning	○	○	○	○	○	○
Ineffective collaboration between those involved	○	○	○	○	○	○

12.4 **APA/APE PROGRAMMING ISSUES**

	Level of challenge					
	0	1	2	3	4	5
Difficulty implementing appropriate teaching methods	○	○	○	○	○	○
Difficulty implementing effective behavior management training	○	○	○	○	○	○
Lack of appropriate equipment	○	○	○	○	○	○
Lack of resources to provide disability training	○	○	○	○	○	○
Difficulty communicating with parents and families	○	○	○	○	○	○

12.5 Please briefly describe any challenges or barriers not listed above, if applicable:

_____

Page Break

Start of Block: Program facilitators and supports

13.1 Please rate each of the following factors from **(0) not a support at all** to **(5) a critical support** to APA/APE service-learning or practicum experiences at your university:

	Level of support					
	0	1	2	3	4	5

Adequate planning	○	○	○	○	○	○
Funding support	○	○	○	○	○	○
Well-trained staff	○	○	○	○	○	○
Adequate resources for training	○	○	○	○	○	○
Parent or family involvement	○	○	○	○	○	○
Motivated leader or leadership team	○	○	○	○	○	○
Multidisciplinary team approach	○	○	○	○	○	○
Collaboration among those involved	○	○	○	○	○	○
High self-efficacy of students	○	○	○	○	○	○
Previous experience with individuals with disabilities among students	○	○	○	○	○	○
Favorable disability attitudes among students	○	○	○	○	○	○
High expectations of students in program	○	○	○	○	○	○

13.2 Please briefly describe any supports not listed above, if applicable:

_____

Start of Block: Personal Beliefs toward Service-learning/Practicum

3.1 **Please rate your level of agreement with the following statements from (1) do not agree to (7) strongly agree:**

	Level of Agreement						
	1	2	3	4	5	6	7
Participation in service-learning/practicum is beneficial for my students.	○	○	○	○	○	○	○
I am interested in providing quality practical experiences to my students.	○	○	○	○	○	○	○
Organizing service-learning activities for my students is an important part of my workload.	○	○	○	○	○	○	○
I believe students are competent in providing service to people with disabilities after involvement in service-learning/practicum.	○	○	○	○	○	○	○
I make detailed plans regarding how to provide quality practical experiences to students.	○	○	○	○	○	○	○
I have made a detailed plan regarding how to provide practical experiences to students during the time of COVID-19.	○	○	○	○	○	○	○

End of Block: Personal Beliefs toward Service-learning/Practicum

Start of Block: Final section. Please answer these demographic questions:

4.1 **Final questions! Please answer these demographic questions:**

What is your age (in years)?

- ○ 18-24
- ○ 25-34
- ○ 35-44
- ○ 45-54
- ○ 55-64
- ○ 65-74
- ○ 75 or over

4.2 What is your race? Check all that apply:

- ☐ Black or African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Pacific Islander
- ☐ White
- ☐ Other: _____

4.3 What is your ethnicity?

- ○ Hispanic or Latino
- ○ Not Hispanic or Latino

4.4 Do you experience or have a disability?

- ○ Yes
- ○ No

4.5 Please indicate your current role at the university:

- ○ Undergraduate student
- ○ Graduate student
- ○ Post-doctoral position
- ○ Assistant professor
- ○ Associate professor
- ○ Professor
- ○ Adjunct faculty
- ○ Other: _____
- ○ I am not employed by the university

4.6 Which option most closely resembles your formal title/role within the service-learning program or practicum?

- ○ I am not formally involved in a program
- ○ Undergraduate student program staff
- ○ Graduate student program staff
- ○ Faculty program coordinator or director
- ○ Faculty supervisor
- ○ Instructor of associated course
- ○ Other: _____

4.7 If applicable, what was your academic major or focus while achieving your highest degree?

- ○ Kinesiology, Exercise Science, or Sport Science
- ○ Physical Education
- ○ Adapted Physical Education or Adapted Physical Activity
- ○ Health Education
- ○ Special Education
- ○ Physical or Occupational Therapy
- ○ Other: _____

4.8 Do you have a current teaching certification to teach Physical Education or Adapted Physical Education?

- ○ Yes, I currently hold a teaching certification.
- ○ No, but I have had a teaching certification in the past.
- ○ No, I have never held a teaching certification.

