Teachers’ Academic Disciplines and Attitudes towards Inclusive Education

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Abstract
This paper aimed at finding out if teachers’ attitudes towards inclusive education are influenced by their academic disciplines. Teachers are integral to the implementation of inclusive education and their attitudes constitute one of the biggest barriers to inclusive education. Research has identified factors that influence negative attitudes such as training, experience, resources, administrative support, gender, type and severity of the disability, but the teacher’s academic discipline as a factor has received very little attention in research. Academic disciplines have different structures so there is a probability that teaching children with different disabilities may be easier with one academic discipline than another. The study was a descriptive survey that made use of a 33-item closed ended questionnaire bearing the cognitive, affective and psychomotor components of attitudes towards inclusive education. Participants, who were public secondary school teachers from 4 out of 10 regions in Cameroon, were expected to rate the items on a five-point scale, ranging from strongly agree to strongly disagree. The validity index stood at 0.86 while the reliability estimate was 0.83. Data were grouped into three categories – science, arts and social sciences and analyzed descriptively and inferentially, using means, t-test and ANOVA. Findings reveal that teachers significantly differ in their attitudes towards inclusive education according to academic disciplines even though they are generally positive. Implications and recommendations are discussed.

Keywords: Teacher attitudes, perceptions, academic discipline, Teaching Subject

Introduction
Teachers are perceived to be integral to the implementation of inclusive education (Haskell, 2000). Research reveals the view that teachers are the key to the success of inclusionary programs (Cant, 1994). Teachers’ beliefs, practices and attitudes are important for understanding and improving educational processes. They are closely linked to teachers’ strategies for coping with challenges in their daily professional life and general well-being. Their attitudes also shape students’ learning environment and influence students’ motivation and achievement (OECD, 2009). Therefore, it is important to examine the attitudes of mainstream educators towards the inclusion of students with disabilities into regular settings as their perceptions may influence their behavior toward and acceptance of such students (Hammond & Ingalls, 2003). Many factors have accounted for teachers’ attitudes towards
inclusive education. These include teachers’ training, qualification, experience, type and severity of the disability, gender, administrative support, instructional material (Endeley, 2014) and more. However, little research has been carried out on whether or not teachers’ academic discipline can influence their attitudes towards inclusive education. Such knowledge is useful in eliminating some of the barriers to inclusive education.

Review of Literature

**Science teachers’ attitudes towards inclusive education**

Science has been considered one of the most valuable subjects taught to students with disabilities (Patton & Andre, 1989) but students from various disability groups have been found to suffer from low expectations from teachers, parents and societal members, thereby creating a poor self concept in them regarding science education. A common attitude among educators, parents, and peers that 'they cannot study science' is the foremost barrier to inclusion in science education. Cawley (1994) states that science teachers generally have little training or experience with disabilities and, in general, special educators have little or no exposure to science. One might expect that students with disabilities receive science instruction from teachers in special education but this clearly is not the case. Special educators perceive their responsibility as accommodating students who are having difficulty learning and who are generally at least two grade levels behind their peers in basic skills. They seldom teach science, and the science they teach is often textbook based. Specialists in adaptations look only at physical accessibility and mobility, not the special needs of the disabled student, which may require adaptations for hands-on science investigations.

In a study carried out by Norman, Caseau and Stefanich, (1995) one of the high school teachers who voiced concerns about safety said, “Students who lack motor skills cannot manipulate lab equipment properly, and pose a hazard for themselves in the case of spills. One-third (33.3%) felt that students with severe disabilities should not be in science classes with regular students. Almost half (46.2%) of the respondents were concerned that the attention given to students with disabilities detracts from teaching the rest of the students. Safety issues were a concern as well with almost half (47.5%) of the respondents expressing that students with disabilities are at risk in terms of safety in lab settings, and one-third (33.6%) responding that students with disabilities increase the risk to others in lab settings. Almost all (98.3%) of the respondents agreed that special needs students gain self-confidence through science activities and that outdoor field trips are excellent opportunities to enhance the experiences of students with disabilities. Fourteen percent (14.0%) of the responding teachers expressed that it is impossible to expect a student with a physical disability to be an active participant in all science laboratory exercises. They also found out that when comparing the data from teachers at the middle and high school levels to data from teachers at the elementary school level, it is clear that middle and high school teachers feel much more limited in their preparedness to accomplish tasks relating to accommodating instruction to students with disabilities. These findings are quite alarming. At the secondary level, it is traditional to focus teacher preparation more on content than on instructional delivery. Perhaps this focus on what to teach rather than how has contributed to those feelings of inadequacy in how to teach students with disabilities.

