Evaluating the Learning Setting and Identifying the Study Needs for Students With Visual Impairment at the University of Khartoum in Sudan

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The data in this research was obtained by interviewing 20 visually impaired students at the University of Khartoum, Sudan. The interview questions were designed to acquire information relating to the type of support the university staff is offering in order to help those students handle their study and overcome the problems they encounter during the course of their studies. The participants’ situation before joining the university was also investigated to verify the impact of support they may have previously received for their study during the university period. The study concluded that the level of support offered to those students was notably lower than what they were expecting to receive before they joined the university. It also became apparent that participants were very unsatisfied with the academic environment.

Key Words: higher education, visual impairment, needs, support provision, Sudan

Introduction

The Republic of Sudan is the third largest country in Africa in terms of area. Located in the northeastern part of the continent, it has a total area of 1,886,068 square kilometers and has a population of about 37,289,000 inhabitants according to the 2014 census. The educational system in Sudan is composed of basic education (elementary and compulsory education) for eight years followed by three years of high school. Those who continue their education may spend two to six years in college depending on their field of study and the type of degree they are aiming for.

According to the Sudan Ministry of Health and the National Population Census reports, disability rates went up from 1.6% in 1993 (approximately 300,000 persons) to 5% in 2008 (about 1,865,000 persons) (Sudan Federal Ministry of Health, 2010). The most common form of disability in Sudan is blindness (31%), while mental disability comes next (24%). The main challenges facing people with disabilities are access to health treatments, lack of support, rehabilitation, access to special education, and discrimination in employment opportunities. The number of specialized institutions that offer such services for this category of people in Sudan is worryingly minimal. Only 4 institutions provide education and rehabilitation for people with visual impairment. Five institutions offer services for those suffering from deafness and likewise for people with mental disability. There are no institutions offering such services for people with multiple disabilities.

The only national elementary school providing education for the visually impaired students is Elnoor Institute, founded in 1961 and located in the capital city of Khartoum. The others are provincial schools; however, the number of children with visual impairment who get admitted into these schools every year is less than 40. The others who don’t find a seat in these schools may attend regular schools with sighted students where they will encounter the problem of lacking special academic facilitations for the blind. Those who finish their elementary school and
would like to go to high school have the opportunity to compete with sighted students and join regular schools.

The students who graduate from the regular schools that are not technically prepared to accommodate them never have the opportunity to learn the Braille system, and thus, they reach high school with little or no braille skills. They often depend, in their studies, on cassette recorders or receive reading assistance by their peers, friends, and family members. They usually take oral tests or receive assistance from somebody to write for them. This is also how they handle their education throughout their period in high school.

The braille illiteracy and the poor braille skills are clearly noticeable even among students who attended blind schools. This can be attributed to several factors. Most of the students are admitted to a regular school and begin from grade one without attending special kindergarten, where they can practice braille at an earlier stage. Some students living in remote areas often attend regular schools and never receive the information regarding assistive tools for the visually impaired. This leads to a late start in learning the Braille system which results in poor braille training and low practice and eventually a deterioration in their braille skills. Another reason is the insufficiency of braille collections or specialized libraries where individuals with visual impairment can read and develop their skills. Also, because of the difficulties involved with the costs of imported Braille writing tools and the highly expensive papers that the Braille system uses, students have no Braille books, slates, or styluses of their own. Braille equipment and books at schools are only provided during the school hours. They are considered school property and students are allowed to use them only in class and are not permitted to take them home; moreover, since the first school for the blind was founded, there has been a constant problem of shortage in Braille embossers because of the high cost. Therefore, Braille books and handouts that are used in classes are either written manually by the teachers or printed outside the country. For this reason, there are not enough textbooks, and each student has to share a book with one or two classmates. Sharing Braille books in classes due to shortage is frequently seen also in other African countries such as Ethiopia as reported by Yibeltal (2012). On the other hand, students living in areas that are not covered by the services of any blind organization are suffering from lack of information concerning their education and from acute shortage of teachers for students who are blind or visually impaired as well. Services provided are more likely to be associated with the goodwill and efforts of the administrators who did their best to provide whatever resources they can to their students. These are the main reasons behind why many high school or university students have little or no braille skills.

