ISSAD JOURNAL of EDUCATION & RESEARCH

2022

Institute of Social Sciences
& Development

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JOURNAL OF EDUCATION & RESEARCH

INSTITUTE OF SOCIAL SCIENCES & DEVELOPMENT
UNIVERSITY OF KARACHI

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THE POTENTIALS AND BARRIERS OF IMPLEMENTING DIFFERENTIATED INSTRUCTION IN K-12 EDUCATION: A SYSTEMATIC LITERATURE REVIEW

Nabila El Bizri[1] & Carole Sénéchal[2]

Abstract

Today's classrooms are characterized by being highly diversified. Students in a standard classroom have different cultural and economic backgrounds, motivational levels, interests, and preferred modes of learning. Despite this wide variation in student abilities, teachers use whole-class-instruction strategies to approach all students focusing on the abilities of middle range students while ignoring the needs of students with higher and the lower abilities. Differentiated instruction (DI) is an instructional approach that implements teaching strategies that are student-centered which permit the accommodation for a wide range of students having various learning needs. Despite DI being a promising approach that could benefit both students and teachers, the actual implementation of DI is still limited and critical. This systematic literature review aims at exploring the potentials and barriers of implementing differentiated instruction in K-12 education. Shedding light on the facilitators and barriers facing teachers when implementing DI will help teacher education programs and in-service teacher training programs focus on better equipping teachers and teacher candidates with the right pedagogical tools to work with various learners in general education classrooms. Reviewing the literature mainly identifies teachers' positive attitude towards DI, optimal students' outcome, students' positive attitude towards learning, and students' taking

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responsibility for their learning as potentials for DI. On the other hand, numerous barriers for DI emerge from this review such as lack of time, resources, and training, large classroom size and diversity, low parental support, and lack of teachers' knowledge on ways to implement DI.

Keywords: Differentiated instruction, education classrooms, teachers

Statement of the Problem

Today's classrooms are characterized with a broad range of academic diversity (Whitley et al., 2019). Although students of similar age are sitting side by side in the same classroom, these children are different in so many ways. Some have identified learning problems; others are advanced learners. There are students whose first language is not English and others who underachieve due to various reasons. Students in a standard classroom have different cultural and economic backgrounds, motivational levels, interests, and preferred modes of learning. It is expected that by the year 2035, students of color will contribute to the majority in schools, in addition to a rapidly growing population of immigrant children increasing the richness of cultural diversity in schools. Also, by the year 2035, half of all children are expected to live in single-parent homes at some time during their school year (Tomlinson et al., 2003). In one public classroom, the abilities of students in the same class can range across five different grade levels. Despite this wide variation in students' abilities, teachers use whole-class-instruction strategies to approach all students focusing on the potentials of middle range students while ignoring the needs of students with higher and the lower abilities (Bondie et al., 2019).

There are currently loud voices calling for students with various needs including students with special educational needs and gifted students to be educated together in the same classroom as their same aged peers (Whitley et al., 2019). Hence, the demand for catering for student diversity in todays' classrooms seems

inevitable. The classroom has become a home for students with different backgrounds, learning style, motivation levels, abilities, needs, and interests. This diversity is challenging school and teachers' performance and practices (Suprayogi et al., 2017). Consequently, educators are expected to adopt the right teaching approaches to serve the needs of all learners through instruction and assessment, and provide all students with high quality instruction to ensure the achievement of high academic outcomes (Whitley et al., 2019).

Differentiated instruction (DI) is an instructional approach that implements teaching strategies that are student-centered which permit the accommodation for a wide range of students having various learning needs (Gaitas & Alves Martins, 2017). DI is described as a teaching and learning approach that aims at addressing students' needs within an inclusive classroom (Tobin & Tippett, 2014). Many countries including Canada, UK, USA, Norway, Sweden, Malaysia, Hong Kong, and Australia, have included DI in their educational policies and resource documentation where DI approach is a requirement for teaching and assessing students with diverse needs in classrooms ranging from preschool to postsecondary levels (Whitley et al., 2019). In Ontario the Learning for All (2013) document, discusses the significance of DI in meeting the needs of all learners in K- 12 education.