Page Break

End of Block: Final section. Please answer these demographic questions:

Start of Block: Program description:

5.1 **The following questions will ask you to describe the service-learning program or practicum. Please answer based on pre-COVID-19. *Note*: Some universities have multiple APA/APE service-learning programs available to undergraduates. For this survey, please answer the questions as they relate to only ONE program at your university that you are most involved in:** What are the contents of the program? Check all that apply:

- ☐ Aquatics
- ☐ Dance
- ☐ Fundamental motor skill development
- ☐ Fitness
- ☐ Rehabilitation and Physical Therapy
- ☐ Physical Education
- ☐ Physical Activity
- ☐ Play and leisure
- ☐ Social Engagement
- ☐ Sports
- ☐ Specific sport(s) - Please indicate: _____
- ☐ Other: _____

5.2 In general, who organizes or leads the program? Check all that apply:

- ☐ University faculty/staff
- ☐ Professionals/staff outside the university
- ☐ Graduate students
- ☐ Undergraduate students

5.3 About how long are undergraduate students typically involved?

- ○ One academic quarter (~10 weeks)
- ○ One academic semester (~15 weeks)
- ○ One academic year
- ○ One-time event (e.g., Special Olympics meet)
- ○ One-week event (e.g., camp)
- ○ Other: _____

Display This Question:
If About how long are undergraduate students typically involved? = One academic quarter (~10 weeks)
Or About how long are undergraduate students typically involved? = One academic semester (~15 weeks)
Or About how long are undergraduate students typically involved? = One academic year

5.4 About how often do program sessions occur throughout the academic quarter/semester?

- ○ One-time event
- ○ Once per week
- ○ Twice per week
- ○ Three or more sessions per week
- ○ Other: _____

Display This Question:
If About how long are undergraduate students typically involved? = One academic quarter (~10 weeks)
Or About how long are undergraduate students typically involved? = One academic semester (~15 weeks)
Or About how long are undergraduate students typically involved? = One academic year

5.5 About how long is each program session?

- ○ 30 minutes or less
- ○ 60 minutes
- ○ 90 minutes
- ○ 120 minutes
- ○ Other: _____

5.6 How long has the program been active?

- ○ Less than one year
- ○ 1-5 years
- ○ 6-10 years
- ○ 11-20 years
- ○ More than 20 years
- ○ I don't know

Page Break

End of Block: Program description:

Start of Block: People with disabilities in your program:

6.1 Please answer these questions about people with disabilities in the service-learning/practicum:

Which option best describes the age of the people with disabilities involved? Check all that apply:

- ☐ Young children (birth - 5 years old)
- ☐ School-aged children (6-17 years old)
- ☐ Young adults (18-25 years old)
- ☐ Adults (26-64 years old)
- ☐ Older adults (65+ years old)
- ☐ Other: _____

6.2 About how many people with disabilities are regularly involved?

- ○ Less than 10
- ○ 10-29
- ○ 31-50
- ○ Over 50

6.3 Who does the service-learning/practicum serve?

- ○ People with several different diagnoses are involved
- ○ The program targets people with specific diagnoses or conditions, including: _____

6.4 Are people with disabilities, and/or their family members, involved in planning or evaluation of the program?

- ○ Yes
- ○ No
- ○ I don't know

6.5 Are financial supports available to people with disabilities or their families who experience financial constraints?

- ○ Yes, full funding support is available if necessary
- ○ Yes, partial funding support is available if necessary
- ○ The program is free of charge
- ○ No
- ○ I don't know

Page Break

Start of Block: Program training:

7.1 Please answer the following questions about undergraduate student training:

Does the program provide a training specific to working with children or people with disabilities for undergraduate students in the program?

- ○ Yes
- ○ No

Skip To: End of Block If Please answer the following questions about undergraduate student training: Does the program prov... = No

7.2 Is this training within or separate from an associated lecture?

- ○ Within an associated lecture course
- ○ Separate from an associated lecture course
- ○ Both. Students receive training within the lecture course and separate from the lecture.

7.3 Who provides this training? Check all that apply:

- ☐ Faculty
- ☐ Graduate student staff
- ☐ Course instructor of the associated course
- ☐ Guest speaker(s)
- ☐ Training is provided online with existing electronic resources
- ☐ Other: _____

7.4 What concepts are typically covered within the training or throughout involvement? Check all that apply:

- [ ] Disability diagnosis criteria
- [ ] Common signs and characteristics of specific diagnoses
- [ ] Models of Disability (e.g., Medical, Social)
- [ ] Disability Language (e.g., person-first, identify-first)
- [ ] Best teaching practices
- [ ] Teaching modifications and accommodations
- [ ] Behavior management
- [ ] Personal care and physical transfers
- [ ] Safety and emergency care
- [ ] Trauma-informed care
- [ ] American sign language
- [ ] Other: _____

7.5 If there is behavior management training, what concepts are typically covered during the training or throughout the experience? Check all that apply:

