

MULTIDISCIPLINARY APPROACH TO THE EDUCATION OF PERSONS WITH SPECIAL NEEDS: THE PLACE OF ICT

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Abstract

In contemporary educational delivery for persons with special needs there is no gainsaying the fact that information and communication technology (ICT) has an important role to play. This paper specifically considered ICT involvement in educating persons with special needs vis-à-vis multidisciplinary approach to their education. An understanding of what multidisciplinary approach stands for was given as well as some examples of where multidisciplinary approach was applied in assorted fields. The advantages of multidisciplinary approach to the education of persons with special needs were discussed. Furthermore, the importance of ICT in a multidisciplinary set up for persons with special needs were looked into with respect to such activities as communication, therapy, counselling, research, and information management. In addition, recommendations were made one of which is that experts in the education of persons with special needs and the support professionals should work towards becoming ICT literate as well as updating themselves with contemporary ICT skills that are relevant to their responsibilities.

Keywords: Special needs, education, multidisciplinary, ICT, team

Introduction

For any country to claim to be advancing, she has to carry all her citizens along in her developmental goals. Thus, the development of Nigeria cannot be said to be complete without the development of persons with special needs. Education plays a vital role in societal development. Education transforms and its values make perennial impact on human lives. The higher the quality of educational values offered, the greater the expected dividends for the individuals with special needs. Furthermore, the higher the degree of equitable educational opportunities presented, the better the chance of even educational advancement among the citizens.

In a typical special needs education classroom, the special educator works in conjunction with other specialists from other disciplines whom their services are considered necessary in the education of the exceptional person. This approach may be regarded as the multidisciplinary approach. From a study conducted by Tang & Hsiao (n.d.), some of the benefits of multidisciplinary collaboration include improved skills in communication, collaboration and professional abilities. Furthermore, the professional group effort of a multidisciplinary team helps to ensure that the collective work of the team members regarding students is comprehensive and is as fair as possible (Vanderbilt University, 2018).

Information and communication technology (ICT) plays an essential role in ameliorating the challenges of persons with special needs. ICT is a collective term that is used to refer to any instrument that plays a definite role with respect to dealing with information and communication. Examples include radio, television, computer, telephone, satellite communication systems, etc. In this paper, the place of ICT in multidisciplinary approach to the education of persons with special needs is considered.

Multidisciplinary approach and the education of persons with special needs

Multidisciplinary has to do with combining or involving some academic disciplines or professional specializations in an approach to a topic or problem (“multidisciplinary”, 2018).

Multidisciplinary approach means that knowledge of several disciplines are employed in handling a given problem and they are supplementary to one another in such a way that it is possible to get clear cut conclusion, free from being regarded as an isolated or partial one (Choudhary, 2015).

Several contributions made regarding multidisciplinary approach to issues of life exist such as in diabetes care by Dargis, Pantelejeva, Jonushaite, Vileikyte and Boulton (1999), in language teaching by Adeyemi (2010), in futures education by Lombardo (2010), in healthcare by Krause et al. (2006), and in manufacturing by Breit, Downey, Pepper, Broadbent and Lyon (2015).

Multidisciplinary approach to special needs education involves assembling experts from other fields other than special education to join hands with special educators in delivering education to persons with special needs. Multidisciplinary approach leads to the formation of multidisciplinary teams. A multidisciplinary team in special needs education is a group of individuals from several disciplines who are brought together to pursue a mutual goal, such as evaluating a student for placement in special education or setting up an individualised education programme (IEP) for a student (Vanderbilt University, 2018).

According to Hennessey (2011), multidisciplinary approach to education has some advantages, which include:

- i. Broadening of the perspective of the learners; and
- ii. Moving universities to a higher level towards addressing the massive problems that the human family deals with around the world.

It is necessary to mention that these advantages are viewed to be relevant, not only for university education but for other forms of education as well. Relating the first advantage to learners with special needs, when each of the professionals involved in a multidisciplinary team play their respective roles in the education of these people with special needs, the learners will realise that the special needs teacher alone is not enough to handle issues that emanate when educational contents are delivered to them. Thus, multidisciplinary approach highlights the power of team effort. When persons with special needs observe successful rendering of services to them from groups of diverse experts they would have been exposed to the beauty of working together to achieve a common goal. No human is an island. At one time or the other we are bound to need the support of other people, which necessitates the need for gathering experts from assorted backgrounds to form a team to render services to exceptional persons. Such experiences should make persons with special needs appreciate the support of others all through their lifetime. However, it is important to highlight that the lesson to be picked from their experiencing the value of team effort will be realistic if the specialists involved perform their duties as expected and cooperate among themselves towards achieving the purpose of constituting the team.

