

THE EFFECT OF SOCIAL CONTACT ON COLLEGE STUDENTS ATTITUDES TOWARD SEVERELY HANDICAPPED STUDENTS AND THEIR EDUCATIONAL INTEGRATION

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ABSTRACT

Research on integration suggests that the major benefit of educational integrated programmes is the facilitation of intergroup contact between mentally handicapped and non-handicapped students. The present study was designed to investigate the effect of different amounts of social contact with severely handicapped students on attitudes and emotional reactions of college students towards such students and their integration into mainstream education. The study was carried out in a tertiary college which has a link programme with a local school for pupils with severe learning difficulties. The results indicated that those participants who had social contact with severely handicapped students has more favorable attitudes and emotional reactions toward such students than did those who had not social contact with this group. The study concludes that the educational integration programmes can positively modify attitudes and emotional reactions of college students towards severely handicapped students. However, in order to implement an effective link or integration programme and to foster attitudes more favorable towards severely handicapped students, the study recommends that we need to provide more opportunities for intergroup contact and social interaction between non-handicapped and handicapped students.

INTRODUCTION

Education for mentally handicapped students is in a state of transition and the last three decades have seen many remarkable changes in the field of special education. For instance, integration programmes and special educational provision beyond custodial care

for severely handicapped students are a relatively new venture and a world-wide movement (Bricker & Filler, 1985).

Integrating severely handicapped students into mainstream education, as a form of educational placement, has created a great deal of controversy.

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Indeed, some special educators have taken the position that such students should not be integrated into mainstream education (e.g., Burton & Hirshoren, 1979; Noel, 1984; Stetson, 1984; Ziegler & Hall, 1986; Ziegler & Hodapp, 1987). They cite several reasons for this view, such as the lack of special services, lack of appropriate physical situations, lack of special training, lack of acceptance, negative attitudes and so forth. However, most special educators have strongly supported the view that severely handicapped students should be placed and integrated into ordinary pre-schools, schools and colleges (e.g., Brown et al., 1979; Lento, Hading & York, 1984; Stainback & Stainback, 1985). The main reasons for their views appear to be:

(a) Integration provides opportunities for social contact and interaction between non-handicapped and handicapped students and vice versa;

(b) Integration provides opportunities for both handicapped and non-handicapped students to learn and practice social skills which are needed for functioning in a complex and heterogeneous society;

(c) Integration provides opportunity for mutual acceptance, tolerance and understanding to develop between non-handicapped and handicapped people.

Integration or mainstreaming, of course, is not only a matter of physical placement but also a matter of social interaction between non-handicapped and handicapped people. Consequently it raises questions of attitude formation and change. Many researchers in the USA (e.g., Brinker, 1985; Stainback & Stainback, 1982a; Stainback, Stainback & Derrick, 1984; Towfighy-Hooshyar & Zingle, 1984; Voeltz, 1980, 1982) have examined the attitudes of different groups of people towards severely handicapped persons as a consequence of social contact between handicapped and non-handicapped people. Some of them have reported that the major benefit of integrated programmes is the facilitation of social contact between severely handicapped and non-handicapped students, and found that contact is the main variable affecting attitudes. Voeltz (1980, 1982) studied elementary students' attitudes toward severely handicapped peers in two different settings: integrated and non-integrated schools. Her measuring instrument was an "Acceptance Scale" which consisted of 21 positive and negative items about handicapped children and individual differences. Of the groups she studied, she found that upper elementary-age students, girls and students in schools with most contact with severely handicapped peers expressed the most accepting attitudes. She reported that acceptance of severely handicapped students was also enhanced through a "Special Friends" programme. In another study, Towfighy-Hooshyar and Zingle (1984) investigated elementary students'

attitudes towards integrated multiply handicapped children using a "Peer Attitude Scale" which contained 29 items. They found that contact-desire was significantly influenced by sex, and was greater for girls than boys. They also found that the integrated programme had more influence on the attitudes of the younger age groups than on the older ones.