The document emphasizes the importance of considering the experiences and backgrounds of all learners to cater to their learning needs, modifying the forms of instructional and assessment material, adopting different forms of media, allowing students to perform different types of activities and demonstrate learning through various means, and providing a supportive learning environment to improve the learning experience of all learners. However, it is still unclear whether DI is fully implemented in classrooms and there are only few studies that shed light on the factors affecting the implementation of DI in today's educational settings.

Differentiated instruction is not a new concept in education. DI has always been described as an ongoing dilemma questioning whether or not teachers are able to meet the needs, interests, developmental levels of all students in class (Bondie et al., 2019). In fact, more than a century ago, a single-room schoolhouse in the United States called on teachers to differentiate instruction for students between the age of 6 and 12. Teachers of multi-age classrooms have been implementing differentiation out of intent or necessity for decades. Additionally, parents practice some form of DI as children can be very different in their learning styles and abilities within the same family.

Humans learn differently, and to help them reach the best of their potential, the adults in their lives need to acknowledge these differences and respond to them (Tomlinson, 2014). Recently, there have been calls for the reconstruction of the public educational system taking into consideration individual learning needs. Within this framework, there is a focus on improving students' learning through relating educational content to students' skills, interests, and knowledge. These aspects are essential components in the DI model which represents an effective and efficient way to personalize learning and tend to individual needs (Tobin & Tippett, 2014).

There is a great variation in the ways teachers implement DI. Whitley et al. (2019) describe several studies conducted to explore how teachers implement differentiation. Some teachers differentiate by dividing students into groups according to their levels for reading and mathematics while providing students with level appropriate reading material and worksheets, but all students take the same test. Other teachers can adjust the content, process, and outcome in many ways. Differentiation in instruction sometimes happens only once a week and differentiation practices are more visible in elementary than secondary education. These findings indicate the presence of a wide variation in the use of DI strategies among teachers.

Tending to the needs of a wide range of students is reported to be one of the greatest challenges faced by teachers due to the lack of skills and knowledge on how to adapt teaching instruction and how to modify teaching strategies during the process of teaching and learning (Tobin & Tippett, 2014). It is not easy for teachers to implement DI in their classrooms, because teachers, like students, have their own teaching methods that make them comfortable. Some teachers prefer routine teaching while others prefer in depth comprehension. Some teachers are more into lecturing while others prefer hands-on activities (Aftab, 2016). Although teachers understand that students do not learn in the same way and that each of them has his/her own specific educational needs, only a small number of teachers accommodate these differences in their teaching practices (Gaitas & Alves Martins, 2017).

In many classrooms, the teaching and learning practices are more unitary than differentiated. Tomlinson (2017) gives several examples on how instructions are given in schools. For example, in a kindergarten class all students must visit five centers and perform the required activities during the week. Also, first graders are asked to listen to a story and then draw the beginning, middle and end of the story. Although each student may choose to draw a different aspect of the story, all students are exposed to the same content and are given the same instruction and sense-making activity. In a middle school math class, all students listen to the same explanation and are required to submit the same homework. In high school, students read the same chapters, perform the same assignments, and take the same assessments. All these typical classes are not differentiated. For teachers, after a long time of following traditional teaching methods, it is very hard for them to adopt DI approaches and change their teaching style (Tomlinson, 2017). Despite DI being a promising approach that could benefit both students and teachers, the actual implementation of DI is still limited and critical (Letzel et al., 2020). Many teachers are still adopting more classical approaches to teaching despite realizing their

disadvantages (Suprayogi et al., 2017). Although DI is spreading universally, a structured and persistent implementation of this approach is still the exception rather than the main practice. In today's classroom, one-size fits for all instruction is still dominant (Santangelo & Tomlinson, 2012). Besides, teachers are more likely to orient their teaching toward the middle achieving students leaving several other students struggling with tasks that are too complicated for them and others working on activities they have already mastered (Smale-Jacobse et al., 2019). On some occasions, the lack of differentiation is due to failure of teachers to recognize the importance of this approach in supporting the learning needs of all learners. In other instances, teachers do not differentiate because they lack relevant strategies and knowledge to effectively motivate their diversified students. Furthermore, differentiation can be affected by school culture, philosophy, and practices (Santangelo & Tomlinson, 2012).