Considering the second advantage earlier mentioned, the bedrock of multidisciplinary approach is collaboration. When professionals with varying but complimentary expertise join hands in tackling a problem, a better result is expected. Thus, multidisciplinary approach to the education of persons with special needs enables reaping of the benefits of specialisation. The nature of knowledge is such that no single individual knows it all. Hence, teachers of special needs alone cannot address all the needs of persons with special needs. This necessitates collaboration of other professionals to render their services in accordance with their respective areas of specialisation. The nature of the education of persons with special needs is such that in a typical scenario other disciplines are expected to get involved for proper delivery. For example, in autism, experts like teachers, support assistants, speech and language therapists, occupational therapists, psychologists and other therapists (including music therapists) work collectively as an integrated multidisciplinary team (Eagle House Group, 2013). Teachers of persons with special needs are central in educating exceptional children, but they are not experts in other fields. Attempting to take the role of other experts needed in the education of these learners could lead to unsatisfactory educational outcomes for them. Thus, teachers of learners with special needs must be good team players. They also play the role of team managers because from the education they have acquired, they should be able to decipher when learners with special needs require the services of the other experts that are part of the multidisciplinary team.

Place of information and communication technology in multidisciplinary approach to the education of persons with special needs

Information and Communication Technology becomes relevant in a multidisciplinary approach to the education of persons with special needs in various activities that could occur.

Some of these activities, which could take place in educational settings or otherwise are hereby discussed.

Communication

Team members of multidisciplinary special needs education must communicate one with another. Furthermore, the experts will have to communicate with their clients. ICT becomes useful in facilitating various forms of communication that will have to take place when these professionals discharge their duties within and outside the classroom settings as well as when the persons with special needs want to get across to them. Forms of communication include phone messaging, electronic mailing, electronic chatting, audio/video conference calls, social network communications, etc. The particular technology that will be employed could be influenced by the ICT proficiency level of the parties involved, the kind of ICT facility that is available, or the kind of disability (if any) of any of the participants.

Therapy

When a person with special need is undergoing one kind of therapy or the other, ICT could be useful through virtual reality (VR). Virtual reality is a term used to express a realistic three-dimensional image or artificial environment that is created with a combination of interactive hardware and software, and offered to the user in such a way that any doubts are put off and it is taken to be a real environment in which interaction occurs in an apparently real or physical manner (Reality Technologies, 2016). Encouraging independence, full participation and access, and a sense of control and mastery are the major rehabilitative goals for children with disabilities, and much of the work being done for children with disabilities in VR has concentrated on these goals in such concrete ways as training to shop independently, ride public transportation, and safely cross streets (McComas, Pivik & Laflamme, 1998). One example of this is a virtual reality system developed by a team of researchers at The University of Haifa, Israel having a number of scenarios that are produced to teach an autistic person how to cross a road (Virtual Reality Society, 2017b).

Counselling

ICT is also useful during counselling sessions. According to Iacob (2012), the development of ICT has opened the possibility to create and put into operation numerous new instruments specifically intended for counselling and guidance. For instance, as regards counselling for persons with special needs, short but impactful recorded documentaries of actions and their resultant effects can be played for them. On the positive side, documentaries can be produced of some persons with disabilities who despite the challenges they faced due to their impairments became successful in life. This should be geared towards motivating them to strive to make something good out of life despite their impairments bearing in mind that the popular slogan – disability is not inability is a reality. On the contrary, images or videos of the effects of poor handling of impairments could also be presented during counselling sessions. The essence of this is to make the disabled persons undergoing the counselling realise that if they do not handle their respective handicap conditions wisely, their stories may be similar to those exhibited/played to them. Although ICT is necessary for contemporary guidance and counselling, Iacob (2012) asserted that it is the duty of researchers and practitioners alike to discover meaningful ways of using ICT devoid of compromise to quality standards and ethics.

