

ADAPTED PHYSICAL EDUCATION

Adapted Physical Education Service Approaches and the Effects on the Perceived Efficacy Beliefs of General Physical Education Teachers

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Abstract

The purpose of this study was to determine what effect the type of APE service approach had on GPE teachers' efficacy when working with students with disabilities. The three approaches of APE service delivery chosen for the study were (a) consultation, (b) itinerant, and (c) collaborative. Results indicate significant differences between levels of service: Consult, $F(3, 98) = 5.09, p = .003$; Itinerant, $F(3, 97) = 10.80, p = .000$; Collaborative, $F(3, 98) = 13.64, p = .000$. As well, the collaborative method produced the highest level of efficacy in the participants, $F(3, 303) = 19.09, p = .000$. The study indicates the collaborative approach of APE service support may be the most effective in increasing GPE teacher efficacy when working with children with disabilities.

Since 1975, and Public Law 94-142, there has been a push for inclusive education classes in which students with disabilities are educated along with their peers without disabilities in the least restric-

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tive environment (LRE). This has led to many interpretations of the terms *inclusion* and *least restrictive environment* (Block, 1996). Some see inclusion as full-time integration, whereas others see it resembling the old term *mainstreaming* by placing a student into special rotations such as art, music, or physical education for socialization purposes only. Kudlacek, Jesina, Sterbova, and Sherrill (2008) described inclusion as providing the support needed to ensure students with disabilities remain successful as part of the general education classroom. The physical education classroom is no exception to the laws; despite their disabilities, students should have the opportunity to participate with their peers in the general physical education (GPE) class.

Despite the interpretation used, the GPE teacher is obligated to ensure the students with disabilities as well as the students without disabilities are successful in their classes. Many researchers have found teachers feel inadequately prepared to adapt and modify their lessons and feel they need more training and support when working with these combined groups (Ammah & Hodge, 2006; Hodge, Ammah, Casebolt, LaMaster, & Sullivan, 2004). Cook, Tankersley, Cook, and Landrum (2000) found many teachers lack the understanding of working with the unique characteristics of a student with a disability. In contrast, Salend and Dehaney (1999) found teachers who have collaborative and consultation support by qualified personnel have a more positive attitude toward working with students with disabilities in their classrooms.

One way of providing these supports for the GPE teacher is having the availability of an adapted physical education (APE) specialist to provide collaboration and consultation. However, across the nation, APE services are interpreted differently, varying greatly from state to state. Such areas of interpretations include determining which educational professionals are qualified to teach APE and how APE services should be delivered (Obrusnikova & Kelly, 2009). Some efforts have been made to determine appropriate qualifications for an APE instructor (Kelly, 2006). However, not much effort has been made to examine which approach, or approaches, is most effective for APE service delivery. In some school districts, collaborative teaching is offered with an APE specialist working in a class along with the GPE teacher, whereas in other districts, no direct APE support is provided (Arnhold, 2006).

Three of the most common APE service delivery approaches are consultation, itinerant, and collaborative (Obrusnikova & Kelly, 2009). These approaches are designed not only for the student who qualifies, but also as a service for the GPE teacher, who is often the individual responsible for providing the service to the students with special needs. All three delivery approaches include consultation as part of their services; however, the level of consultation varies based on caseload, size of district, and available APE specialists. With such diversity in service delivery in APE, it is expected the efficacy levels of the GPE teachers who are expected to take on the task of inclusion would vary based on the level of support they receive. As efficacy theory suggests, support areas such as mentoring through vicarious experience play a significant role in developing a person's efficacy beliefs. Many GPE teachers who receive little training or support from specialists such as an APE specialist feel frustrated and inadequate at dealing with the unique needs of students with disabilities, especially in the areas of severe physical limitations (LaMaster, Gall, Kinchin, & Siedentop, 1998). This frustration may affect the GPE teachers' efficacy level when working with students with disabilities. Teachers with higher teaching efficacy are more likely to believe they can make a difference with their students. They are also more likely to put forth the necessary effort to make accommodations and modifications for students with special needs (Obrusnikova & Kelly, 2009; Tschannen-Moran & Hoy, 2001).