Several studies discussed by Suprayogi et al. (2017) reveal a gap between teachers' understanding of DI and their actual implement tation of the approach, suggesting a lower rate of implementation of DI compared to the actual understanding of the aim of the approach. Aftab (2016) explains that avoiding DI is not an option anymore since teachers have students with diverse learning capabilities and various preferences in the classroom. Not only do students have different interests, learning potentials and cultural backgrounds, students often go through mental issues that emerge from problems happening at their household. These factors collectively interfere with students' learning abilities and interests. The growing difference in academic diversity in the past few years may be due to children's exposure to different languages, home environment and the type of support their families provide. Some students come to the classroom with learning disabilities while others have abilities to learn rapidly and require less teacher support. When teachers are preparing their lessons, they need to take into consideration their classroom diversity. Educators cannot simply adhere to one

method of teaching (Aftab, 2016). Many challenges are facing teachers when implementing DI causing educators to abandon the approach (Smit & Humpert, 2012). Hence, it is essential to expose the facilitators and barriers for implementing DI in kindergarten to grade 12 classrooms to help achieve an inclusive environment in schools where all students feel looked after, appreciated, and respected.

There are many studies that focus on the importance and the effectiveness of DI as an inclusive instructional approach that aims at accommodating to the wide range of students' needs by changing the content, processes, and products in correspondence to students' readiness, interests, and learning profiles. There are also many studies that suggest how DI should be implemented and how it is positively associated with a student's outcome. However, minimal research attention is given to studying the possibilities and barriers facing teachers when implementing DI in K-12 education (Whitley et al., 2019).

Shedding light on the facilitators and barriers facing teachers when implementing DI will help teacher education programs and in-service teacher training programs focus on better equipping teachers and teacher candidates with the right pedagogical tools to work with various learners in general education classrooms. Teacher education programs and in-service teacher training can be specifically designed to address the difficulties facing teachers when utilizing differentiation in their classes (Tobin & Tippett, 2014).

It is also important for teachers to benefit from other teachers' experiences with DI. The work in this paper will provide an opportunity for educators to reflect on their practices and understand that their opportunities and struggles to implement DI are not personal and that they share the same difficulties with other educators. Highlighting the potentials of DI will encourage teachers to adopt this instructional approach to meet the various needs of their learners. Besides, discussing the barriers to

implement DI will hopefully allow teacher education programs, policy makers, in-service teacher training programs, and educators to work together towards finding approaches and strategies to overcome the difficulties and build upon the opportunities that DI provide for students.

How Does Learning Happen?

The way learning happens, and the ability of humans to acquire knowledge is a topic that has been studied for decades and continues to dominate the field of education (Christopher, 2017). According to Piaget's (1951) constructivists theory, individuals learn when they interact with their environment and are able to construct schema through different developmental stages. Educational theories set by Vygotsky (1978) and Piaget (1951) on how students learn are considered evolutionary ideas addressing the most effective ways instruction should be implemented. Generally, theories about the different modes of instruction may be affected by the theorists' views and beliefs towards the ability of learners to grasp new concepts and succeed. However, the theories set by Vygotsky (1978) and Piaget (1951) have been tested to prove that learning occurs and identify the most successful instructional strategies to enhance students' outcomes.

During the last century, several factors have impacted the efforts to understand human cognitive development and its effect on instruction. The effect of applying learning theories has been gradual. Traditional schools consider that students' learning can happen through memorization and that knowledge cannot change. Other theorists suggest that learning occurs when knowledge is segmented and delivered to learners through direct teaching. Additional theories emerge based on the assumption that students learn and succeed if they have a clear understanding of the goals of the curriculum and that learning can be increased if students work in cooperative groups where they learn from each other. During the last century and with growing research on learning theories, several theories such as cognitive

development, constructivist theories, brain research, in addition to the theory of multiple intelligences have taken over the discussions in the field of education. All stakeholders in the field of education continue to seek understanding of how students learn, and how information is processed, in addition to the types of assessments required to assess the learning and the mastery of new skills and concepts (Christopher, 2017).

Piaget (1951) and Vygotsky (1978) are strong advocates for the theory of cognitive development and the constructivist theory. Both theorists have similar opinions on how knowledge is acquired, developed, and learned. Both theorists' opinions towards learning branch from the constructivist approach and consider that learning does not happen automatically, but each child is an active participant in his/her own learning process (Liu & Chen, 2010).