Despite this gloomy situation, many of the students continue their general education and a considerable number of them manage to continue with their college education. The Ministry for Higher Education and Scientific Research records indicate that by the year 1996, there were only 60 graduates of Elnour institute and other schools enrolled in the University of Khartoum (Ministry for Higher Education and Scientific Research in Sudan, 1997). However, the policies regulating the educational process of this category of students are still vague and are in a desperate need for reform. It is still not clearly stated what special considerations those students should receive to help facilitate their education. It is also uncertain what exactly the instructors and teachers ought to do to ensure that this sector of the students’ population receive the same quality of education as their sighted peers.

Recent studies and research projects have been focusing on the barriers that may hinder the academic performance of this category when they take their first steps into their high education institutions. Some of these include the absence of qualified personnel and the lack of necessary tools to meet their special needs (Fichten, Asuncion, Barile, Fossey, Robillard, Judd, Wolforth, Senecal, Genereux, Guimont, Lamb, & Juhel, 2004; Axtell & Dixon, 2002). Issues pertinent to transition from the blind schools to the mainstream institutions were discussed by Goode (2007), Sue and Nicola (2008). They recommended that students who are completely or partially visually impaired should continue to have access to qualified teachers after they graduate from the school for the students with visual impairment. Those teachers are expected to be more capable of monitoring the student’s progress and will make sure that they are being adequately supported. Papadopoulos and Goudiras (2004) focused on how the examinations for this category should be offered...
and administered, while Orsini-Jones, Courtney, and Dickinson (2005) and Orsini-Jones (2009) discussed the lack of adjustments and preparations that are always needed to minimize any possible negative impact on the students’ performances. These adjustments included getting the study materials prepared on time and in advance, preparation and keeping up with scientific papers and journals, facilitating the review of study materials with ample time before examinations, ensuring the availability of dictionaries, making the library website and encyclopedias accessible and providing an environment that helps the students to focus when using the audio books or any other recorded study materials.

The issues addressed in these studies are the core subjects of the interview questions and the rationale behind the hypothesis in this article. After the analysis of these interviews is completed, the ultimate target here is to identify the needs of this category of disabled students as they perceive them, to highlight the difficulties they encounter while performing any of their school requirements, and to determine their level of satisfaction or dissatisfaction towards the support mechanism at the university. It also aims to draw a conclusion on how the academic settings and facilities are set to meet the special needs of this group of students, how strategies for overcoming barriers are designed. Finally, the paper will offer some recommendations for improving the academic environment to help those students do better in their studies.

Method

The hypothesis of this paper is that academic support, including use of assistive technology that the visually impaired students have been receiving during their pre-college school experience, tremendously contributes to shaping their college education experience. To examine this hypothesis, this study addressed the following questions:

1. What type of support the participants may have received during the period of their pre-college education to help them overcome the obstacles pertinent to their visual impairment disability.
2. How the existence or non-existence of this support may have affected their academic performance during their pre-college education.
3. What level of support the students were anticipating to receive upon their admission to the university.
4. What type of assistive technology the participants knew or have previously used.

In order to find answers for these questions, a research was designed using the semi-structured interview model. It follows the model, suggestions and adjustments proposed by Allison and Lucy (2003) and Orsini-Jones et al. (2005) in regards to the field of research on the students with visual impairment in higher education institutions.

In preparation for the interviews, each of the Director of the Association of the Graduate Students with Visual Impairment at the University of Khartoum, one associate professor who is visually impaired working at the same university, three Sudanese students who are residents of Japan and one member of the board of trustees the Japan-based non-profit Sudan Association for Assisting and Promoting Education for the Disabled in Sudan (CAPEDS) were consulted. The fact that all those people are visually impaired and have many personal experiences with the topics raised in this research makes their views a valuable source of information. They all agreed that the questions should be designed in a way to permit the participants to explicitly and adequately reflect on their situation and experience at the University of Khartoum. Therefore, it became necessary to examine the participants’ educational history including their early stage of schooling. The idea behind including the pre-college experience is to obtain information relating to the level and kind of support the participants may have received during that period to help them overcome the obstacles that resulted from their visual impairment disability. Another intention was to know how much the existence or non-existence of this support may have affected their academic performance at the earlier stage of their schooling. In case the students may have received any level of formal support during that stage, it becomes important to know what level of support they might have anticipated to receive upon their admission to the university. Investigating the pre-college experience is also thought to reveal if the participants were specifically familiar with any of the special reading and writing methods used by the students who are classified as having a visual impairment. The importance of this aspect is that it shows
if the participants came equipped with any skill to employ if the university offers them any technical facilities.