Consultation Approach

In a consultation approach, the APE specialists collaborate with the classroom teachers, parents, and the GPE teachers to make accommodations in the GPE class so the physical education needs of students who qualify for APE services are met in the general education setting (Block, 1999). Those who work in a consultation capacity usually carry a large caseload. Lytle and Collier (2002) studied the perceptions of APE specialists on the consultation process. Six APE specialists (four females and two males, ranging in experience from 3–18 years) participated in the qualitative study. Interviews and observations were used to gather the information; the participants agreed consultation is designed to be a collaborative effort to meet the students' specific and individualized needs, but it does not

include working directly with the students in a physical education setting. In this delivery system, the GPE teacher is responsible for implementing the APE goals from the individualized education plan (IEP) and is supported through varied interactions such as talking to the APE specialist without visual contact (e.g., e-mail, telephone contact), meeting in person with the APE specialist, and at times, modeling with the APE specialist or instructional assistant.

The consultation approach is used in many districts because it is cost effective and satisfies their interpretation of IDEA. In a study by Kelly and Gansneder (1998), 59% of APE specialists surveyed provided indirect teaching support and acted only as consult to the GPE teacher. Heikinaro-Johansson, Sherrill, French, and Huuhnka (1995) developed and tested a consultation approach of APE to determine if it would assist the GPE teachers with including students with disabilities in their classes. Data were collected from the GPE teachers in two communities in Finland. They were given the following APE consultation assistance: telephone contact to inquire if assistance was needed, intensive consultation two times a week with personal contact and collaborative efforts to analyze needs and create lesson plans, and limited consultation with one-time-a-week or less collaborative contact and more individual assistance on lesson plans through video analysis. Heikinaro-Johansson et al. found evidence that teachers, paraprofessionals, and students benefited from APE consultation. Most indicated they benefited from the assistance with developing lesson plans as well as the modeling of the lessons with the specific accommodations. As noted in the study, as the teachers' skills improved, so did their trust in their own ability. Some teachers even reported increased confidence when including students with disabilities into their classroom. It has further been suggested GPE teachers who receive consultation from an APE specialist are more likely to accept students with disabilities into their classrooms (Block & Obrusnikova, 2007).

Consultation appears to be used more often (Kelly & Gansneder, 1998), but it is only one of the delivery systems available. This approach is preferred in some districts, whereas in other districts a more direct service of APE is provided that may also include providing consultation to the GPE teacher as needed.

Itinerant Approach

In the itinerant approach of service delivery, the APE specialists travel to several campuses to work with students who qualify for APE services. Many students who qualify for APE services participate in the GPE class, but also receive APE support outside of the GPE class. Often, this direct service is provided by incorporating a “pull-out” method of taking the student out of the classroom to give additional support and service for the specified amount of time designated in the IEP (Hodge & Akuffo, 2007). Akuffo and Hodge (2007) completed a study to examine the roles and responsibilities of itinerant APE specialists. In this study, six female APE specialists with 4–24 years of experience in an urban school district participated in an exploratory multiple-case study. Data collection was completed through demographic data sheets, interviews, and on-site observations. The itinerant approach was identified as service delivery in a self-contained setting taught exclusively to the students with disabilities by the APE specialist. Roles and responsibilities included providing a fun and safe environment for learning, developing IEPs, and designing and delivering lesson plans. The APE specialist was also responsible for evaluation, development of IEP goals, and documentation of progress toward those goals while working directly with the student. The itinerant APE specialist also may provide consultation to the GPE teacher for students participating in the GPE class (Akuffo & Hodge, 2008; Hodge & Akuffo, 2007). Although the itinerant approach provides the direct service to the student as well as consultation to the GPE teachers, it is often seen as an independent service from the GPE class because of the “pull-out” lessons provided in a less intensive setting. Therefore, in some districts, the delivery approaches of consultation and itinerant are combined into a collaborative approach.

