Improving Attitudes
Toward Disabled Persons

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The degree to which physical education majors' attitudes toward disabled persons improved after taking an adapted physical education course was examined in this study. Participants included 179 undergraduate students from a large university, some of whom were exposed to course lectures, clinic contact with disabled individuals, relevant films, disability simulations, and readings. A Solomon four-group design was used. Two groups received the course in adapted physical education (pretest-posttest, n=47; posttest only, n=45), and two control groups were not enrolled (pretest-posttest, n=44; posttest only, n=43). Data were collected using the Attitudes Toward Disabled Persons Scale (Yuker, Block, & Younng, 1966). The results indicated significant change of the two treatment groups, leading to improved attitudes toward disabled persons. Secondary findings included the reactivity to pretesting for students in the experimental condition and no statistically significant effects of gender and age.

People often fear what they do not know, what is different, and what makes them feel vulnerable. Attitudes often influence perceptions and choices, and negative attitudes generate barriers to full participation in society, both external and internal. Positive attitudes, on the other hand, enable people to seek out opportunity. For physical education majors learning to teach disabled persons, measurable improvement in positive attitudes would be likely to facilitate desirable teaching outcomes.

Research about attitude formation and change is often controversial. Some findings suggest it is possible to change attitudes and that such progress is involved and gradual. One assumption frequently made is that certain attitudes are due to ignorance or misinformation; therefore, if attitudes are to be changed, people must be educated through the provision of information. Another stance is that behavior should be changed first, and attitudinal change will follow (Mikulas, 1972). A substantial amount of research has been conducted to determine effective methods of altering attitudes toward disabled persons. The purely informational approaches to attitude change have required very little personal involvement or commitment and have had limited success (Nesbitt, 1976; Threlkeld & DeJong, 1982).

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In contrast, Anthony (1969), Hamilton and Anderson (1983), and Yuker et al. (1966) have found that close, personal contact with disabled persons in informal settings resulted in more accepting attitudes. Kisabeth and Richardson (1985) documented the positive effect of one disabled person on the attitudes of a university racquetball class. After integration of the disabled student for 2 hours a week for 15 weeks, the authors found significant changes in attitudes of the nondisabled students. Although no significant change was detected on scores of the Attitude Toward Disabled Persons scale (ATDP), significant changes were recorded on measures of the nondisabled students' attitudes to integrating disabled students into recreational and competitive settings. Mace (1977) observed that, "once negative attitudes or misconceptions about disabled people have been dispelled by exposure to their aspirations and abilities, cooperation seems to begin" (p. 37). Controversy about strategy aside, it appears that the essential ingredients of attitudinal change include accurate information and personal interaction in a meaningful context.

The need for teachers to hold positive attitudes toward their students is a *sine qua non* for effective education (Mori, 1979; Towner, 1984). The teacher preparation regimen and advisement are the typical safeguards employed to assure these positive attitudes. With increasing numbers of handicapped students attending public schools and being mainstreamed into regular classrooms, physical education teachers have been required to teach larger numbers of handicapped students.

Attitudes are the "enduring positive or negative feeling about some person, object, or issue" (Petty & Cacioppo, 1981, p. 7). Unfavorable attitudes are so pervasive in the general population that undergraduate physical education students should be considered no exception (Aloia, Knutson, Minner, & Von Seggern, 1980). Preparation of physical education teachers as required under Public Law 94-142 has not been overwhelmingly effective in developing teachers to instruct handicapped students (Bird & Gansneder, 1979). Evidence suggests that a teacher's attitude toward a particular handicapped student probably exerts an influence upon the student's overall learning (Krauft, Rubin, Cook, & Bozarth, 1976). Berrol (1984) determined that carefully structured contact with disabled persons was essential for the total professional preparation in areas such as physical education, recreation, and physical therapy.

Whether specific teacher behaviors toward handicapped students can be wholly predicted on the basis of general attitudes toward disabled persons is not known, but Lenton and Juul (1980) determined that teacher attitudes are crucial to the success of normalization. If attitudes can be positively changed in the process of a physical education professional preparation experience, that should be seen as an affirmative step to predisposing facilitative teaching behaviors toward handicapped students. Rizzo (1984) described attitudes of physical education teachers toward teaching handicapped pupils in regular physical education classes. While Rizzo found differences based on the age of the handicapped students being placed, teacher attitudes were of considerable concern toward successful handicapped pupil placement. This concern was also reported by Marston and Leslie (1983). Jansma and Schultz (1982) reported that gender of the teacher was a design factor to consider in attitude toward teaching handicapped pupils.