Accordingly, the questions of the interviews were phrased in a way that makes it possible to acquire in depth details relating to personal data, educational background before attending the university, the administrative efforts to accommodate their special needs, the academic support offered to them through any authorized government body, the study methods they have used during university period, the role of specialists to enhance their academic environment and an overall evaluation of the support system.

The questions used in the interview were categorized in three main sections:

1. Pre-college education including methods of study and characters being used, period of acquiring the used characters, specifying the support at local area or school before joining the university, steps taken to promote the idea of getting the visually impaired students proceed with their university study.

2. University period including obtaining financial support such as scholarship or assistive tools, submission of additional documents regarding disability issues, initiatives taken by the university administration to meet the needs of the disabled students.

3. Academic support including methods of study, level of qualification of specialist or staff who is in charge of caring about the students with visual impairment, role of the support staff, procedures for receiving support, training to enhance disability staff skills, satisfaction with the support system, type of support deemed necessary to improve the study environment for the students with visual impairment.

Research Procedure

16 visually impaired students who were enrolled in the academic year 2010 at the University of Khartoum, Sudan, and another four who graduated since 2005 were contacted and asked to take part in this study. The interviews were conducted face to face with 19 participants at the main campus and via telephone with one participant. Each interview took between 30 to 50 minutes. The author contacted the Deanship of Students’ affairs to help with recruiting the visually impaired students at the university to participate in this study. The author was also directed to check with the University Audio Library to obtain detailed information on this group of students. Thanks to the effort made by a staff member who made the contacts, 16 out of the 30 students who were officially enrolled consented to participate. Through the efforts of the Director of the Association of the Graduate Students with Visual Impairment at the University of Khartoum, four graduate students agreed to participate. In accordance with the research practice ethics of the University of Tsukuba in Japan where the author was a graduate student at the time of data collection, the purpose and the scope of the study were adequately communicated to the participants who voluntarily granted their consent to record the interviews on digital recorder. The participants fall within an age range between 17 and 31 years old. No names will be revealed in this article and, instead, the participants’ assigned numbers will be referenced. Table 1 gives details of the participants’ demographic data. Eight of the participants attended Elnour Institute for the blind during their primary education, while the remaining 12 had their primary education at regular schools. All of the participants attended regular high schools.

The reason for selecting this setting is that the University of Khartoum is the supreme higher educational institution in Sudan and it has an established tradition and history of accepting students with visual impairment. Given the nature and purpose of this research, the academic qualifications of those who agreed to participate make them the ideal sample to represent students with visual impairment at higher education institutions in Sudan.

Data Analysis

The data and personal details that were collected through the interviews have been classified into two categories. One category relates to the participants’ pre-college experience, and the other one is pertinent to their college experience. The open-ended questions were analyzed qualitatively by means of content analysis (Lincoln & Guba, 1985). Data were sorted into categories that gave rise to themes. Through dialogue with a colleague, consensus was reached on the themes. Where appropriate, a frequency count was also used to describe the number of response within each category.
Results

The Pre-College Experience

The data collected through these interviews made it possible to identify two sets of obstacles described by the participants. The first one relates to acquiring adequate support during pre-college education and the other one is the lack of information and shortage in special tools and supplies to help them perform their school duties.

Support during pre-college education. Nine of the participants received helpful support from their teachers during their high school years. This is partially due to the fact that some high schools had the experience of having students with visual impairment in the past. According to participant 12’s own translated words “the teachers helped me and acted very positively with me because of their previous intensive experience in dealing with a number of situations similar to mine in the same school”. Participant 2 mentioned that his case was appropriately dealt with because one of the teachers had the experience of volunteering for the Sudanese National Association for the Blind. The same participant describes one teacher as helpful and was ready to “explain to the other teachers the different ways to handle a situation such as mine”. Consequently, “the teachers became highly aware and understanding of my situation and helped me a great deal”. Another four participants stated that their hard-work and focus in their studies motivated...
their teachers who believed in their seriousness and became more willing to offer help.

Study methods during pre-college period. Most of the participants used to take oral examinations during their pre-college study. They used auditory assistance such as getting assistants to read out for them using tape recorders and MP3 players (digital audio player) in addition to careful memorization. Although there are eight participants who came from Elnour institute, only four of them kept using Braille system during their high school study, while the others ceased using it. They credited their decision of no longer using this technique to the fact that it is very expensive and also because they discovered using other auditory techniques that are more convenient. Data regarding the study methods that were used by the students before they entered the university is indicated in Table 2.