By contrast, other researchers have reported that integrated programmes *per se* do not facilitate social contact between severely handicapped and non-handicapped students and they have failed to find a relationship between contact and attitude change. Sandburg (1982) compared the attitudes of two groups of elementary students in-grades 4, 5, and 6 (in integrated and non-integrated schools) towards Trainable Mentally Retarded (TMR) students. Both groups of subjects were administered an attitude survey in which they reacted to a series of written vignettes and slides of non-handicapped and TMR students. No statistically significant group differences (integrated versus non-integrated) were found in the attitudes toward TMR students. Both groups of subjects rated TMR students in a neutral manner and non-handicapped children in a more positive way. Similar results were found by McHale and Simeonsson (1980). They interviewed 28 elementary students (second and third grades) concerning their attitude; towards autistic children before and after a week of structured integrated play sessions for thirty minutes per day. They reported no changes in the expressed attitudes over time as a function of such contact.

These studies, clearly, indicate that the effect of prior contact with mentally handicapped people on attitudes has been inconclusive and therefore, additional research in other cultures is needed.

In Britain, the publication of the Warlock Report (DES, 1978) and the implementation of the Education Act 1981 have had a tremendous impact on the education of students with special needs. Many schools for children with severe learning difficulties have begun to establish link programmes with ordinary playgroup, neighborhood schools and further education colleges. As a result, many severely handicapped students are increasingly being integrated and educated with their non-handicapped peers in mainstream education. Jowett, Hearty and Moses (1988) report that in 1985, of 268 special schools for children with a variety of special educational needs surveyed in England and Wales, 73% were involved in link programmes, 10% were planning to establish link programmes and 2% previously had such programmes. It is of interest that schools for pupils with severe learning difficulties had the highest proportion of link programmes, whereas schools for pupils with physical handicaps had the

smallest proportion. Hearty (1988) maintains that link programmes are a significant development in the provision for students with special needs. He explains that link programmes take several forms and can involve the movement of pupils or staff, or both, in either direction.

Nevertheless, link or integrated programmes have been met by a variety of reactions ranging from acceptance and support to rejection and opposition. To date, little is known about the social outcomes of such link programmes on non-handicapped students' attitudes (as well as, about non-handicapped students' attitudes toward such programmes) and, relatively speaking, this field in Britain has been neglected. According to Jones (1984) we can legislate for physical access and the provision of educational opportunities, as we have done, but we cannot legislate for acceptance and remove attitudinal barriers by law. He believes that the battle is far from won and that attitudinal barriers remain as a critical obstacle to acceptance of mentally handicapped individuals.

Among different groups, the attitudes of college students toward their severely handicapped peers and their integration into mainstream college are very important. Williams, Vogelsberg and Schultz (1985) believe that non-handicapped students typically have little knowledge and experience of contact with severely handicapped students. They maintain that non-handicapped people are usually unsure of how to communicate with such individuals and hold some negative attitudes toward them.

The above studies and the current views on integration raise, therefore, many questions. For example, what is the effect of having or not having social contact with severely handicapped students on people's attitudes toward such students and their integration? Do people who have experienced more social contact with severely handicapped students possess more favorable attitudes toward this group? The present study, therefore, was designed to extend our knowledge regarding the effect of social contact on college students' attitudes, and emotional reactions toward severely handicapped students and on their attitudes towards integrating such students into ordinary colleges. It was hoped that such knowledge would help social policy makers as well as educational psychologists to maximize the effectiveness of educational integration programmes. It was hypothesized that college students who had more experiences of social contact with severely handicapped students would possess more favorable attitudes and reactions towards such students and their integration than would those who had no experience-of social contact with this group.