The dimensionality of attitudes has considerable practical and theoretical implications. A major controversy is whether attitudes toward the disabled are
best represented along a single dimension of positiveness–negativeness or as multidimensional. Strong proponents of the multidimensional approach are Antonak (1980), Siller (1984), and Livneh (1985), who demonstrated at least seven attitudinal components. These authors support the thesis that attitude components are not generalized across various disabling conditions. Nonetheless, Siller (1984), in an extensive review of the literature, leaves open the possibility of pursuing the unidimensional concept of disability when in fact a general attitudinal score is needed before pursuing the multidimensional phenomenon. These recent research reviews warn of an interaction between pretest and treatment; therefore research design must adequately address this interaction.

Comprehensive overviews of the topic of attitude change can be found in Fishbein and Ajzen (1975), McGuire (1969), Oskamp (1977), and Triandis (1971). These overviews suggest (a) that the attitude change process is complex; (b) that information exchange (from intent through source, message, channel, receiver, and destination to changed attitudes) is a necessary but not sufficient condition; (c) that resolving cognitive dissonance (Festinger, 1957) between a negative expectancy and a positive cognition/outcome is a possible source of attitude change; and (d) that attitude change may be dependent upon a multitude of individual internal functions (Katz, 1960) such as self-concept, ego defense, self-insight, and belief in a just world.

Recent summaries of previous research have stated that attitudes toward disabled persons have been positively affected by (a) positive personal exposure between disabled and nondisabled populations in a meaningful setting, (b) information about disabilities that reduces ignorance and fear, (c) laws and sanctions that reduce exclusionary behavior, (d) positive attitudes and persuasive behaviors modeled by leaders and influential people, (e) disability simulation, and (f) group discussion (Berrol, 1984; Donaldson, 1980; Petty & Cacioppo, 1981). Evidence within the literature suggests that teacher preparation directed toward more positive attitudes in regard to disabled students requires a multichanneled approach that employs all six methods listed above. Therefore, it was determined that further research was needed in order to examine the impact of attitude change from taking one course in the undergraduate physical education professional preparation curriculum, Adapted Physical Education.

Method

Participants and Group Assignment

Participants in this study were 179 undergraduate student physical education majors enrolled over a 2-year period. A majority (59.8%) of the students were female. The treatment group of 92 students were enrolled in a five-quarter-hour adapted physical education course. The other 87 physical education majors had not yet taken adapted physical education. Given the nonsequential placement of the adapted physical education course (it could be taken in the junior or senior year), the two groups were sufficiently similar for research selection purposes. This sample was one of student selection rather than randomization. Students select their courses according to their own time schedules. Most of the physical education majors are required to take the adapted physical education course; therefore the investigator had no influence on which individuals would be in either group.
The Solomon four-group design was selected for this research study to identify a situation in which the pretest may sensitize individuals to the treatment (Huck, Cormier, & Bounds, 1974). The design required that some subjects take the pretest and posttest (Group I treatment, n=47; Group III control, n=44) while other subjects take a posttest only (Group II treatment, n=45; Group IV control, n=43). There were 53 females and 39 males in the treatment groups, and 54 females and 33 males in the control groups. The age range for the sample was 19 years and 10 months to 27 years and 11 months. The mean age was 20.8 for the treatment group and 20.6 for the control group. Although special education and therapeutic recreation students occasionally took the adapted physical education course, they were excluded from the sample, not because they were considered to have different attitudes (Aufsesser, 1982) but for purposes of focus.

While purely random assignment was not possible, the rather open way in which students selected the sequence of this required course assured no threat to external validity from participant assignment. The control participants were selected from the pool of students who had not yet enrolled in the adapted physical education course.

Instrument of Evaluation

The instrument used to measure attitude was Form 0 of the Attitudes Toward Disabled Persons (ATDP) scale developed by Yuker and his associates (Yuker, Block, & Campbell, 1960; Yuker, Block, & Young, 1970; Yuker et al., 1966). The ATDP scale has been used to assess attitudes of student and graduate physical therapists (Novick, 1972; Speakman, 1980; Speakman & Kung, 1982; Vargo, Vargo, & Semple, 1981), rehabilitation counseling students (Anthony & Carkhuff, 1970; Taft, 1980), and experienced rehabilitation workers (Bell, 1962; Elston, 1981; Folk, 1981).

The ATDP scale is a pencil-and-paper inventory designed to measure attitudes toward disabled people as a group, without regard to specific type of impairment. It was administered in group settings by the investigator and took approximately 10 minutes to complete. The 20 items are presented in a 6-point Likert format, with responses ranging from “I disagree very much” to “I agree very much,” scored on a 1-to-6 (negative to positive) basis. A sample item from the ATDP is “Disabled persons are usually more sensitive than other people.” An interpretation of the attitude portrayed by this item might be, “You need to be careful about what you say when around disabled persons because their feelings are easily hurt.”