- [ ] There is no formal behavior management training.
- [ ] Functions (reasons) of behaviors
- [ ] ABCs of behavior (antecedent, behavior, consequence)
- [ ] Premack principle (i.e., if/then statements)
- [ ] Providing choices and supporting autonomy
- [ ] Redirection strategies
- [ ] Prompting
- [ ] Differential reinforcement of incompatible behaviors
- [ ] Visual supports
- [ ] Positive reinforcement
- [ ] Token economies (i.e., token boards)
- [ ] Sensory preferences and responses
- [ ] Other: _____

Page Break

End of Block: Program training:

Start of Block: Program goals and evaluation:

8.1 Please answer these questions about program goals and evaluation:

In your opinion, what are the **most important goals for <u>undergraduate students</u>** in your program? Pick up to three:

- ☐ To gain hands-on experiences with people with disabilities
- ☐ To learn how to create appropriate lesson plans
- ☐ To learn how to create modifications for people with disabilities
- ☐ To improve self-efficacy and confidence toward teaching people with disabilities
- ☐ To improve attitudes toward people with disabilities
- ☐ To supplement learning in associated lectures
- ☐ To increase community engagement among students
- ☐ To gain experience with collaboration within adapted physical activity/education
- ☐ Other: _____
- ☐ There are no formally identified goals and objectives for undergraduate students

8.2 In your opinion, what are the **most important goals for <u>people with disabilities</u>** in your program? Pick up to three:

- ☐ To increase motor skill level and learning
- ☐ To gain access to physical activity opportunities
- ☐ To increase interest in physical activity
- ☐ To have a positive physical activity role model
- ☐ To improve/maintain functional fitness and activities of daily living
- ☐ To improve independence or self-efficacy in physical activity
- ☐ To gain social interactions and experiences
- ☐ Other: _____
- ☐ There are no formally identified goals and objectives for people with disabilities in the program

8.3 Does your program regularly collect data on any of these goals?

- ○ Yes
- ○ No

8.4 Does your program regularly collect data on any of the following measures? Check all that apply:

- [ ] Attendance from undergraduate students
- [ ] Satisfaction with the experience of undergraduate students
- [ ] Feedback from undergraduate students
- [ ] Attendance of people with disabilities
- [ ] Satisfaction with the experience from people with disabilities
- [ ] Feedback from people with disabilities

Page Break

End of Block: Program goals and evaluation:

Start of Block: University students in the program:

9.1 Please answer these questions regarding undergraduate students involved:
What do the undergraduate students major in? Check all that apply:

- ☐ Physical Education Teacher Education
- ☐ Adapted Physical Education/Adapted Physical Activity
- ☐ Kinesiology or Exercise Science
- ☐ Pre-Occupational or Pre-Physical Therapy
- ☐ Health Education
- ☐ Special Education
- ☐ Other: _____
- ☐ Any major is welcome to be involved!

9.2 How do undergraduate students become involved in the program? Check all that apply:

- ☐ Voluntary involvement
- ☐ Required course component
- ☐ Internship
- ☐ Other: _____

9.3 How are students evaluated within the program? Check all that apply:

- [ ] There is no formal evaluation for student performance.
- [ ] Attendance
- [ ] Performance feedback from supervisors
- [ ] Graded assignments (e.g., lesson plans, reflections)
- [ ] Informal discussions with the supervisor
- [ ] Other: _____

Page Break

End of Block: University students in the program:

Start of Block: Reflection:

10.1 Please answer these questions regarding reflection:

Is reflection integrated into your program for undergraduate students?

- ○ Yes
- ○ No

Skip To: End of Block If Please answer these questions regarding reflection: Is reflection integrated into your program fo... = No

10.2 What types of reflection do students engage in? Check all that apply:

- ☐ Small group discussions
- ☐ Large group discussions
- ☐ In-class discussions
- ☐ Debates
- ☐ Journal entries
- ☐ Written assignment connecting service-learning with course material
- ☐ Other: _____

10.3 Do students receive feedback on their reflections?

- ○ Yes
- ○ No

10.4 What are students prompted to reflect on? Check all that apply:

- [ ] Whatever they would like to reflect on
- [ ] General experience in the program
- [ ] Teaching performance
- [ ] Participant behaviors and behavior management strategies
- [ ] Connections to course content
- [ ] Social justice issues
- [ ] Program satisfaction
- [ ] Other: _____

Page Break

End of Block: Reflection:

Start of Block: Student-participant contact:

11.1 Please answer these questions about contact between students and people with disabilities:

Prior to any changes due to COVID-19, how do students typically interact with people with disabilities in the program? Check all that apply:

- ☐ In-person, hands-on contact
- ☐ Observations
- ☐ Video-based contact
- ☐ Other: _____

11.2 Which option(s) best describes the ratio between undergraduate students and people with disabilities? Check all that apply:

- ☐ 1:1 ratio (1 student to 1 person with disability)
- ☐ 2:1 ratio (2 students to 1 person with disability)
- ☐ Small group (e.g., 1 student to less than 10 people with disabilities)
- ☐ Large group (e.g., 1 student to 10 or more people with disabilities)
- ☐ Other: _____

11.3 In general, are undergraduate students paired with the same people with disabilities throughout their involvement?

- ○ Yes, pairs stay the same throughout the program.
- ○ Mostly. There may be some changes based on needs or absences.
- ○ No, students work with a variety of different people with disabilities.