METHOD

Setting and Subjects: Since the beginning of the academic year 1984-85 a link programme has been established between a Tertiary College and a local Special School for Children with Severe Learning Difficulties in order to extend the further education opportunities for severely handicapped students. Both the College and the School are ethnically and socio-economically heterogeneous and are located in the borough of Newcastle-under-Lyme, adjacent to the City of Stoke-on-Trent, England. In 1987-88 the link programme was conducted for two days per week and nine students from the School, whose age ranged from 16 to 19 years old, were selected and enrolled as part-time students at the College. These students had been identified by medical and educational professionals as persons with severe learning difficulties and their primary handicapping conditions consisted of severe mental handicaps, severe emotional disturbances, and so forth. The severely handicapped students were supervised by one full-time and two part-time special education teachers. These students at the College experienced a number of different non-academic activities, such as independent living skills, craft and design in the Home Care Unit, shopping, gardening, using the library, physical exercise and so forth. Such activities, using a common refectory and having recess together provided unstructured social contact between both groups of students from the School and the college. However, there were no integrated classes or courses for the severely handicapped students at the College.

The participants in the present study were 132 (60 males; 72 females) full-time college students from the Tertiary College who all, except 3, ranged in their age from 16 to 19 years old. A 54-item questionnaire was administered to the participants in group setting at the end of the academic year 1987-88. Approximately 20 minutes were required for completion of the questionnaire. From the information provided by the participants it was possible to group them into three sub-groups; High Contact (HC), Low Contact (LC) and No Contact (NC). This division was based on the frequency of the participants' social contact with the severely handicapped students at the College during the last six months.

Pilot Study: A pilot study was carried out in April 1988 in two stages. First, sixteen college students were selected randomly, with equal numbers of males and females, from different courses, such as GCE 'A' level, BTEC, CAVE, etc. They were asked to complete a pilot questionnaire. This questionnaire was developed and expanded based on the questionnaire used by

McConkey, McCormack and Naughton (1983a,b). After completing the questionnaire, they were interviewed individually for 10-15 minutes in order to ask them whether they had any difficulties in understanding the questions.

Second, five experts in the field of special education and psychology were identified and requested to complete and evaluate the pilot questionnaire in order to determine the potential content validity of the questions for measuring the attitudes of college students toward severely handicapped students and their integration. The findings from the above procedures suggested that most of the questions were clear and relevant except for a few, which were then changed.

The Measuring Instrument: The final questionnaire used in the present study had four parts and contained 64 information and attitude items. The instrument also included two scales, one called the *Emotional Reaction Scale* (ERS) which contained four items for measuring positive reactions and four items for measuring negative reactions. The items of this scale were followed by a three-point rating scale, "Yes", "No", and "Don't know" (see Table 3). The second scale was called the *Attitude Scale* (AS) and this had 28 items; 15 of these items were worded either positively or negatively in order to measure positive attitudes and 13 items were similarly worded to measure negative attitudes. The items on this scale were followed by a five-point Likert-type rating scale (Likert, 1932); Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly Disagree (SD) (see Table 4. Copies of the full questionnaire are available from the author on request).

Sampling and Procedure: A preliminary sample of 200 college students was systematically drawn from a list of 800 full-time college students in May 1988. For this purpose every fourth person was selected and the starting point for the selection was chosen at random. Accordingly, every college student of the target population had equal chance of being selected. These students were then requested to come to the college lecture theatre, on a specified date and time, in order to fill in the questionnaire. In the event, 137 college students attended. Before distributing the questionnaire, I took a few minutes to put the college students at their ease and I told them that this was a survey and not a test and that there were no right or wrong answers. They were also told that their answers should be based on their own personal and first reactions and that their answers would be used only for research purposes and would be treated confidentially. It should be noted that the participants in the pilot-study and five part-time

college students who had completed the questionnaires were excluded from the sample, so subsequently the resultant sample consisted of 132 college students.

SCORING AND STATISTICAL ANALYSES

The Emotional Reaction Scale (ERS): To compute the total score for each subject on the emotional reaction scale, I assigned a score of +1 for Yes and -1 for No answers for the four positive items (e.g., Find it a good experience? Find it enjoyable?). Similarly, I assigned a score of -1 for Yes and +1 for No answers for the four negative items (e.g., Feel scared? Find it tiresome?). Then the total score for each respondent was computed by subtracting the negative scores from the positive ones. Theoretically, the possible total scores ranged from -8, the most negative emotional reaction, to +8, the most positive emotional reaction.