To enhance students' outcomes, it is essential for teachers to understand how students learn and utilize instructional approaches according to the way knowledge is constructed. This mentality is fundamental in creating meaningful learning experiences and ensuring all students achieve success. According to Gardner (1983), there are multiple cognitive learning styles that lead to the development of the theory of multiple intelligence. The theory of multiple intelligence classifies intelligence as musical, visual-spatial, bodily-kinesthetic, logical-mathematical, linguistic, interpersonal, and intrapersonal which allow students to access information in several ways and process material presented to them (Levy, 2008). Learning styles suggest that each learner has unique ways of learning new skills and acquiring new and difficult concepts. The expansion of learning styles is due to biological or developmental factors and is classified into environmental, emotional, sociological, physical, and psychological. Therefore, when learners identify the group that matches their learning style, they become capable of obtaining knowledge based on their preferred mode of learning (Christopher, 2017).

Equity and Diversity in Ontario Schools

In the current globalized world, our lives are more interconnected than ever before. Education matters now more than ever for the success and progress of a whole nation along with its individuals (Darling-Hammond, 2013). The best-performing educational systems in the world are also the most equitable. Over the past few years, the Canadian education system has been recognized as one of the best performing education systems and has proven to be more equitable than the educational systems of many other countries in terms of students' diversity and students' educational outcomes (Shewchuk & Cooper, 2018).

Adamson's (2010) The Child Left Behind report, examines inequity in children's well-being in three essential domains: material such as family housing and income, health, and educational achievement. Canada is in seventeenth place in comparison to twenty-four other countries in material well-being, ninth place in health, and third place in education. Hence, Canadian schools are doing so much better than other schools in the world in minimizing the impact of students' socio-economic status, poverty, health, and housing inequality on students' educational success and achievement. However, a study conducted by Carr (2008) indicates that there are major issues and challenges related to human rights, equity, and diversity in the Canadian education system. Around half of First Nation people graduate from high school compared to 85% graduation percentage among their peers in the general population. English Language Learners contribute to 25% of students in Ontario, but they have lower school success rates and increasing deferral rates when taking provisional literacy tests (Shewchuk & Cooper, 2018).

According to Shewchuk and Cooper (2018), one in five children in Ontario live in poverty and half of the students who dropout of high school lives in low-income families. On the other hand, a survey conducted across 80,000 schools in the United States indicates that students whose teachers are of the same race

perform better, because students feel more cared for and more interested in schoolwork. In Ontario, the demographic variations between students and teachers are quite significant. Minority students represent 26% of the general population in Ontario but contribute to only 10% of secondary school teachers and 9% of elementary school teachers. Accordingly, educational data in Ontario shows significant inequalities in the education system. Hence, equity in education remains an essential matter to address in Ontario.

Currently, Ontario Ministry of education (2017) educational plan aims at increasing students' attainment, minimizing gaps among students' achievement, and increasing the public belief in the current education system. In Ontario Ministry of Education (2009) Equity and Inclusive Education (EIE) strategy, there is a great focus on addressing equity issues through developing an inclusive education system where all students, parents, and school community members feel comfortable, safe, and accepted. Besides, all students should be supported with tools to assist their success in a high expectation teaching and learning environment. The EIE strategy supports the creation of a caring school society with staff and students who appreciate and respect diversity.

The EIE strategy aims at accomplishing three main goals to develop inclusive schools. The first goal is to establish committed leadership among schools, school boards, and the Ministry of Education where the last is committed to providing the required support and guidance to establish this goal. Second, every school board is required to set and utilize an EIE policy which includes procedures and policies to develop and support an inclusive learning environment for all learners. Policies and procedures are expected to support an inclusive curriculum, inclusive assessment practices, and positive relationships with the surrounding communities. Third, schools and school boards are required to monitor the progress and implementation of their

EIE and report on its development to all stakeholders involved to ensure transparency and liability.