11.4 In general, who chooses the activities during the program sessions?

- ○ Undergraduate students
- ○ People with disabilities in the program
- ○ Program staff
- ○ There are equal opportunities to make choices between students and people with disabilities.
- ○ Other: _____

Page Break

End of Block: Student-participant contact:

Start of Block: Changes due to COVID-19:

14.1 Please answer these questions regarding changes due to COVID-19:

Did typical, in-person programming stop in response to COVID-19?

- ○ Yes, it stopped completely.
- ○ Yes, but we continued to offer remote or virtual programming.
- ○ No, we still held in-person programming.

Display This Question:
If Please answer these questions regarding changes due to COVID-19: Did typical, in-person programmi... = Yes, it stopped completely.
Or Please answer these questions regarding changes due to COVID-19: Did typical, in-person programmi... = Yes, but we continued to offer remote or virtual programming.

14.2 If programming stopped, will/did typical programming resume when it is safe?

- ○ Yes
- ○ No
- ○ I don't know

Display This Question:
If Please answer these questions regarding changes due to COVID-19: Did typical, in-person programmi... = Yes, it stopped completely.
Or Please answer these questions regarding changes due to COVID-19: Did typical, in-person programmi... = Yes, but we continued to offer remote or virtual programming.

14.3 If/when programming resumes, will changes be made to the typical programming?

- ○ Yes, we will make changes.
- ○ No changes will be made. Typical programming will resume when allowed.
- ○ We do not know yet.

Display This Question:
If If/when programming resumes, will changes be made to the typical programming? = Yes, we will make changes.

14.4 If known, please briefly list or describe what type of changes that will be made when programming resumes:

_____

End of survey.

APPENDIX D. IRB NOTICE OF APPROVAL

Oregon State University Research Office

Human Research Protection Program
& Institutional Review Board
B308 Kerr Administration Bldg, Corvallis OR 97331
(541) 737-8008
IRB@oregonstate.edu
http://research.oregonstate.edu/irb

Date of Notification	November 25, 2020		
Notification Type	Approval Notice		
Submission Type	Project Revision	Study Number	IRB-2020-0743
Principal Investigator	Sam W Logan		
Study Team Members	Case, Layne K; Kasthuriarachchi, Randi H; Noregaard, Samantha J		
Study Title	A critical summary of campus-based adapted physical activity service-learning opportunities for undergraduate students		
Review Level	FLEX		
Waiver(s)	Documentation of Informed Consent		
Risk Level for Adults	Minimal Risk		
Risk Level for Children	Study does not involve children		
Funding Source	None	Cayuse Number	N/A

APPROVAL DATE: 11/24/2020 **EXPIRATION DATE:** 09/24/2025

A new application will be required in order to extend the study beyond this expiration date.

Comments: Project revision to modify survey instrument. Waiver of the requirement to obtain signatures for consent under institutional policy.

The above referenced study was approved by the OSU Institutional Review Board (IRB). The IRB has determined that the protocol meets the minimum criteria for approval under the applicable regulations pertaining to human research protections. The Principal Investigator is responsible for ensuring compliance with any additional applicable laws, University or site-specific policies, and sponsor requirements.

Study design and scientific merit have been evaluated to the extent required to determine that the regulatory criteria for approval have been met [45CFR46.111(a)(1)(i), 45CFR46.111(a)(2)].

Adding any of the following elements will invalidate the FLEX determination and require the submission of a project revision:

- Increase in risk
- Federal funding or a plan for future federal sponsorship (e.g., proof of concept studies for federal RFPs, pilot studies intended to support a federal grant application, training and program project grants, no-cost extensions)
- Research funded or otherwise regulated by a federal agency that has signed on to the Common Rule, including all agencies within the Department of Health and Human Services
- FDA-regulated research
- NIH-issued or pending Certificate of Confidentiality
- Prisoners or parolees as subjects
- Contractual obligations or restrictions that require the application of the Common Rule or which require annual review by an IRB
- Classified research

Oregon State University Research Office

Human Research Protection Program
& Institutional Review Board
B308 Kerr Administration Bldg, Corvallis OR 97331
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- Clinical interventions

Principal Investigator responsibilities:

- Keep study team members informed of the status of the research.
- Obtain IRB approval for project revisions prior to implementing changes as required by section 8.6 of the Policy Manual.
- Report all unanticipated problems involving risks to participants or others within three calendar days.
- Use only approved consent document(s).