The Attitude Scale (AS): To compute the total score for each subject on the attitude scale, I assigned a score of +2 for either strongly agree or strongly disagree and +1 for either agree or disagree for attitude items that showed *favorable attitudes*. Similarly, I assigned a score of -2 for either strongly agree or strongly disagree, and -1 for either agree or disagree for attitude items that revealed *unfavorable attitudes*. After that, the total score for each subject was computed by subtracting the negative scores from the positive ones. In this manner, the possible total scores ranged from -56, the most negative attitude, to +56, the most positive attitude. It should be reported that on both scales a score of zero was given to "Don't Know", "Undecided" and "no answers" and considered to be neutral. In order to analyze the responses the *Statistical Package for the Social Sciences* (SPSS/PC+) was used. In this study the subjects' total scores on both scales were the dependent measures and the other variables (e.g., sex, age, degree of contact, etc) were the independent ones.

RESULTS

The final sample of 132 college students consisted of 60 (45%) males and 72 (55%) females. All of them were full-time students, unmarried, and 79% of them were first year and 21% second year students. Half of the sample were attending GCE 'A' level and half attending other courses, such as BTEC, GCSE, CAVE, etc. The majority of the sample (97%) did not object to having the severely handicapped students at their college, while 75% did not mind having such students in their classes. The results of a one-way ANOVA and t-test for the mean scores on the attitude scale and on the emotional scale in relation to the participants' age, type of course and year of study indicated no significant

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differences among different groups.

Sex Differences:

Sex differences: T-test results showed that males and females did differ significantly in their expressed attitudes as well as their emotional reactions. Table 1 shows that females obtained significantly higher mean scores than males on both scales ($t_{AS} = 2.80$, $df = 130$ $p < 0.006$; $t_{ERS} = 2.03$, $df = 130$, $p < 0.04$).

Table 1 Means & SDs on the Attitude Scale (AS) and the Emotional Reaction Scale (ERS) By Sex, knowing the Link Programme and Having Contact' with the Severely Handicapped Student (N = 132)

	n	%	AS		ERS	
			Mean	SD	Mean	SD
SEX						
Female	72	55	20.93	10.19	3.64	3.02
Male	60	45	15.75	11.01	2.50	3.42
KNOWING THE LINK PROGRAMME						
Knowing	25	19	23.56	12.69	4.96	2.99
Not Knowing	107	81	17.41	10.08	2.69	3.16
HAVING CONTACT						
Had	36	27	24.42	9.51	3.64	3.02
Not Had	96	73	16.38	10.54	2.50	3.42

Knowing or Not Knowing the Link Programme:

As table 1 indicates only one in five (9%) of the sample knew about the link programme between the School and the College. This group obtained significantly higher mean scores on both scales than that group who did not know anything about the link programme (81%) ($t_{AS} = 2.61$, $df = 130$, $p < 0.01$; $t_{ERS} = 3.26$, $df = 130$, $p < 0.001$).

Had or Not Had Contact with the Severely Handicapped Students:

In this question, the subjects were asked to indicate generally their-social contact,-if any with the students. As table 1 shows less than one third (27) of the sample reported having social contact with the severely handicapped students. This group obtained significantly higher mean scores on both scales than that group who reported not had contact with these students ($t_{AS} = 4.00$, $df = 130$, $p < 0.0001$; $t_{ERS} = 3.42$, $df = 130$, $p < 0.0005$).

The Types of Contact with the Severely Handicapped Students:

The most frequent types of contact with the severely handicapped students which the college students reported were "Seen them in the

refectory" and "Had conversation with them", respectively 20% and 19%. The other two types of contact were "Played games with them" (2%) and "Did shopping with them" (1%). The results of the one-way ANOVA for four types of contact with the severely handicapped students and the mean scores on both scales showed no significant differences among those subjects who had reported various types of contact [$F_{AS} (3,51) = 0.31$, N.S.; $F_{ERS} (3,51) = 0.13$, N.S.].