The ATDP manual (Yuker et al., 1970) reports a large number of studies assessing the scale’s reliability, which generally lies in the +.70 to +.80 range. Bolton (1979) described these as “satisfactory coefficients for a relatively brief instrument” (p. 51).

Yuker et al. (1966, 1970) indicated various empirical attempts to establish the validity of the ATDP scale. They were supported in their claims for construct and content validity by Bolton (1979) and by Shaw and Wright (1967), who deemed the instrument adequate for research purposes. More recently, a factor analysis examination of the ATDP by Livneh (1982, 1985) suggested that the unidimensional ATDP scale does not have as much validity as multidimensional scaling procedures; however, the ATDP scale continues to be widely used
in attitude change studies and does provide a reference point for general affect in attitude research. Towner (1984) warns that the use of ATDP score to predict decision-making behaviors should be approached with caution, but that an appropriate use of the ATDP is to generate ideas about global attitudes.

Although a majority of recent disability attitude research takes a multidimensional approach, correlational studies have supported that the ATDP strongly relates to general affect scales on multidimensional instruments such as the Disability Factor Scales (Siller, 1984). Recently, Elston and Snow (1986) supported the reliability, validity, and practical usefulness of the ATDP. Thus the ATDP meets the need for a generic, unidimensional attitude scale, but leaves the issue of the multidimensionality of attitude unaddressed. The ATDP allows for the investigation of practical program effectiveness rather than more basic investigation into attitudinal theory.

Course of Study

During a 10-week quarter, physical education majors enrolled in the adapted physical education course were exposed to forty 50-minute classes that included lectures reviewing and illustrating textbook and other assigned readings, guest speakers (adapted physical educators and disabled college students), films or video-tapes of disabled persons participating in sports and recreational activities, and 10 hours of closely supervised clinical teaching on an individual basis with a moderately to severely impaired person. In addition, the opportunity and encouragement to volunteer with various disability serving agencies was accepted by less than one fourth of the students. Thus, formal instruction, supervised clinical exposure, audiovisual exposure, and information gained (and tested) from reading were assumed to be the active ingredients during the 10-week course. No instruction or discussion was given based on the ATDP questions.

Testing and Experimental Design

Pretests were administered on the first day of classes to both treatment \( (n=47) \) and control \( (n=44) \) groups selected for the pretest-posttest regimen. The condition of anonymity required using the student’s mother’s maiden name (to match with the posttest score) and sealing all test scores, both pre and post, until after the quarter was completed. This was done to minimize the perceived effect of the ATDP score on the course grade. All 179 students took the posttest on the last day of classes. This meant that posttest-only scores were obtained for 45 students taking adapted physical education (treatment group, posttest only) and 43 students not enrolled (control group, posttest only). The Solomon four-group design was created to control for pretest reactivity, to provide a check on equivalence before the intervention was introduced, and to assess the interaction of reactivity with the intervention. This four-group design (see Table 1) allows separation of effects of different types: the treatment variable (adapted physical education), the pretest (ATDP), and their combination or interaction (Dooley, 1984). To allow for examination of the interaction hypothesis, a factorial analysis of variance was used with .05 as the acceptable level of significance.
Table 1
Experimental Design

<table>
<thead>
<tr>
<th>Groups</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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</thead>
<tbody>
<tr>
<td>Conditions</td>
<td>Pretest/</td>
<td>Treatment/</td>
<td>Pretest/</td>
<td>Posttest/</td>
</tr>
<tr>
<td></td>
<td>treatment/</td>
<td>posttest</td>
<td>posttest/</td>
<td>control</td>
</tr>
<tr>
<td></td>
<td>posttest</td>
<td></td>
<td>control</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>47</td>
<td>45</td>
<td>44</td>
<td>43</td>
</tr>
</tbody>
</table>

Results

The data analyses involved one independent (causal) variable: the adapted physical education course. The main dependent variable measured was the student ATDP scores. Two groups of pretest scores (Groups I and III from Table 1) were submitted to a t test and found to be homogeneous with respect to variance. These research participants were judged to have homogeneous initial attitudes toward disabled persons on the strength of this evidence. The posttest means for all four groups are presented in Table 2.

Given the 6-point scale used to score the ATDP’s 20 items from 1 to 6 (negative to positive), an entirely neutral attitude would be reflected by a score of 70; the most negative attitude, by a score of 20; and the most positive attitude, by a score of 120. In light of this, it is clear that all groups would be characterized as positive; however, the treatment clearly yielded a more positive attitude change than did the control condition.