Collaborative Approach

A third means of service delivery is the campus collaboration approach in which APE specialists are assigned to a home campus. In this approach, the APE specialist and GPE teacher work together in a collaborative setting (Lytle, Robinson, Lavax, & Huettig, 2003). Classes comprise students with IEPs for APE and GPE students who provide peer role approaches in the physical education setting. Small

class instruction is also provided as needed. It is common for lesson plans to be devised together with accommodations and modifications created as part of the GPE lesson. Responsibilities of the APE specialist include initiating accommodations while the GPE teacher instructs the class. It is also common for the collaboration approach to include parents, the classroom teachers, and related services as part of the process (Maguire, 1994). Lytle et al. (2003) define collaboration as a partnership that allows professionals to reflect on their own practice, share responsibility, share resources, and share equal power. In return, they are equally accountable. Research on the collaboration approach is sparse. Vogler, Koranda, and Romance (2000) found positive effects of the collaborative approach when examining an inclusive class that contained students with disabilities (including students with severe disabilities) and the support of a full-time APE teacher. This concurs with the study by Heikinaro-Johansson et al. (1995), in which they found the teachers felt they benefited from the hands-on experience with an APE specialist in the classroom to approach accommodations in a real-time situation.

In each of the three APE service delivery approaches, the APE specialist provides support to the educational staff. Particularly important is the provision of consultation and in-service training support to GPE teachers, special education teachers, classroom teachers, and paraprofessionals in each approach (Silliman-French & Buswell, 2008). With the support approaches being used in APE, teachers' efficacy beliefs and their resultant persistence and understanding of inclusion may be affected.

Teacher Efficacy

Teacher efficacy is the teacher's beliefs in his or her ability to bring out the desired outcomes of student engagement and learning (Tschannen-Moran & Hoy, 2001). Personal factors, behavior, and the environment that surrounds them determine human behavior (Bandura, 1977, 1986). Bandura (1989) also suggested individuals are influenced by the actions surrounding them and the actions of others. Through this influence of social situations, a person develops the capability to adapt to outside events. Multiple variables may account for and affect teacher efficacy, including amount of teaching experience (performance accomplishments), having previous good modeling of APE services (vicarious experience), and the provision

of in-service training and support from the district (verbal persuasion). According to the social cognitive theory (Bandura, 1977), these are sources of efficacy beliefs and thus may have a direct effect on the GPE teacher's efficacy level when working with students with disabilities in areas such as adaptations of lesson plans, implementations of accommodations, and participation in the IEP process (Block, Taliaferro, Harris, & Krause, 2010). Many researchers believe teacher efficacy is directly related to student achievement (Ashton & Webb, 1986; Ross, 1992). Using this concept, teachers who had preservice experience as well as experience teaching children with disabilities may have higher teacher efficacy in the inclusion setting.

Performance Accomplishments

A performance accomplishment is the personal experience a person may have while completing a task. Whether the experience is positive or negative may play a large part in teacher efficacy. Hoy and Woolfolk (1990) completed a study with 191 liberal arts majors engaged in their student teaching for general education. Twenty items from the Teacher Efficacy Scale, developed by Gibson and Dembo (1984), as well as two questions from the Rand Corporation evaluations, were used as the survey instrument. The survey used a 6-point Likert scale with a response scale from *strongly agree* to *strongly disagree*. The survey was distributed on two occasions: at the beginning of participants' student teaching practice and at the end of term. Teaching experience during student teaching practicum had a greater effect on personal teaching efficacy than did not having preservice experience. The need for successful experiences was further documented in a qualitative study of two secondary GPE teachers who provided inclusion practice for students with severe disabilities in the GPE class (Ammah & Hodge, 2006). Questionnaires, observations, and interviews were used to collect data. In both cases, the teachers felt they were inadequately prepared to teach students with disabilities; both felt the need for more preservice training and experience. Hodge and Jansma (1999) concurred, describing student teaching as an important factor in attitude development when working in a full inclusion setting.