**Arts teachers’ attitudes towards inclusive education**

Teachers, no matter their subject area do vary in their attitudes towards inclusive education. In a study by Kuester (2000) where he compared teachers attitudes in two separate studies
(1989 and 1999) over a period of 10 years, results of the 1989 study suggested that physical education and regular teachers had significantly less positive attitudes than special educators towards all disabling conditions. Findings from the 1999 study had similar results. However, because the participants were mixed (from different disciplines) results of this study cannot be generalized only to physical education teachers. In another study by Rizzo and Kirkendall (1995) on what affects attitudes of future physical educators in teaching students with mild disabilities, results provided evidence that there is need to promote positive attitudes towards teaching individuals with disabilities.

Contrary findings were got in Zanandrea and Rizzo (1998) survey which examined undergraduate physical educators’ major attitudes towards teaching students with disabilities in Brazil. Findings revealed that teachers’ attitudes were positive. Similar findings were reported in Obrusnikova’s (2008) study on physical education teachers’ beliefs about teaching children with disabilities. The second purpose of his study was to structure physical education teachers’ attitudes toward teaching individuals with disabilities. Participants consisted of 168 physical education teachers. Results indicated that teachers’ beliefs were generally positive but varied with type of disability. Reeves (2006) reported findings on secondary teacher attitudes towards including English – language learners in mainstream classrooms. A total of 279 subject area high school teachers were involved. They indicated a neutral to slightly positive attitude towards including English language learners.

A similar study by Walker, Shafer and Liams (2004) aimed at assessing prevailing ideological beliefs and attitudes mainstream teachers have regarding English Language Learners (ELLs) and the educational programmes that serve them. Data were collected from 422 K-12 teachers and interview data from six ELL teachers. The research explored three topics: the extent and nature of mainstream teacher attitude towards ELLs, the factors that contribute to teacher attitude and development and how teacher attitudes towards ELLs vary by community demographics. Results revealed that teachers’ attitudes were negative. In a research by Byrnes, Kiger and Manning (1997, 1996) 169 teachers in three states were surveyed. They reported that the most positive attitudes towards ELLs existed among teachers who had participated in carefully organized formal ELL training, had completed a graduate degree and came from regions where strong and supportive messages were passed down from the state legislature and educational mandates.

In a similar study, Youngs and Youngs (2001) surveyed 143 teachers regarding their attitudes towards ELLs. Their findings suggested that positive attitudes are more likely to be found among teachers who have taken foreign language or multicultural education courses, received some training in ELL education, lived or taught outside of the US and worked with a more diverse ELL population (Walker, Shafer and Liams, 2004). Lambe and Bones (2006) undertook a study to examine the attitudes to inclusion of those about to embark on Initial Teacher Education (ITE) in Ireland. The population consisted of the 2004 – 05 cohort of student teachers enrolled at the University of Ulser. They were studying eight subject areas including Art and Design, English, Geography, History, Home Economics, Music, Technology and Design and Physical Education. Findings revealed that many teachers appear to support the idea of inclusive classrooms and find the beliefs and aims behind the movement towards inclusion laudable. However, while supporting the idea of inclusion and inclusive practices, the student group still appeared to be more comfortable with the traditional systems they knew. While a large majority claimed to favour all teachers teaching pupils with SEN, a substantial majority would themselves choose to teach in an academically
selective school if given the choice. The contradiction here is further compounded by the fact that well under one-fifth actually favoured the removal of the selection procedure at age 11 as a means of ensuring a more inclusive system. Teachers’ attitudes towards inclusion vary widely in the different arts subjects.