A three-way analysis of covariance was used to analyze the data by a computer program called PROC GLM in SAS-PC. The COANOVA was used to adjust posttest scores for pretest group differences. A summary of the analysis of covariance results appears in Table 3. The $F$ ratio for the treatment effect was significant at the .05 level, which implies that the adapted physical education class

Table 2
ATDP Posttest Means and Standard Deviations

<table>
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<tr>
<th></th>
<th>Pretest-posttest</th>
<th>Posttest only</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>91.34 (11.68)</td>
<td>II 84.91 (11.70)</td>
<td>88.20 (12.07)</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>85.73 (11.23)</td>
<td>IV 82.81 (10.38)</td>
<td>84.29 (10.85)</td>
</tr>
<tr>
<td>Total</td>
<td>88.63 (11.75)</td>
<td>83.89 (11.06)</td>
<td>86.30 (11.63)</td>
</tr>
</tbody>
</table>
Table 3
Analysis of Covariance Examining Attitude Toward Disabled Persons Using Various Design Factors With Age as a Covariate

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment/control (I and II/III and IV)</td>
<td>1</td>
<td>521.88</td>
<td>4.07</td>
<td>.045*</td>
</tr>
<tr>
<td>Pretest/posttest (I and II/III and IV)</td>
<td>1</td>
<td>1125.46</td>
<td>8.79</td>
<td>.004*</td>
</tr>
<tr>
<td>Treatment-control/pretest-posttest</td>
<td>1</td>
<td>120.70</td>
<td>.94</td>
<td>.333</td>
</tr>
<tr>
<td>Gender</td>
<td>1</td>
<td>8.60</td>
<td>.07</td>
<td>.800</td>
</tr>
<tr>
<td>Treatment-control/gender</td>
<td>1</td>
<td>5.82</td>
<td>.05</td>
<td>.832</td>
</tr>
<tr>
<td>Pretest-posttest/gender</td>
<td>1</td>
<td>361.14</td>
<td>2.82</td>
<td>.095</td>
</tr>
<tr>
<td>Treatment-control/pretest-posttest/gender</td>
<td>1</td>
<td>19.58</td>
<td>.15</td>
<td>.696</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>90.54</td>
<td>.71</td>
<td>.402</td>
</tr>
<tr>
<td>Error</td>
<td>170</td>
<td>128.10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at alpha of .05.

was successful in improving attitudes toward disabled persons. The interaction between exposure to the pretest and treatment was also significant, indicating that the pretest did sensitize the students to the course content. The gender effect was not found to be statistically significant by itself or in interaction with the other design factors. In addition, age was not statistically significant in this analysis.

Discussion

The results suggest that physical education student attitudes toward disabled persons can be changed in a positive direction as a result of exposure to one adapted physical education course. Students completing the adapted physical education course expressed more positive attitudes toward disabled persons, a result that has potential for yielding more positive behaviors based upon a learned positive mind-set (Anthony & Carkhuff, 1970; Yuker, 1986). Still, important questions remain. What is the relationship between student attitude and professional performance? What attitudinal levels result in negative behavior toward disabled persons?

One practice that this study indicated as worthwhile was the giving of a pretest affective attitude scale during the beginning of an instructional course for which affective outcomes are important. Contrary to other findings (Yerxa, 1971), this study found that pretesting the students had a statistically significant effect upon the posttest scores measuring attitudes toward disabled persons. Student anxiety may have been aroused by an impending assignment to a clinical teaching assignment. It appears that student anxieties that appear high at the beginning of the course sensitized their search for cue as to what was expected for the course. I recommend the attitude pretesting procedure in order to give stronger clues as to what are expected course outcomes.
Gender of the college student in this investigation did not show a statistically significant difference in change of attitude toward disabled persons. Both males and females showed more positive attitudes as a result of taking an adapted physical education course. Though Jansma and Schultz (1982) found gender to be a desired design factor, this study did not support differential treatment by gender.

This investigation leaves open the question as to the relative salience of various components of the adapted physical education course as they affect attitudes toward disabled persons. However, open comment on course evaluations by the students indicated the following rank order as having a positive effect: clinic teaching; disability simulation; lectures and class discussion; writing a case study, individual physical education plan, and progress note; meeting parents of disabled children; textbook reading; laws; and examination. Until extensive research distinguishing the relative salience of the components of attitude change is completed, it would be beneficial to continue the multimodal approach to improve attitudes toward disabled persons held by undergraduate physical education students. Clearly, observation of postbaccalaureate teaching behavior in relation to disabled students is an important next step for researchers to correlate with various levels of attitudes, both pre- and postbaccalaureate.

References


Taft, S. (1980). The effect of film on the disabled upon the behavior and attitudes of graduate students in counseling. *DAI, 41*, 948A (University Microfilms No. 80-21, 006).