The Frequency of Contact with the Severely Handicapped Students:

In this question, the subjects were asked to indicate the frequency of their social contact with the students during the last six months in terms of Often, Sometimes and Not at all. Then, in order to address the research hypothesis from the information provided by the subjects, it was possible to group the sample down into three sub-groups: High Contact (HC), Low Contact (LC) and No Contact (NC).

Table 2 Means & SDs on the Attitude Scale (AS) and the Emotional Reaction Scale (ERS) By the Frequency of Contact with the Severely Handicapped Students (N=131)*

	n	%	AS		ERS	
			Mean	SD	Mean	SD
Often (HC)	5	4	23.20	10.43	6.20	2.05
Sometimes (LC)	28	21	24.43	9.67	4.57	2.85
Not at all (NC)	98	75	16.61	10.63	2.56	3.22
Total	131	100	18.53	10.87	3.13	3.26

* One subject did not answer this question. In this study those subjects who did not answer some questions were excluded from the pertinent calculations.

As can be seen in Table 2, 75% of the college students (NC group) indicated that they had no social contact with the severely handicapped students during the last six months and their mean scores on both scales were lower than those college students who reported that had a high or a low degree of social contact with these students (HC & LC groups). The results of the one-way ANOVA on the attitude scale clearly indicated that the mean scores of the three groups differed significantly [$F_{AS} (2,128) = 6.63$, $p < 0.0011$]. Following such a significant F-ratio, a Scheffe post-hoc analysis was performed and the results showed that only the differences between the mean scores of LC group and NC group were statistically significant ($p < 0.05$). By contrast there were no significant differences between the mean scores of HC group versus NC group as well as HC group versus LC group (this may be due to the small size of the HC group, $n=5$).

Also, the mean scores of three groups were compared on the *emotional reaction scale*. The results showed that the three mean scores differed significantly [$F_{ERS} (2,128) = 7.06, p < 0.001$]. A Scheffe post-hoc analysis showed that both groups of High Contact and Low Contact reacted more positively to meeting a new student with severe handicaps than the No Contact group ($p < 0.05$).

The Emotional Reaction Scale: The sample showed positive emotional reactions to meeting a severely handicapped student whom they had not met before in their classes (mean = 3.12; SD = 3.25). More specifically, 79% of them achieved positive scores ranging from +1 to +8 and 21% negative scores ranging from zero to -8.

Table 3 Means & Percentages of the College Students' Responses to the Items on the Emotional Reaction Scale (N=132)

	SUPPOSE TOMORROW A STUDENT WITH A SEVERE MENTAL HANDICAP OF YOUR OWN AGE, THAT YOU HAD NEVER MET BEFORE, CAME AND JOINED YOUR CLASS, WOULD YOU ...		
	YES %	NO %	DON'T KNOW %
1. Know what to say?	39	31	30
2. Know how to communicate?	43	30	27
3. Feel embarrassed?	11	71	18
4. Feel scared?	11	81	8
5. Find it a good experience?	63	8	29
6. Find it enjoyable?	25	10	65
7. Find it tiresome?	10	56	34
8. Lose your concentration?	13	61	26

Table 3 shows that the highest percentages of the college students that reflect *positive reactions* towards meeting a new student with a severe mental handicap were expressed to the following items:

- Item 4. 'Feel, scared?' 81% (NO)
 Item 5. 'Find it a good experience?' 63% (YES)

On the other hand, the highest percentages that reflect negative reactions were reported to the following items:

- Item 1. 'Know what to say?' 31% (NO)
 Item 2. 'Know how to communicate?' 30% (YES)
 Almost 65% of the subjects reported that they did not know whether they would find it enjoyable or not (item 6).

The Attitude Scale: The sample expressed positive attitudes toward severely handicapped students and their integration into mainstream college (mean = 18.58; SD = 10.84). More precisely, 95% of the

subjects obtained positive scores ranging from +1 to +42, whereas only 5% received negative scores ranging from zero to -11.