Ontario's educational plan to minimize the achievement gap among learners is reflected in Ontario Ministry of Education (2013) Learning for All document. Learning for All suggests that achievement gaps are variations in the achievement of different students. Achievement gaps can be impacted by several factors such as race, gender, cultural background, the need for special education, socio-economic status, and language proficiency. Achievement gaps can also be due to a combination of these factors. Additionally, the term achievement gaps can be used to refer to the gap between what the students can accomplish and their actual achievement. Learning for All focuses on assessment and instruction processes that support every learner to reach his/her maximum potential. The document suggests differentiated instruction as an instructional approach that responds effectively to the wide variations in students' strengths and weaknesses and supports each student to succeed.

Learning for All suggests that the success of DI in the classroom depends greatly on teachers' understanding of students' needs and their levels of readiness in a certain subject at a given time, in addition to the types of learning activities that are likely to interest students and increase their learning motivation. When teachers implement DI, they are increasing the chances of their lessons being highly interesting and engaging to students. Therefore, teachers are encouraged to modify projects, themes and examples used in instructions to better match students' interests, preferences, and learning styles. Flexible grouping is also suggested to permit educators to assign various tasks to different learners individually or in small groups according to their strengths, interests, learning styles, or readiness. Learning for All also stresses on the fundamental meaning of DI which includes challenging students at the right level, providing them with alternative instruction and assessment activities, using multiple forms of grouping to support students' learning, and

using ongoing authentic assessments to modify strategies and resources according to the assessment results.

The Philosophy of Differentiation

According to Tomlinson (2014), the life of humans is an ongoing work in progress. At a young age, we start developing a set of beliefs about everything surrounding us. As we grow older, and with growing life experiences, we test and redefine our beliefs. For instance, many adults experience parenthood with a set of preexisting and authentic ideas on how to be a reliable parent. However, some adults' parenting styles evolve and develop as they reflect on their experiences over time. Similarly, teachers enter the field of education with a set of preexisting beliefs and philosophies about their upcoming teaching experience. However, the best teachers are those who develop based on a critical examination of their experiences and ongoing reflections on their everyday practices. Hence, their beliefs and professional decisions become based on a philosophy that points them in the right direction for growth rather than on habits and convenience. It is not essential for educators to have an existing philosophy for education to tend to the needs of their students. With experience, teachers will become aware that differentiation is compatible with basic beliefs about the importance of each individual and how teaching and learning can honor and increase the abilities of educators and students equally.

According to Tomlinson (2014) DI is embedded in four principals. First, diversity is ordinary and fundamental. The experience of every individual is unique and of great value. The existence of multiple opinions and voices enriches our experiences. As a result, the strength lies in communities that are inclusive rather than exclusive. Second, each student encompasses a high and hidden capacity to learn. The role of educators is to convey their beliefs in their students' abilities to achieve significant learning goals, train learners on performing hard work, and set the growth pattern so that students often experience success after hard work. Third, students' success

depends mainly on their educators. Although students and their families play an essential role in engineering students' success, it is the role of teachers to stimulate and enlighten students' efforts and provide support and encouragement for students and their families. Fourth, teachers are required to be the advocate of every single student. Differentiation is an instructional model that supports teaching and yields equity and success to all learners. Hence, teachers are expected to believe in the ability of all students to flourish, implement a curriculum that equips all students with essential principal understanding and problem-solving skills, set the pace for the advancement of learners toward critical learning goals, and establish a classroom environment that continuously reinforces the success of all its members.

Research Purpose

The purpose of this systematic literature review is to identify the facilitators and barriers facing teachers when utilizing DI in school grades ranging from kindergarten to grade 12. The work in this paper will also provide some suggestions on ways to overcome the difficulties associated with DI implementation in the classroom. Therefore, the research question is what are the facilitators and barriers facing educators when implementing DI in K-12 education?

The following represents the objectives for this study:

1. To identify the facilitators for DI implementation in K-12 education.
2. To identify the barriers facing teachers when implementing DI in K-12 education.
3. To suggest ways to overcome possible barriers for implementing DI in K-12 education.

Methodology

This section describes the search and selection procedures for finding relevant literature regarding (a) the facilitators for the implementation of DI in K-12 education and (b) the barriers

preventing teachers from implementing DI in K-12 education. The search for the study was conducted in January 2022. Two searches were performed on each of the following databases: ERIC database, Education Source and APA PsycInfo.

