

Role of Previous Experience on Pre-Service Physical Educators' Confidence in Teaching Individuals with Disabilities: Mediation Analysis

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Abstract

This study aimed to examine relationships among the confidence of pre-service physical educators in teaching individuals with disabilities (IWDs), their previous experiences, and the quality of experiences and to test if the relationship between the quality of previous experiences and confidence in working with IWDs is mediated by the previous experiences. A total of 150 pre-service teachers completed a questionnaire. Significant relationships were found between previous experiences and the quality of such experiences ($r = .70, p < .001$), previous experiences and confidence ($r = .50, p < .001$) and the quality of previous experiences and confidence ($r = .35, p < .001$). The regression analysis indicated that the quality of previous experiences was a significant predictor of confidence, $\beta = .35, F(1, 148) = 20.19, p < .001$. The quality of previous experiences was related to previous experiences, $\beta = .70, F(1, 148) = 142.76, p < .001$. Previous experiences was associated with confidence, $\beta = .50, F(1, 148) = 50.18, p < .001$. The results of the mediation analysis confirmed the mediating role of previous experiences in the relationship between the quality of previous experiences and confidence, $\beta = .24$ (CI = .15 to .33). After controlling for previous experiences, the direct effects of the quality of previous experiences on confidence became non-significant, $\beta = -.01, t(147) = -.12, p = .904$. Finally, the results of the bootstrapping test showed that the mediation model was significant, $Z = 4.69, p < .001, \kappa^2 = .24$.

Keywords: Pre-service physical educators, Confidence, Previous experience, Students with Disabilities.

Introduction

The pre-service stage is a foundational step toward a professional teaching career and a critical component of engagement with the profession (Fessler & Christensen, 1992). This stage may be the most influential factor in effective teaching performance for the rest of a teacher's occupational life, even though the teacher career cycle model maintains that many factors influence each stage of an educator's career. This argument was supported by some researchers, who indicated that teachers at the beginning year of employment have a firmly entrenched belief system that is difficult to change (Fessler & Christensen, 1992; Lynn, 2002; Woods & Lynn, 2001). Such belief system is constituted, for instance, by a teacher's negative experiences, memories, or feelings for another person or situation, which drive the teacher to exhibit unfavorable reactions to circumstances that are similar to those that fostered negativity (Fessler & Christensen, 1992).

Since the promulgation of the Individuals with Disabilities Education Act in 1990, many students with disabilities (SWDs) have been placed in mainstream classrooms (U.S. Government Accountability Office, 2010). In accordance with this ordinance, both adapted physical education (APE) and general physical education (GPE) teachers are expected to provide high-quality physical education services to SWDs. Transition toward this shift, however, has not been smooth over the past decades. Block (1999) reported that many GPE teachers are unprepared to accommodate SWDs in their GPE programs. The limited training and experience of GPE teachers in this regard also seem to affect their attitudes toward teaching such students (Jeong & Block, 2011). Many other researchers have consistently identified the insufficient training of GPE teachers as an impediment and underscored the importance of APE oriented training programs that are intended to enable GPE teachers to feel comfortable and competent in teaching SWDs (Hodge, Ammah, Casebolt, Lamaster & O'Sullivan, 2004; Jeong, 2014). Jeong (2013) emphasized that those training initiatives should be incorporated into physical education curricula in physical education teacher education (PETE) programs and the pre-service physical education teachers complete with practical experiences throughout curricula to improve the knowledge, competencies, and confidence in instructing SWDs.

According to Hodge, Murata, & Kozub (2002), pre-service physical education teachers may harbor negative perceptions of individuals with disabilities (IWDs) when they have not acquired practical work experiences with IWDs. The same issue holds among GPE teachers. Several studies

reported a positive link between the practicum experiences of pre-service physical education teachers and their behaviors, attitudes, and perceived competence (Hodge, Davis, Woodard, & Sherrill, 2002; Hodge, Tannehill, & Kluge, 2003; Jeong, 2013; Rizzo & Kirkendall, 1995). Researchers also found that pre-service physical education teachers who obtain positive previous practicum experiences in teaching IWDs and have high perceived competence show favorable attitudes toward the aforementioned learners (Rizzo & Kirkendall, 1995; Trip & Rizzo, 2006). These findings were supported by Jeong (2013), who demonstrated a strong relationship between pre-service physical education teachers' previous work experiences and their confidence in teaching IWDs during the practicum stage of their training.