Vicarious Experiences

Personal experiences have been shown to be an important factor, but vicarious experiences may be another source of a person's efficacy beliefs. Vicarious experiences are gained through modeling, such as observing someone else perform and be successful at a specific task. Hagen, Gutkin, Wilson, and Oats (1998) studied the use of vicarious experience to enhance efficacy beliefs of preservice general education teachers. Eighty-nine preservice teachers were randomly assigned to one of two groups and completed questionnaires pertaining to their efficacy beliefs about being a future teacher. The participants in the experimental group then watched a behavior management videotape, whereas the control group watched a placebo tape pertaining to the discrimination against people with disabilities. The experimental group had significantly higher levels of perceived efficacy on management, discipline, and personal teaching efficacy than the control group. Hagen et al. found the efficacy level of those in the experimental group increased when observing others practicing good management and discipline techniques. Studies such as this lend evidence to the idea that GPE teachers who have the opportunity to student teach or observe an APE specialist when making accommodations to lesson plans may have higher teacher efficacy when asked to complete such tasks on their own. Thus, it is also easy to assume that because many veteran teachers did not have the opportunity to student teach in an inclusive environment, this lack of opportunity to model from a mentor teacher in such an environment may negatively influence teacher efficacy. With most delivery approaches of APE services, the GPE teacher has personal contact with the APE specialist through consultation. In other delivery approaches such as itinerant and collaboration, the APE specialist is available to demonstrate physically how to deliver accommodations and modifications during the activity and model how to meet the needs of the students involved. This collaborative method of service delivery, in which an APE specialist team-teaches with the GPE teacher, can be a highly effective educational practice as the GPE teacher is given the opportunity to model the APE specialist and in turn become more confident in working with students with disabilities (Vogler et al., 2000).

Social Persuasion

A third factor that effects teacher efficacy is social persuasion, defined as encouragement and positive support for a person's efforts. Bandura (1977) stated a person can be persuaded to believe they have the skills to be successful based on others' words or their own self-talk. An example of this is when an observer tells a teacher how much they enjoyed the lesson they just watched and explains how they felt the student was successful in that activity. This feedback increases a feeling of preparedness. Another strategy used of social persuasion is self-talk. Self-talk is an efficient learning strategy; it is a way for teachers to think and focus on their performance. Through this strategy, a teacher is able to accept new challenges with confidence and persistence (Anderson, 1997). Unfortunately, research continually indicates that many teachers have low perceived efficacy and feel ill-prepared because of a lack of support from their district and their APE staff, which likely results in a lack of feedback and negative self-talk (Ammah & Hodge, 2006; Hodge et al., 2004; Kudlacek et al., 2008; LaMaster et al., 1998). Fostering and promoting positive self-talk can help build teacher efficacy and support the GPE teacher when asked to work with children with disabilities. Although research on social persuasion and the effects on teacher efficacy in the field of physical education is limited, Bandura (1977) noted that by itself, social persuasion may not be a long-lasting performance enhancer; however, it may enhance the effects of the other interventions such as performance accomplishments, vicarious experience, and the perceptions and control of physiological factors. The role of the APE specialist in any service delivery approach is to provide this type of consultation and intervention for the GPE teacher, which may lead to higher teacher efficacy.

APE Support and Teacher Efficacy

The idea that teacher efficacy may be self-aiding or self-hindering is an important factor in the role of the GPE teacher when working with large classes and when making adaptations to lessons. Based on the theory of teacher efficacy, the more positive experiences the teacher has, the higher the motivation to make the necessary accommodations and modifications to allow students to be successful. Teachers with higher teacher efficacy are also predicted to work

longer with students who are struggling in their classes (Gibson & Dembo, 1984).

According to the *Adapted Physical Education Manual of Best Practices* (Silliman & French, 2008), the APE specialist should provide consultation services and in-service education to the GPE teacher. These actions, along with appropriate modeling, encouragement, and support, may assist in providing the action and influence Bandura (1977, 1989) described to increase teacher efficacy when working with children with disabilities in a physically active setting. In return, the GPE teachers may be more receptive to making the adaptations necessary for successful inclusion of students with disabilities in their classroom. Teachers with higher teaching efficacy tend to be more receptive to implementing new instructional practices (Guskey, 1988) and provide a more active effort to addressing difficult challenges (Bandura, 1977, 1989).

The concept that the GPE teacher may be more willing to make the necessary effort in making accommodations and modifications for an already large class size is important when GPE teachers are asked to incorporate students with disabilities into their classes with their peers without disabilities. Block et al. (2010) support that access to specialists and resources is a major factor in making inclusion successful for the GPE teacher. APE services such as consultation, in-services, modeling, and collaboration can be the strong support base to which GPE teachers can turn to enhance their teacher efficacy when working in inclusive settings. These services may provide the GPE teacher with opportunities for performance accomplishments, vicarious experiences, and social persuasion. However, with the various support available through APE services, it is unclear which support has the highest influence on the GPE teacher efficacy. Even though it is recommended that each service delivery approach provide the GPE teacher with support such as consultation, collaboration, and teacher in-servicing, studies show that APE specialists do not always view this as a priority (Akuffo & Hodge, 2008). Because Texas, as with many states, is not unified on the delivery of APE services, GPE teachers receive various levels of support that may or may not meet intervention needs for their students with disabilities.