**Statement of the problem**
Regulations in Cameroon permit students with special needs/disabilities to attend regular schools. For inclusive education to be successfully implemented there needs to be a survey of teacher attitudes because it could be a barrier to inclusive education. A lot has been said about factors that affect teacher attitudes towards inclusive education but very little research has been carried out on teachers’ subject area as a factor. Teacher attitudes may differ according to academic disciplines since some disciplines require more complex motor skills, which students with certain types of disability may not be able to take part in. Therefore, it is necessary to carry out a survey of teacher attitudes according to their disciplines to find out if they differ in their attitude towards inclusive education according to their disciplines. This may contribute in breaking down a barrier towards inclusive education by providing a focus for professional development.

**Purpose of the Study**
The study aims at finding out if public secondary school teachers in Cameroon differ in their attitudes towards inclusive education as a result of their academic disciplines.

**Research Question**
Do public secondary school teachers differ in their attitudes towards inclusive education as a result of their academic disciplines?

**Hypothesis**
There is no significant relationship between the academic disciplines of public school teachers and their attitudes towards inclusive education.

**Methodology**
The study was a survey of 500 regular secondary school teachers selected from 15 schools in four regions of Cameroon, namely: The littoral, Southwest, East and Far North. It made use of a questionnaire consisting of 33 likert scale items relating to the cognitive, affective and behavioural components of attitudes towards inclusive education. Participants were expected to rate the items on a five-point scale, ranging from strongly agree to strongly disagree. The validity index stood at 0.86 while the reliability estimate was 0.83. 430 participants completed and returned the questionnaire. The questionnaires were coded according to the various categories of academic disciplines and data were analysed descriptively and inferentially, using means, t-test and ANOVA.
Findings and Discussion

Table 1: Teachers subject area

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts (English, French, Literature, Sports)</td>
<td>190</td>
<td>42.9</td>
</tr>
<tr>
<td>Sciences (Physics, Chemistry, Biology, Mathematics)</td>
<td>151</td>
<td>34.1</td>
</tr>
<tr>
<td>Social Sciences (Geography, Economics, History, Religion)</td>
<td>98</td>
<td>22.1</td>
</tr>
<tr>
<td>Total</td>
<td>439</td>
<td>99.1</td>
</tr>
<tr>
<td>Missing System</td>
<td>4</td>
<td>.9</td>
</tr>
<tr>
<td>Total</td>
<td>443</td>
<td>100.0</td>
</tr>
</tbody>
</table>

As seen on Table 1 above three teaching subject areas were identified. A percentage of 42.9 was made up of Arts teachers; 34.1 of science teachers and 22.1 of social science teachers. Therefore, Arts teachers constituted the bulk of the participants, while teachers of social sciences constituted the least participants.

Table 2: Teachers’ academic disciplines and attitudes

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts (English, French, Literature and Sports)</td>
<td>122</td>
<td>3.2906</td>
<td>0.44075</td>
<td>0.03990</td>
</tr>
<tr>
<td>Sciences (Physics, Chemistry, Biology, Maths)</td>
<td>99</td>
<td>3.0137</td>
<td>0.42895</td>
<td>0.04311</td>
</tr>
<tr>
<td>Social Sciences (Geo, Econ, Citenzenship, Rel Comm)</td>
<td>56</td>
<td>3.4172</td>
<td>0.44484</td>
<td>0.05944</td>
</tr>
<tr>
<td>Total</td>
<td>277</td>
<td>3.2405</td>
<td>0.44193</td>
<td>0.02655</td>
</tr>
</tbody>
</table>

Table 3: ANOVA on teaching subject area and attitudes

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1.483</td>
<td>2</td>
<td>0.741</td>
<td>3.875</td>
<td>0.022</td>
</tr>
<tr>
<td>Within Groups</td>
<td>52.421</td>
<td>274</td>
<td>0.191</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>53.904</td>
<td>276</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For each category the number of participants (n) was indicated. The means of each category was found and ANOVA was carried out to determine the degree to which these three groups differ from each other. Results .022 (below the 0.05 level of significance) indicated that there
was a significant relationship between teachers’ teaching subject area and their attitudes towards inclusive education, with the Social Science teachers being the most positive (3.4172), followed by the Arts teachers (3.2906) and Science teachers being the least positive (3.0137) (see table 2). In other words, public secondary school teachers differ significantly in attitudes with respect to their teaching subject. Therefore, the research hypothesis was accepted and the null hypothesis rejected. The relationship between teaching subject area and teacher attitude towards inclusion has not yet received much attention in research. However, results of prior research on this vary widely. In some cases Arts teachers, even physical educators are positive towards inclusion and in other cases they are negative. The same situation exists with science teachers, even though there are more studies that reveal that science teachers are more negative than positive towards inclusion (Ellins and Porter, 2005).