Table 4 Means & Percentages of the College Students' Responses to the Items on the Attitude Scale (N=132)

IN YOUR VIEW, STUDENTS WHO ARE SEVERELY MENTALLY HANDICAPPED (SMH)	SA	A	U	D	SD	NA*
	%	%	%	%	%	%
1. are honest and kind.	11	38	44	5	0	2
2. are clumsy and weak.	0	11	28	48	11	2
3. should be allowed to continue their education only at special schools.	2	10	16	45	26	1
4. should be allowed to continue their education at ordinary colleges.	26	52	15	6	0	1
5. should be allowed to use the refectory.	50	47	1	1	0	1
6. should be allowed to use the library.	52	44	1	2	0	1
7. should be allowed to mix only with their own group at the college.	6	10	5	36	39	2
8. have just the same problems as we have.	14	41	18	21	4	2
9. should be allowed to have a normal and regular life.	48	45	2	1	2	2
10. should not be allowed to have sexual relationships as non-handicapped students have.	4	11	24	27	31	3
11. should be allowed to mix with us in the college.	36	57	3	1	1	2
12. should be allowed to become members of the College Students' Union.	40	53	3	2	0	2
13. have special problems apart from the problems that we have.	22	49	20	4	2	3
14. prefer to talk and play with other handicapped students rather than with us.	5	10	44	32	7	2
15. should not be allowed to vote in the College Students' Union elections.	4	7	14	29	43	3

* No Answer.

Table 4 (Continued)

IN YOUR VIEW, IF SEVERELY MENTALLY HANDICAPPED (SMH) AND NON-HANDICAPPED (NH) STUDENTS WERE TO BE INTEGRATED AND TAUGHT TOGETHER IN REGULAR CLASSES AT THE COLLEGE ...

	SA	A	U	D	SA	NA*
	%	%	%	%	%	%
16. NH students would feel uncomfortable around SMH students in the classroom.	5	33	36	18	4	3
17. NH students would find it much easier to communicate with SMH people after leaving college.	18	44	25	8	2	2
18. SMH students would need attention more than NH students.	15	61	15	5	1	2
19. it would cause disturbances to routine educational activities.	7	21	41	22	6	3
20. it would offer more opportunities for social interaction between SMH and NH students.	29	56	11	1	0	2
21. it would give SHH students a better chance to prepare themselves for social life.	29	58	7	2	1	2
22. it would be harmful for the education of NH students.	5	5	22	47	18	2
23. it would have negative effects on the emotional development of SMH students.	1	4	39	43	11	2
24. SMH students would feel comfortable around NH students.	4	30	48	12	1	4
25. a SMH student would take more than his/her share of the teacher's time	6	24	46	18	3	2
26. NH students would lose their concentration easily.	2	18	30	42	5	2
27. it would be beneficial for the education of SMH students.	18	56	20	2	1	2
28. for SMH students it would be more important to learn social skills than academic skills.	10	27	38	17	5	3

*No Answer

Table 4 shows that *the strongest agreement* and

agreement that reflects a positive attitude by the college students was expressed to the following items:

- Item 5. Severely Handicapped Students should be allowed to use the refectory (97%);
- Item 6. Severely Handicapped Students should be allowed to use the library (96%);
- Item 9. Severely Handicapped Students should be allowed to have a normal and regular life (93);
- Item 11. Severely Handicapped Students should be allowed to mix with college students (93%);
- Item 12. Severely Handicapped Students should be allowed to become members of the College Students' Union (93%)

The strongest disagreement and disagreement that again reflects a *positive attitude* was expressed to the following items:

- Item 7. Severely Handicapped Students should be allowed to mix only with their own group at the college (77%)
- Item 15. Severely Handicapped Students should not be allowed to vote in the College Students' Union elections (72%);
- Item 3. Severely Handicapped Students should be allowed to continue their education only at special schools (71%).

The college students showed favorable attitudes towards integration and 85% of them agreed that integration would offer more opportunities for social interaction between severely handicapped and non-handicapped students (item 20). Also, as a result of integration for non-handicapped student 62% of the college students agreed that they would communicate with severely handicapped people much more easily after leaving the college (item 17). In addition, 87% of the respondents agreed that integration would give severely handicapped students a better chance to prepare themselves for social life (item 21) and 74% of them agreed the integration would be beneficial for the education of severely handicapped students (item 27).