According to Bandura (1977), performance accomplishments, vicarious experiences, and social persuasion play important roles in the efficacy beliefs of the instructors. In turn, these factors may play a

vital role in teachers' efforts and their belief in their ability to include students with disabilities into their classrooms. The levels of support in APE such as consultation, itinerant, and collaboration directly affect the amount of performance accomplishments, vicarious experiences, and social persuasion GPE teachers experience when working with students with disabilities and in turn may directly affect teachers' efficacy levels when working in an inclusive setting. Although best practices in the area of GPE have been suggested, standards have not been set for delivering APE services. This leaves district administrators to decide how APE services will be rendered, leaving many GPE teachers to teach in an inclusive setting with potentially low teacher efficacy levels. It is imperative studies be completed to see which method of service delivery best meets not only the needs of the students, but also the needs of the GPE teachers, who are ultimately responsible for the successful inclusion of all students into their classrooms.

Purpose of the Study

The purpose of this study was to determine the effects that various APE service delivery options have on teacher efficacy toward working with children with disabilities in a GPE class. Two research questions were tested. The first was if GPE teachers who have children with disabilities included in their classes with their peers without disabilities will show significantly different perceived teaching efficacy levels among the three methods of APE service delivery in each district. The second research question was if GPE teachers who have children with disabilities included in their classes with their peers without disabilities will have a significantly higher perceived teaching efficacy level when working with a collaborative delivery service compared with the consultation and itinerant approaches of APE service delivery.

Method

Participants

Upon receiving institutional human subjects approval, individuals were solicited to participate in this study. The participants were recruited from the GPE staff at a large school district in Texas and a smaller school district in the surrounding area. Participants who

agreed to complete the survey were 102 elementary GPE teachers with 2 or more years of experience. Participants were informed of the purpose of the research and completed and signed an informed consent form. Participants were 70 female GPE teachers and 32 male GPE teachers. The average age of the participants was 43.71 ($SD = 9.75$). The average teaching experience of the GPE teachers who participated in the survey was 16.05 years ($SD = 8.48$), and the average number of GPE students per class was 53.66 ($SD = 19.90$). Of 101 responses, 29 participants reported currently using the consult method, 32 reported using the itinerant method, 24 reported the collaborative method, 16 reported none, and one participant did not respond. Participants have taken an average of 3.09 ($SD = 1.20$) university courses pertaining to individuals with disabilities.

Instruments

Demographic questionnaire. The participants completed a demographic section of the survey. The participants were asked the following: gender, age, ethnicity, the average number of students in the GPE class, the number of years teaching in the GPE classroom, and the number of university courses they had completed regarding children with disabilities in the GPE class.

General physical education efficacy survey. The instrumentation used was a 26-item questionnaire. We developed the questionnaire based on recommendations of APE practices and expectations in the *Adapted Physical Education Manual of Best Practices* (Silliman-French & Buswell, 2008) as well as the *Adapted Physical Education National Standards* (Kelly, 2006). Each of these resources added validity to the GPE efficacy survey as they cumulatively address the competencies and best practices being used nationally to train and prepare adapted physical educators. The questionnaire was used to measure the GPE teachers' perceived level of confidence when working with students with disabilities in the GPE class with the various service delivery approaches: Consultation, Itinerant, and Collaborative.

The three support services were defined, and the GPE teachers used a 7-point Likert scale from 1 (*not confident*) to 7 (*very confident*) to best describe their confidence in the following areas of working with students with disabilities in GPE: planning learning activities, modifying games or activities, using assistive devices, understand-

ing contraindicated activities, participating in the IEP process, and including students with severe physical disabilities. The higher score indicated a higher perceived efficacy for each question.