Previous research indicated that pre-service practicum experiences expand content knowledge, develop positive attitudes toward IWDs, and enhance teachers' confidence levels (Hodge, Davis et al, 2002; Hodge et al, 2003; Jeong, 2013; Rizzo & Kirkendall, 1995). Despite the insights derived from these studies, however, limited efforts have been devoted to illuminating the effects of previous coursework and teaching experience on the confidence of pre-service physical educators in teaching IWDs before their introductory APE practicum course. An understanding of pre-APE experiences and confidence levels is essential to the provision of effective introductory APE courses and practicum experiences to pre-service physical educators who will be working with IWDs.

With consideration for the above-mentioned issues, this study was conducted to examine the confidence of pre-service physical educators to work with IWDs and the factors that are related to their confidence in instructing such learners in the practicum stage of their training. To this end, the following hypotheses were formulated:

1. The confidence of pre-service physical education teachers in teaching IWDs, their previous experiences, and the quality of such encounters are strongly related.
2. The relationship between the quality that characterizes previous experiences and confidence in working with IWDs is mediated by the previous experiences of pre-service physical education teachers in instructing IWDs.

Method:

Participants

A total of 150 pre-service physical education teachers (39% female and 61% male), selected via convenience sampling, consented to take part in the questionnaire survey. The pre-service physical education teachers were undergraduate students enrolled in introductory APE courses offered under the PETE programs of different universities in the northeastern, midwestern, and western regions of the United States. They were at their junior to senior levels

of study and agreed to participate in the survey before their practicum. This study was reviewed and approved by a university institutional review board, after which participant recruitment and data collection were initiated.

Instrument

The questionnaire developed by Jeong (2013) was modified to develop an instrument intended to examine the previous teaching experiences, confidence, and professional attributes of pre-service physical educators. The developed questionnaire consisted of 10 questions, distributed across the following sections: (a) a general section on professional attributes, such as certification for cardiopulmonary resuscitation (CPR), first aid training, athletic experiences, ability to communicate in sign language, and certification for swimming instruction; (b) a section on previous experiences in working with IWDs; (c) a section on the quality of previous experiences; and (d) a section devoted to the level of confidence in teaching IWDs. The respondents were asked to rate the questionnaire items using a five-point Likert scale.

Data Collection

The questionnaire was administered in two ways, namely, through the online platform Survey Monkey (www.surveymoney.com) and through onsite administration of self-report questionnaires at the pre-service physical education teachers' practicum sites. As previously stated, the questionnaire was conducted before the pre-service physical education teachers' practicum, which included teaching various physical activities and swimming programs to IWDs.

Data Analyses

Statistical analysis was performed using SPSS 24.0, and descriptive statistics was used to explain the data. Pearson correlation was employed to determine the correlations among the pre-service physical education teachers' previous experiences (amount of time spent teaching IWDs), the quality of their previous experiences, and their confidence levels in teaching IWDs. The Baron and Kenny (1986) method, which is an analytical strategy for verifying mediation hypotheses, was adopted to test the mediation model in the current work. Finally, bootstrapping was carried out to explore the significance of mediation effects. Indirect effects were tested using bootstrap estimation with 5000 samples to evaluate whether the quality of previous experiences affected the pre-service physical education teachers' confidence in teaching IWDs. The overall statistical significance of the model was set at .001.