Search and Selection Procedure

The first search used the following keywords: "differentiated instruction" AND potentials OR facilitators OR possibilities OR advantages.

Inclusion criteria:

- The search was limited to peer reviewed articles from scholarly journals.
- The search was narrowed to studies available in English published between the years 2010 till 2022.
- Studies are empirical (qualitative, quantitative, mixed methods, or meta-analyses).

Exclusion criteria:

- The articles addressing DI in "Higher Education" OR "Postsecondary Education" OR "Adult Education" OR "Preschool Education" were excluded from the study.

The search yielded 63 articles. After reading the abstracts of the 63 studies and eliminating duplicate studies, 8 articles were found to align with the current focus of the study and the research questions. Studies that suggested strategies to promote DI such as the use of blogs, games, and technological tools, and coteaching were excluded from the search and 8 articles were retained. The second search was also conducted in January 2022 using the following keywords: "differentiated instruction" AND barriers OR challenges OR difficulties OR limitations OR obstacles OR issues OR problems.

Inclusion criteria:

- The search was limited to peer reviewed articles from scholarly journals.

- The search was narrowed to studies available in English published between the years 2010 till 2022.
- Studies are empirical (qualitative, quantitative, mixed methods, or meta-analyses).

Exclusion criteria:

- The articles addressing DI in "Higher Education" OR "Postsecondary Education" OR "Adult Education" OR "Preschool Education" were excluded from the study.

The search yielded 198 articles. After reading the abstract of the 198 studies and eliminating duplicate studies, 15 articles were found to align with the current focus of the study and the research question. Articles that discussed developing technological tools to promote the implementation DI were excluded. In total, 23 studies were retained for review.

Results

For this review, 23 studies published between the years 2010 and 2022 are selected. The potentials and challenges teachers face in implementing differentiated instructions are analyzed. The percentage of study design for all the retained studies is calculated. 47.82% of the retained studies are quantitative, 17.38% are qualitative, 17.38% are mixed design, and 17.38% are literature reviews. The studies are conducted in several countries around the world including Canada, USA, Portugal, Hong Kong, Netherlands, Saudi Arabia, Qatar, Jordan, Maldives, South Africa, Nigeria, Ethiopia, Korea, India, and Norway. In general, these studies agree that teachers face several difficulties when utilizing DI with some studies focussing only on students while others discussing the numerous factors and sources that could be potentials or barriers for teachers when implementing differentiated instruction in their classrooms.

The most significant potential identified in 30.43% of the studies is teachers' positive attitudes toward DI. Teachers' positive attitudes toward DI is discussed by Aftab (2016), Brevik et al.

(2018), Maulana et al. (2020), Mengistie (2020), Wan (2020), and Whitley et al. (2019) as a facilitator for DI. Aftab (2016) and Leballo et al. (2021) indicate that there is a positive attitude toward DI among teachers which demonstrates their willingness to implement this approach. Also, teachers acknowledge class diversity and the necessity of inclusion for the success of all learners. Generally, teachers believe that DI will not only help in tending to the needs of a variety of students but also cater to the needs of students with special needs.

Besides, teachers believe that DI shifts learning away from traditional memorization and promotes students' and teachers' creativity in altering the content, the process, and the outcome. The studies also reveal that although teachers understand the importance of DI for students with different learning styles, backgrounds, interests, and learning profiles, the eagerness to implement differentiation is not visible in teachers' practices. Despite teachers' positive attitudes towards inclusion in general and DI in particular, Leballo et al. (2021) indicate that teachers have low confidence in their abilities to adapt to DI. Aftab (2016) elaborates that more experienced teachers are more likely to differentiate instructions since they demonstrate higher knowledge of the curriculum and have been exposed to more training sessions to guide them on how to use differentiation strategies.