Validity and reliability evidence. The survey was given to a panel of five experts in the fields of GPE, APE, and efficacy research for ensuring face and content validity. At the request of the panel experts, formatting changes were made to define each area and clarify the meaning of the Likert scale. Other changes were made to clarify the definitions of the three approaches of APE service delivery options chosen for study. None of the corrections made changed the direction of the study. The experts ranked each question on a scale from 1 (*question was inappropriate*) to 5 (*very appropriate*). The highest ranking average score possible from the experts was 25, indicating a perfect score. The experts scored an average 23.1 out of 25. The lowest score was 22 and the highest score was 25 from the panel of experts. These results indicate the survey is valid for this study. To test survey reliability, 20 elementary GPE teachers took the survey, and 1 week later, they took the same survey again. The results deem the survey reliable: Consult ($r = .707$), Itinerant ($r = .748$), Collaborative ($r = .769$).

Procedures

Permission to conduct the study was obtained from the institutional review board. A letter was sent to each elementary teacher explaining the purpose of the survey as well as confidentiality procedures. The letter also contained an incentive for completing the survey. Participants were informed that if they participated in the survey, they would be included in a drawing for a \$25 gift card to a local retailer. A ticket containing two sets of numbers was attached to each survey. The participants returned one half of their ticket attached to their survey. Tickets were immediately removed upon receipt and placed in a sealed container. Once surveys were returned, a drawing was done and participants were notified of the winning number via e-mail. Permission was given in each participating district to have the questionnaires sent via the internal mail system for its district. For districts outside the local area, participants completed and returned the survey online.

Data Analysis

Descriptive analyses were used to address age, gender, ethnicity, years of GPE experience, number of GPE students in the class, and number of university courses completed regarding children with disabilities. Means were computed for each subscale and used in the analyses. SPSS 18.0 was used to compare the three methods of APE service delivery; to test the first research question, a one-way analysis of variance was conducted, and to test the second research question, a repeated measures analysis was conducted.

Results

To test the first research question, that GPE teachers who have children with disabilities included in their classes with their peers without disabilities will show significantly different perceived efficacy levels among the three approaches of APE service delivery in each district, three one-way ANOVAs were performed to examine the difference among the four groups for each delivery approach: Consult, $F(3, 98) = 5.09, p = .003$; Itinerant, $F(3, 97) = 10.80, p = .000$; Collaborative, $F(3, 98) = 13.64, p = .000$.

A post hoc Tukey HSD test was conducted, and the most significant difference occurred between those who have no APE service and all other service approaches: No APE vs. Consult ($p = .002$), No APE vs. Itinerant ($p = .005$), and No APE vs. Collaborative ($p = .026$).

To test the second research question, that GPE teachers who have children with disabilities included in their classes with their peers without disabilities will have a significantly higher perceived efficacy level when working with a collaborative delivery service compared with the consultation and itinerant approaches of APE service delivery options, a one-way repeated measures analysis was completed and showed a significant difference between the approaches, $F(3, 303) = 19.09, p = .000$.

A post hoc Bonferroni test was conducted, and all of the delivery approaches were significantly different. A difference was also found between the itinerant and consult approaches as well as a significant difference between the collaborative model and the consult and itinerant approaches ($p = .000, p = .000$).

Discussion

The purpose of the study was to determine the effects various APE service delivery options have on teachers' perceived efficacy toward working with children with disabilities in a GPE class. We examined if various APE service delivery approaches affect perceived teacher efficacy and if perceived teacher efficacy was higher when the collaboration model was used.

This study demonstrates a trend of higher efficacy scores as APE support increases throughout the three delivery approaches. Participants who currently have no APE support in their district reported the lowest efficacy when working with students with disabilities compared with all other approaches. As expected, this seems to suggest the lack of positive personal experiences, vicarious experiences, and social persuasion available for these teachers resulted in a lower rate of teacher efficacy. In contrast, the consult method of support, which in this study included only verbal and e-mail contact between the APE specialist and the GPE teacher, was related to higher teacher efficacy. This seems to indicate that even when support is limited, it is still useful for increasing teacher efficacy, and this is consistent with previous findings by Lytle and Collier (2002) whereby consult methods used between the GPE and the adapted physical educator, whether direct or indirect, increased teacher efficacy.

Comparison with the itinerant model indicates perceived efficacy levels that were also significantly higher than those with no APE support. This result supports suggestions by Block et al. (2010) on using APE staff as a necessary resource for making inclusion successful. The findings of this study also concur with Lytle and Collier's (2002) and Heikinaro-Johansson et al.'s (1995) studies in which having an APE specialist on campus who worked directly with the GPE teacher helped increase GPE teachers' perceived efficacy.