Research

One area in which multidisciplinary approach in handling the education of persons with special needs is vital is in the area of research. A research that is carried out by such a multidisciplinary team that is composed of experts from different academic fields of expertise but with a unified purpose is expected to produce robust outcomes. However, in this information era, research of this kind will be enhanced through ICT support in such activities as data gathering, analysis and processing of data, presentation of results, discussion of findings, documentation, and information dissemination. One of the ways of taking advantage of contemporary technologies is through digital research, which according to the University of Nottingham (n. d.) can be regarded as the use of digital technologies to revolutionize the way research is conducted and bring about means by which new research challenges can be addressed. Furthermore, Ross (2017) proposed speculative method as a research approach in digital education research in which researchers are encouraged to be involved in ingenious ways of conducting research which could be of significant value to the field of digital education. Thus, multidisciplinary special needs education teams could see ICT not only as a means to enhance conventional research methods but also as an instrument through which innovative research approaches could emerge.

Information Management

Information systems could be developed for handling information that has to do with persons with special needs. Each person with special need will have a unique identity. Each of the specialists involved in handling the exceptional persons will use their identities to record their respective behaviour and performance, which would afterwards be evaluated. Consequently, progress or retrogress made by each of them may be determined and appropriate follow up actions could then be taken. According to Muhsinzoda (2015), the main rationale for information systems is to make available the right information to the right people at the right time. From this statement, it is obvious that information systems are needed for enhanced management of persons with special needs. However, it is necessary to state that the quality of information released by an information system is dependable upon the quality recorded into it.

Production of Assistive Devices

Some assistive devices for persons with special needs are ICT-based. Some of them are ICT products while some have elements of ICT embedded in them. When the production of these assistive pieces of equipment follows a multidisciplinary approach a robust device is anticipated. This is attributable to the reason that the respective experts in the team are expected to bring their professional know-how to bear in the production of the devices. For example, if education software is to be produced for a biology student that is visually impaired, experts from at least the fields of visual impairment education, biology education and ICT are expected to get involved. The biology educationist will have to ensure that the contents of the software adequately satisfy the objective(s) of the lesson that the software addresses. The concern of the visual impairment educationist will have to be towards seeing that the characteristics of the visually impaired are put into consideration while producing the software. The ICT professional should not only make sure that the software is devoid of errors, including syntax and semantics errors but should work towards seeing that the software is appealing to the intended end user, which in this case is the visually impaired

biology student. Such a multidisciplinary approach like this is a welcome practice. For instance, in the manufacturing of biotherapeutics Breit et al (2015) remarked that a holistic approach features various applied disciplines like biology, engineering, process control, signal processing and modelling.

Recommendations

On the basis of the presentation in this discourse, the following recommendations are hereby made:

- 1) Experts in the education of persons with special needs and the support professionals should work towards becoming ICT literate as well as updating themselves with contemporary ICT skills that are relevant to their responsibilities.
- 2) Appropriate ICT facilities should be provided to enable proper communication among members of a special needs education multidisciplinary team. In addition, ICT facilities should be provided for flow of communication between these experts and the exceptional persons they are given to take care of.
- 3) Where virtual reality is needed to provide therapy to a person with special need, multidisciplinary team members should understand the concept of virtual reality and the appropriate way to get it involved during therapy.
- 4) Audio and audio-visual productions should be made to support counselling services. However, they should be done such that the rights and privacy of the individuals used in the presentation are not tampered with.
- 5) When special education research is carried out by a multidisciplinary team, ICT should play the required role during information activities. For instance, interview sessions can be recorded with ICT devices like tape recorder, video recorder, or a smartphone or tablet that has a mobile app made for recording purpose.
- 6) Where a multidisciplinary team is involved in handling the education of persons with special needs, if an information system is to be produced the experts that make up the multidisciplinary team should be carried along. Their inputs and constructive criticisms could aid in the creation of a robust application.

Conclusion

In this information and knowledge-based age, it has become necessary that specialists in various fields of human endeavour equip themselves with basic ICT literacy skills. Experts without these skills (which include word processing, electronic presentation, etc.) may not be able to match with global trends in their fields as well as in other activities of life. Furthermore, the presence of ICT infrastructure as well as operating environment that is conducive cannot be compromised. It behoves on all stakeholders to join hands towards ensuring better educational outcomes for persons with special needs.

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