On the other hand, *the strongest agreement and agreement* that reflects a *negative attitude* towards severely handicapped students and their integration was expressed to the following items:

- Item 18. Severely Handicapped Students would need attention more than non-handicapped students (76%);
- Item 16. Non-handicapped Students would feel uncomfortable around Severely Handicapped Students in the integrated classes (38%);
- Item 19. The integrated classes would cause disturbances to routine educational activities (28%);

Item 26. Non-handicapped Students would lose their concentration easily in the integrated classes (20%) .

Almost half (48%) of the college students were uncertain about the outcomes of integration in terms of whether severely handicapped students would feel comfortable around non handicapped students (item 24). 46% of the subjects were also uncertain about the consequences of integration in terms of whether a severely handicapped student would take more than his/her hare of the teacher's time (item 25).

DISCUSSION

The results generally support the main hypothesis that those college students who have experienced social contact with severely handicapped students, will express more positive attitudes and emotional reactions towards such students than those who have not experienced such contact. More specifically, in the current study the college students who were females, who knew about the link programme between the School and the College and who had experienced social contact with the severely handicapped students were most likely to express favorable attitudes and emotional reactions towards severely handicapped peers and their educational integration. These findings can be interpreted that the integration or link programme was effective in changing and promoting college students' attitudes and reactions towards severely handicapped peers and integrating them into mainstream college. According to Stainback and Stainback (1982b) and Voeltz (1980, 1982) such an interpretation would suggest practical implications for educational intervention programmes designed to promote educational integration: non-handicapped students may need to be instructed how to interact with and tolerate severely handicapped peers.

The present findings support the studies reported by Voeltz (1980, 1982) and Towfighy-Hooshyar and Zingle (1984).

Furthermore, in the present study females possessed significantly more positive attitudes and emotional reactions towards severely mentally handicapped students than males, and this is consistent-with the findings of Towfighy-Hooshyar and Zingle (1984) and Voeltz (1980, 1982).

In the present study the majority (81%) of the college students did not know anything about the link programme between the School and the College and 75% of them did not have any social contact with the handicapped students. Also, one-third of the college students did not-know what to say or how to communicate when meeting severely handicapped students. The likely reason for such findings is that

since the beginning of the link programme there were no orientation and preparation programmes for the college students. In addition, there were no structured contacts and integrated classes. Therefore, in most cases the college students did not know the handicapped students, especially by their names, and this problem made it frequently difficult for the college students to initiate talking with their severely handicapped peers. These findings, therefore, emphasize the importance of providing non-handicapped students with information and familiarizing them about their severely handicapped peers prior to the implementation of integrated programmes. Also, it raises an interesting question. Should college teachers use educational intervention programmes to enhance the quality and quantity of contact between handicapped and non-handicapped students, such as reinforcement methods and peer tutoring? Or should they allow natural and normal relationships occur between them?

Finally, we should note that the results of this investigation need to be interpreted cautiously, because we cannot rule out the possibility that the participants who already had more favorable attitudes to mentally handicapped students would be more interested in seeking out more social contact with them. The problem of determining cause and effect relationships, therefore, can only be adequately studied by using controlled pre and post attitude assessment studies. Moreover, the sample in the present study was perhaps not fully representative of the population.

This study, however, confirms the relationship between having social contact with mentally handicapped and holding positive attitudes towards them. It shows that link programmes can contribute to the social integration of severely handicapped students into ordinary colleges. The study also implies that for achieving an effective and full integrated programme we need to remove any visible, as well as invisible, barriers; this is partly possible through instruction both groups of handicapped and non-handicapped students and systematic efforts to increase social interaction between them. Hence, we need to provide a supportive environment for those non-handicapped people who enjoy having social interaction with their severely handicapped peers and who respect their rights to be in mainstream education without any restriction. Also, we need to provide a supportive environment for the personal and social development of both groups of handicapped and non-handicapped individuals. Otherwise, link or integration programmes may lead any to physical placement of mentally handicapped students in mainstream education - which is essential but not sufficient.

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