The highest reported teacher efficacy was for the collaborative method, which included team teaching, lesson plan collaboration, and hands-on assistance with accommodations and modifications. This method not only gives the GPE teacher the vicarious experiences absent in the other approaches, but also allows for replication and refinement of delivery strategies as the GPE teacher is able to model the APE specialist working directly with the student. This model allows the GPE teacher to visualize the various methods for

increasing students' potential, rather than focusing on the lack of potential, which may also decrease the apprehension and negative self-talk present within the GPE teacher without collaboration. By seeing the instructional strategies being used successfully to elicit the positive acts of students with disabilities, the GPE teacher may have less anxiety and fewer doubts, consequently allowing efficacy to increase. With the lack of previous research on the collaborative method and teacher efficacy, it is difficult to corroborate the findings; however, these results illustrate the need for future studies on this APE service method and its effects.

As the level of APE support increased, so did the efficacy level of the GPE teachers. The collaborative model, by design, includes team teaching, lesson plans, accommodations, modifications, modeling, hands-on assistance, and encouragement, so it is reasonable to assume these factors play a direct role in the increase of GPE teachers' efficacy, which makes sense as these are sources of efficacy beliefs (Bandura, 1977). As well, this model allows for GPE teachers to work through the physiological factors they may be experiencing such as nervousness or hesitation, which may occur when working with children with disabilities, and to discuss the specific needs with the specialist in real time. The collaborative method also allows for systematic reflection and brainstorming to predict the needs for accommodations and modifications and to plan strategies for implementation. Based on these factors, the theoretical implications of the findings indicate the collaborative method is considered the highest level of support and therefore may produce the highest level of efficacy in GPE teachers when working with students with disabilities in their classes.

Limitations

Within this study, limitations in the design and internal validity were present. For example, the questionnaire was not specific to the program the participants were using. Having the participants predict their confidence levels for a program in which they may never have participated may have led to an over- or underestimation of efficacy. We attempted to address this threat by making sure the description of the service delivery approaches offered a clear definition and representation of the variables for each approach to increase comprehension of the participants so they could more clearly represent their

level of confidence. Additionally, we did not control for the background experiences of the participants. Teacher demographics such as age, the number of university courses previously taken, and the teachers' experience in each model may have also affected the internal validity. Thus, these findings should be interpreted with caution; however, these findings initiate and highlight an important area of research within physical education. In future studies in this area, researchers should try to control for participants' background as well as examine GPE teachers using each approach and then examine their present level of confidence. The sample size was also relatively small and encompassed a small section of the Texas region, thus limiting generalizability. This also may have been a limitation on the participants. Participants in the study consisted solely of GPE teachers. Other professionals who are expected to assist students with disabilities such as support staff and classroom teachers were not surveyed; these staff are included in the responsibility of the APE specialist and perhaps should be included in future studies of services and efficacy.

Another variable may have affected the external validity of the study: Because there is no unified method of APE services delivery, each approach may be implemented differently within each district; therefore, the impression of consult to one GPE teacher may not be the same impression to another. For analysis of the data, we relied on grouping the participants by current level of service. In future studies, researchers should more clearly define the independent variables such as the current program as part of the questionnaire and have the participants only consider current level of efficacy when working with students with disabilities.

However, although limitations were present, these results show that of the three most currently used methods of APE services, the collaborative method may be the most appropriate to increase teacher efficacy when working with students with disabilities. These results should not be discounted and should serve as a foundation for future research.

Conclusion

We sought to answer the question of whether the method of APE service delivery affected the efficacy of the GPE teacher as well as which approach of APE services may be best for enhancing GPE teacher efficacy. We found higher perceived teacher efficacy as the

level of support increased. Perceived teacher efficacy was highest with the collaborative method, which included consultation, collaborative lesson plan design, and team teaching. These findings create a foundation for a unified delivery of APE services throughout the state of Texas to ensure all GPE teachers are receiving similar support within the various districts. As well, the study assists in clarifying the need for more collaborative support in the GPE classroom to increase teacher efficacy and meet the unique needs of individuals with disabilities. If APE services are more unified and teachers are provided with appropriate support, individuals with disabilities will have every opportunity to participate successfully in regular physical activity and reap the physical, social, and cognitive benefits.

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