Participants’ College Experience

Academic support. Academic support includes providing technology devices and materials such as cassettes and tape recorders to students upon being admitted to the university. The participants’ overall evaluation indicated their dissatisfaction of the academic support offered to them. They indicated that the cassettes they received were not sufficient to carry their entire study data for a semester long period. The students who used the Braille system complained that the specific kind of paper this system uses is either unavailable or too costly to afford. Participant 11 stated that he was given a tape recorder and 10 cassettes when he was first admitted to the university. He also received a monthly payment approximately equal to $45 as financial support from the Deanship of Students Affairs which was, according to the same participant, not enough at all. He estimated his need of 40 cassettes per year at the minimum, for which he had to pay an amount equal to $80 and another $200 for the Braille system paper. All these expenses would be an additional financial burden that the students and their families had to shoulder in addition to the everyday living expenditures. The participants’ answers regarding the initiative to accommodate their special needs overwhelmingly denied any tangible effort in this direction. Participant 13 stated that he didn’t notice any tangible action from the university’s side to accommodate his needs. He thought the instructors must have been notified of his situation before classes began in order to be prepared. According to the same participant, this was not the case. He had to manage to explain his disability status to them and that he requires special arrangement to accommodate his impairment. The participants indicated that these initiatives were inadequate, and when found, they were limited only to the admission stage. No subsequent follow-up is undertaken to understand and evaluate their problems while taking classes. For instance, two of the participants pointed out that they were denied admission to certain departments such as foreign languages. Participant 20 intended to study French but was also not given the opportunity. They requested that admission to the various departments should be specifically and clearly regulated. Additionally, they pointed out their needs such as having textbooks in Braille and recorded teaching materials, providing assistance in writing the assignments and extra time for the examinations.

Study methods during the university period. The participants mentioned a variety of methods they use to handle their study at the university. Table 2 gives detailed explanations of the study methods they used. Using tape recorders is the most preferred method for 15 individuals among the participants. Three participants managed their study by using either Braille or Braille and computer with screen reader while one of the remaining two used magnifier and the other one received reading assistance. Because examinations are still being done manually, one major problem the participants encountered was to have a person available to write for them during exam sessions. It is even more difficult for the newcomers because they don’t have the time to get acquainted with other students who may be willing to help. Participant 1 who is partially sighted couldn’t manage to find a person to write for him during one examination and for that reason he lost a whole year. Participant 15 who is also partially sighted complained that it was not always possible to find a person who will dedicate his or her time to help with 12 school subjects. Volunteer students make themselves available sometimes and at their own convenience but certainly not during examination time when the need is at its zenith. Participants 5 and 11 who are both totally blind gave detailed explanation regarding these problems. They stated that these volunteers, if found, lack any experience in dealing with students...
with visual impairment and never had any professional training to help in such situations. They may also not be good hand-writers, or are not qualified enough to accurately write all the examination details in the way the examinees would have wanted.

The support facilities and personnel. The University of Khartoum has an audio library with one room for studying by using tape recorders and another room for the Braille books. The library is equipped with one Closed-Circuit Television (CCTV), five tape recorders in addition to a collection of Braille books and cassettes. It also has two computer centers equipped with five computers with screen readers. Five of the participants commented that five tape recorders were not enough for more than 30 students who constantly want to use them. Also, the participants made no reference to the high-tech computer centers; this is a signal that they didn't possess enough technical skills to use them.

Another problem was the limited number of qualified staff to provide support. There is only one person responsible to offer help to people with all different kinds of disabilities including overseeing the financial and academic support. The audio library has four employees to supervise the process of recording, copying the cassettes and organizing the collection of books and cassettes. The staff members at the audio library were criticized by ten of the participants on the ground of not being permanent staff and regularly rotated with other employees. They were also described as too incompetent to professionally handle the academic matters of the students with visual impairment, especially in regards to the technical equipment they use as illustrated in Table 3. The participants were also asked to provide evaluation to the overall university academic environment for students with visual impairments. Their answers overwhelmingly showed a state of utter dissatisfaction.

| Satisfaction level      | Participants |
|-------------------------|--------------|
| Very efficient          | 0            |
| Efficient               | 4            |
| Average                 | 8            |
| Somewhat inefficient    | 6            |
| Totally inefficient     | 2            |

Discussion

It became clear from the participants’ feedback that the limited and unsatisfactory level of academic and logistic support they receive is, in many occasions, forcing them to rely on their own resources to manage their school requirements, and also to exercise their own efforts to get voluntary help from their sighted peers. This, to them, is not of a big difference from what they experienced in their pre-college education when they were mostly with sighted students. Several factors appear to have contributed to the unsatisfactory level of academic and logistic support to those students. Among these is the fact that students with visual impairment did not have adequate information that could have helped them to make better plans for their education. Many of them came to the university without knowing exactly what to expect, how to manage their study and how their special needs will be met and handled. It became clear from the participants’ feedback that there is great need for a clear and transparent policy to identify and specify the various needs of this category of students based on the level of their disability as contended by Parker (2000). This is important because each level of visual impairment requires different levels of support (Gray & Wilkins, 2005).