Table 2 shows that even though Cameroon public school teachers (Arts, Science and social science) are generally positive, science teachers are the least positive towards inclusive education. This may be explained by the fact that with certain kinds of impairment, the teaching of science may be very difficult (Norman, Caseau and Stefanich, 1995). Visual and severe physical impairments for example make learning in the laboratory and the manipulation of objects difficult. In addition to that, resources for the teaching of the sciences for children without disabilities are not so adequate and that makes the availability of science teaching resources for children with disabilities far-fetched.

Arts teachers are another category with less positive attitudes (Rizzo and Kirkendall, 1995). This can also be explained by the fact that the Arts entail motor skills (either in physical education, drawing, music, language or literature). Therefore, children with certain kinds of disability may find learning difficult in general education classrooms. The above explanations may account for the differences in attitudes of teachers in different subject areas and the reason why the research hypothesis obtains.

Conclusion
Public secondary school teachers in Cameroon are generally positive towards the implementation of inclusive education programs. This means that what is usually considered one of the greatest barriers to inclusive education (teacher attitudes) does not exist in Cameroon. Therefore with a little more effort by the government inclusive education would be successful. Such efforts include support to teachers and the provision of material resources. Science teachers need more encouragement in implementing inclusive education. Such encouragement may come in the form of support in terms of training, the availability of resources for students with disabilities, better working conditions and administrative support. Generally, knowledge about children with special education needs should be passed on to teachers during pre – and in-service training. This is important in improving teachers’ attitudes towards inclusive education (Alkhatee, 2002; Beh – Pajooh, 1992). Collegial coaching and staff development programmes through seminars and workshops are vital. In addition, cooperative and collaborative skills including problem-solving, communication skills, differentiated instruction, assessment procedures, curriculum adjustment, parent cooperation and community support are important in enhancing positive attitudes of teachers. Education authorities can make use of the Teacher Education Resource Pack produced by UNESCO, (Munir, 2000) comprising of ideas and materials that can be used by them to support teachers in mainstream schools to respond to student diversity.
Teachers should be encouraged to carry out action research to individually identify their personal knowledge gaps on inclusive education. This will help them know strategies that have worked elsewhere thus reducing some anxieties. Also, teachers should make adaptations where necessary, especially in the sciences. For example, students with visual or motor difficulties may need to use larger instruments or materials. With such support inclusive education will be largely successful in Cameroon.

References
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APPENDIX
1) I am aware of government regulations in Cameroon relating to inclusive education
2) Inclusive education is a good educational practice.
3) Government regulations relating to inclusive education in Cameroon are good.
4) Good planning at the national level is important in the successful implementation of inclusive education.
5) The design of the school environment plays an important role in the successful implementation of inclusive education.
6) General education teachers do not have adequate training on inclusive education.
7) Not all forms of disabilities can be handled in the regular school.
10) It may enable more students with disabilities to have access to education thus giving them a better future.
11) It may improve the performance of students with disabilities through co-operative learning.
12) It may improve non-disabled students’ socialization skills.
13) It may enrich teachers’ experience.
14) Inclusive education (combining general and special education) is economical.

I dislike inclusive education because:
15) It may hamper non-disabled students’ performance
16) It may reduce teachers’ output
17) Disabled students may not be given enough attention
18) The special attention given disabled students may increase the stigma on them.

I will like to teach students with the following kinds of disability:
19) Students who use sign language
20) Students who use Braille
21) Students who cannot move without help
22) Students who have speech disorder
23) Students whose behaviour is difficult to control
24) Students who are aggressive
25) Students who are shy and withdrawn
26) Students who need individualized programmes
27) Students who have difficulty expressing themselves in the language of instruction
28) Students who are frequently absent

I will like teach an inclusive class only under the following conditions:
29) If I have support of special education personnel.
30) If I receive some training on inclusion
31) If I have the necessary instructional material
32) If there is collaboration with parents of children with special needs
33) If the class has a small to average (30-60 students) class size