Results:

With respect to experience, 65% of the pre-service physical education teachers have not taken classes related to APE or IWDs, 54% indicated little to no experience in working with IWDs, and 24% and 2% admitted to having very bad and bad previous experiences in working with IWDs, respectively. In terms of confidence, 20% reported little to no confidence in teaching IWDs. The results on professional attributes showed that the respondents had CPR certification (62%), first aid training (55%), athletic experiences at the university level (23%), the ability to communicate in sign language (7%), and certification for swimming instruction (9%). Among the pre-service physical education teachers, 32% expressed confidence in teaching aquatics to IWDs.

Significant and strong relationships were found between previous experiences and the quality of such experiences ($r = .70, p < .001$) and between previous experiences and confidence ($r = .50, p < .001$). A statistically significant and moderate relationship was found between the quality of previous experiences and confidence ($r = .35, p < .001$). The results on the correlation among confidence, previous experiences, and the quality of these experiences are summarized in Table 1.

Table 1. *Correlations among preservice educators' confidence, previous experiences and quality of previous experiences*

Variable	Mean	SD	1	2	3
1. Preservice educators' confidence	3.11	.998	1		
2. Previous experiences	2.39	1.134	.503**	1	
3. Quality of previous experiences	3.23	1.502	.346**	.701**	1

The results of the regression analysis indicated (see Table 2) that the quality of previous experiences was a significant predictor of the pre-service physical education teachers' confidence in working with IWDs, $\beta = .35, F(1, 148) = 20.19, p < .001$. The quality of previous experiences was positively related to previous experiences, $\beta = .70, F(1, 148) = 142.76, p < .001$. The findings also indicated that the mediator, previous experiences, was positively associated with confidence in working with IWDs, $\beta = .50, F(1, 148) = 50.18, p < .001$.

Given that both the a-path and b-path were significant (see figure 1), the mediation analysis was validated using the bootstrapping method with bias-corrected confidence estimates (MaeKienen, Loekwood, & Williams, 2004; Preacher & Hayes, 2004). The 95% confidence interval (CI) for the indirect effects was obtained via bootstrap resampling with 5000 iterations (Preacher & Hayes, 2008). The results of the mediation analysis confirmed

the mediating role of previous experiences in the relationship between the pre-service physical education teachers' quality of previous experiences and confidence in working with IWDs, $\beta = .24$ (CI = .15 to .33). After controlling for previous experiences, the direct effects of the quality of previous experiences on confidence in working with IWDs became non-significant, $\beta = -.01$, $t(147) = -.12$, $p = .904$. This finding suggested full mediation. Specifically, the mediating effect of the pre-service physical education teachers' experiences accounted for 96.6% of the variance in the pre-service teachers' confidence levels. Finally, the results of the bootstrapping test showed that the mediation model was significant, $Z = 4.69$, $p < .001$, $\kappa^2 = .24$.

Table 2. *Parameter Estimators in the full structural model*

Structural Relationships	β	SE (B)	p
DV = Preservice teachers' confidence			
$R^2 = .12$, $F(1, 148) = 20.19$, $p < .001$			
IV = Quality of previous experience	.35	.05	<.001
DV = Previous experiences			
$R^2 = .49$, $F(1, 148) = 142.76$, $p < .001$			
IV = Quality of previous experiences	.70	.04	< .001
DV = Preservice teachers' confidence			
$R^2 = .25$, $F(1, 148) = 50.18$, $p < .001$			
IV = Quality of previous experiences	.50	.06	< .001
DV = Pre-service teachers' confidence			
$R^2 = .25$, $F(2, 147) = 24.93$, $p < .001$			
IV: Quality of previous experiences	-.01	.07	= .904
IV: Previous experiences	.51	.09	< .001

Discussion

This study examined the relationship among pre-service physical education teachers' confidence in teaching IWDs, their previous experiences

in this regard, and the quality of such experiences. The research also inquired into the role and effects of the pre-service physical education teachers' previous experiences, as a mediator, on their confidence in teaching IWDs.