Another factor that was highlighted through the participants’ comments is their complete dependence on auditory means and assistance during their pre-college and college education. The tendency to depend on auditory means appeared in the answers of 15 participants who didn’t use Braille in their study at the university. It is, thus, easy to imagine the difficulty those students face when they come to write an assignment, take notes or give the correct spelling of a word. Using auditory techniques will make correct spelling and good writing skills an impossible task to reach. They should learn to read and write words, use word signs, contractions and abbreviations and should also learn the full spelling of words in order to have their notes taken correctly and assignments submitted appropriately (Mason & Etheridge, 1994).

It can also be noticed from the answers of 2 participants of those who attended the blind school in their primary education that they have the desire to develop their skills of using assistive devices such as computers with screen reader in combination with Braille as shown in Table 2. Although the number is
small, this supports the hypothesis this paper is making about the effect of the pre-college education on the participants during their period of study at the university.

It is undeniable that having students with visual impairment is a challenge for all the staff involved. However, the necessary adjustment to meet the needs of such a group should be carefully coordinated between the different university offices including the teaching staff. As expressed by O'Connor and Robinson (1999) and Orsini-Jones et al. (2005) the creation of a safe environment within which a disabled student can thrive requires a high level of collaboration between all staff and students. Accordingly, it is crucial to have a clearly and carefully crafted policy and procedures to regulate the admission of students with visual impairment in certain departments such as foreign languages, and also to provide assistance for them during examination periods.

Issues regarding the situation of disabled students in higher education such as the lack of policy, general lack of educational materials and infrastructural facilities as well as unfavorable attitudes towards individuals with disabilities are likewise reported in Europe as well as African countries that have similar cultural background to Sudan. For instance, in a study conducted in the UK by Goode (2007), participants stated that some lecturers were reluctant to meet the learning needs of students with disabilities. The issue of showing negative attitudes towards this category of students is reported in a study conducted in Botswana by Moswela and Mukhopadhyay (2011) as well as in Zimbabwe by Chataika (2010). In both cases, participants lamented many negative attitudes that resulted in creating more barriers for them to carry throughout their higher education.

Another aspect that has repeatedly come up in the participants’ comments is the importance of designating permanent staff members to handle their academic and other services that are provided to them. The staff needs to be professionally trained and academically qualified to handle the special needs of the visually impaired students effectively and efficiently. This will make them familiar with the methods and the special techniques used by those students. The unpalatable truth is that professional librarians do not consider employment in library services for the blind to be a serious career option particularly in the under-developed countries as stated by Rowland (2008).

**Conclusion and Recommendations**

This research investigated the transition from pre-college to the college level of education for 20 Sudanese students who are diagnosed with complete or partial visual impairment. The research identified a series of obstacles that the participants have experienced during their course of study at the University of Khartoum in Sudan. These include:

- Lack of support from the schools they attended.
- Absence of the correct guidance to help them handle their study properly.
- Lack of information regarding the education for the students with visual impairment.
- Procedures of admission do not follow a specific criteria and this makes it harder to anticipate what is required to have the admission completed.
- Technical support and supplies are way less than what the actual need is.
- No clear policy to regulate a close monitoring after classes begin.
- Relying mainly on auditory assistance and neglecting using Braille system resulted in a sharp drop in Reading and Writing skills.

The study presented the views of the visually impaired students concerning their level of satisfaction of the support they received during their university study. However, one limitation in this study is that the views of teachers, staff, the administration personnel and the concerned government departments have not been presented. This is one area this study recommends to be covered by future researches. It is also recommended that the experience of students from other universities in Sudan should be investigated. This will allow for making comparisons of policies and procedures of how different schools handle the matters of their visually impaired students. It will also allow schools to learn from each other and avoid each other’s mistakes and short fallings in this field. The views of the family should also become a subject of research and study.

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