The most important result was that the pre-service physical education teachers who had positive experiences (quality of experience) reported strong confidence in working with IWDs during their practicum. In addition, the result showed the significant association between previous IWD-related work experiences and confidence in working with IWDs. The higher the quality of such experiences and the greater the time spent in working with IWDs (previous experiences), the higher the confidence level of the pre-service physical education teachers before the commencement of the practicum stage. This result is consistent with previous studies which showed that pre-service physical educators who had previous experiences in working with SWDs exhibited significantly more favorable attitudes than did those with limited or no experience (Block & Rizzo, 1995; Folsom-Meek, Nearing, Groteluschen, & Krampf, 1999; Hodge & Jansma, 1999).

The results of the mediation model showed that the quality of previous experiences was directly related to previous work experiences and that such experiences were directly associated with the pre-service physical education teachers' confidence. In other words, a chain of influence was evident, with the quality of work experiences affecting such experiences, which in turn, influenced teacher confidence. This chain indicated that both the quality of experiences and the time devoted to them are important predictors of pre-service physical education teachers' confidence. In addition, having positive work experiences may be essential motivators of pre-service physical education teachers to increasingly work with IWDs and exhibit more favorable attitudes toward them. The chain of influence also suggested that pre-service physical education teachers' first experience in working with IWDs could be enjoyable and meaningful, thereby inspiring educators to work with IWDs and eventually developing the confidence to carry out such work. In relation to these findings, Hodge et al. (2003) and Kozub & Lienert (2003) reported that coursework and practicum experiences have extensively been demonstrated as the primary mediating factors in attitudinal change among pre-service physical education teachers with respect to instructing IWDs.

This research provided interesting results, but its limitations are also worth discussing. First, the question related to previous work experience with IWDs did not specify context; some of the participants may have been prompted to restrict their responses to teaching IWDs in physical education settings, whereas the others may have interpreted this as extending to any work experience involving IWDs. Second, the research looked into the overall quality of previous experiences/work was not defined how the pre-service physical education teachers to respond; some pre-service physical education

teachers might respond their overall satisfaction on their previous experience. Future studies should specify different previous experiences and their quality to uncover more detailed information on pre-service physical educators' experiences in working with IWDs. Researchers can also direct attention to the importance of the practicum stage in enhancing pre-service physical education teachers' confidence and how corresponding experiences affect their confidence in being effective teachers in the future.

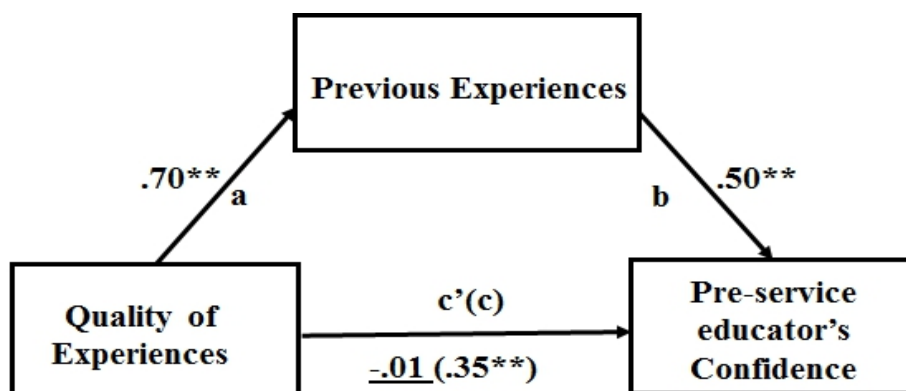


Figure 1. Indirect effect of quality of previous experiences on pre-service physical education teachers' confidence through amount of previous experiences.

Note: * $p < .01$, ** $p < .001$

Conclusion

The results of this study indicated that greater exposure to IWDs instruction would increase pre-service physical education teachers' confidence in teaching SWDs. The mediation model revealed that the pre-service physical education teachers who had positive experiences with IWDs were more engaged in their work with such IWDs and that previous work experiences and their quality increased their confidence in their ability to teach IWDs. PETE programs should be proactive in identifying the effective ways to train highly confident and competent future professionals by addressing the various experiences with IWDs and confidence levels of pre-service physical educators during their APE practicum.

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