The results also indicate that DI contributes to optimal students' outcomes. Improving students' outcome is discussed in 21.73% of the 23 articles including McBain (2018), Shareefa (2021), Lauria (2010), Manning et al. (2010), and Tobin and Tippett (2014). Shareefa (2021) and Lauria (2010) make certain that students who experience instruction matching to their needs and strength, achieve significant advancement in their learning and report a substantial increase in their scores on achievement tests. Besides, poor academic achievement is reported to be collaborated with exposing students to instructional approaches that fail to address their learning style preferences. Lauria (2010)

stresses the importance of introducing students to studying strategies and homework practices that suit their learning styles to allow learners to individualize their studying habits. Tobin and Tippet (2014) report that students appear to be more involved in differentiated classroom activities than in traditional lessons. Also, students seem more relaxed, happy, enthusiastic, and engaged when they have a choice in the assigned tasks and expected products. Improving students' outcomes through valuing their choices in learning is also echoed in Shareefa's (2021) study about DI in multigrade classes. Shareefa's (2021) analysis shows that students' learning substantially improves when DI is implemented in multigrade classes. When teachers prepare lessons at different levels, students are given academic choices according to their standards rather than their respective grades which results in a significant improvement in their achievement.

DI allows students to take responsibility for their own learning. 17.39% of the reviewed articles mention students' responsibility for learning as a potential for DI including Aljaser (2019), Lauria (2010), Melo et al. (2020), and Tobin and Tippett (2014). According to Tobin and Tippet (2014), DI calls for teachers to play the role of facilitators rather than the information dispensers. With DI, educators share the decision-making power with their students encouraging learners to take responsibility for their own learning. Students become responsible active learners when they are given the choice of creating the product of their learning to demonstrate their understanding of certain concepts. Melo et al. (2020) explain that for students to become responsible learners, teachers are required to model respect among students, set high expectations, create opportunities for student success, foster social interaction, assign tasks that match students' interests and levels of readiness, and give students choices and voices in their learning. Aljaser (2019) elaborates that accomplishing the organizational, disciplinary, physical, and social requirements of differentiated instruction allows catering to the needs of various students. Besides, with DI, learners are

encouraged to share their opinions, discuss their ideas, and acknowledge their strengths and weaknesses Therefore, DI is found to help promote students' self-confidence and self-acceptance.

DI also promotes students' positive attitudes towards learning. 17.39% of the articles discuss positive students' attitudes towards learning as a potential for DI including Aljaser (2019), Lauria (2010), Melo et al. (2020), and Shareefa (2021). Shareefa (2021) indicates that DI has many psychological benefits for students in inclusive classrooms. Learners in inclusive classrooms demonstrate more cooperation and respect towards their peers. The author also reveals that DI promotes cooperative learning strategies which call for collaboration among students of different levels and needs, to create a learning environment of acceptance and respect. Cooperative learning strategies are also found to have a positive impact on students' engagement and motivation. Such positive attitudes may be due to the positive learning environment created in classrooms where DI is implemented. According to Aljaser (2019), DI has a positive impact on students' attitudes towards learning demonstrated inside and outside the classroom since students feel that their needs and interests are seen, considered, and attended. Besides, catering to the wide range of students' needs provide learners with equal learning opportunities that increase their self-actualization and self-confidence.

Several other potentials for DI are identified in this review such as encouraging multimodal representation of knowledge accompanied with DI, promoting teacher collaboration, DI thriving on parental and administrative support, and encouraging the use of effective teaching strategies. Each of these potentials is discussed in 8.69% of the reviewed articles. In addition to other potentials that are discussed in 4.34% of the reviewed articles including flexibility of DI, allowing teachers to reflect on their pedagogical practices, promoting respect among students,

providing equal learning opportunities for all students, and assisting in identifying students' characteristics.

On the other hand, numerous barriers are found to obstruct the implementation of DI in K-12 education. Lack of time is found to be the most significant barrier identified in the review and discussed in around 65% of the retained studies. Aftab (2016), Al-Shaboul et al. (2021), Brigandi et al. (2019), De Graaf et al. (2019), De Jager (2017), Lauria (2010), Leballo et al. (2021), Maulana et al. (2020), Mengistie (2020), Onyishi and Sefotho (2020), Shareefa (2021), Siam and Al-Natour (2016), Tobin and Tippett (2014), Wan (2016), and Wan (2020) reveal that teachers are reluctant to include DI into their lessons due to shortage in the time available for preparation and planning. Time seems to be the crucial obstacle faced by teachers when implementing DI.

Aftab (2016) reports that due to lack of time teachers in developing countries, are not able to teach according to individual learning needs especially with limited classroom space, minimal teaching recourses, low administrative interest in implementing DI, and lack of modern technology. Furthermore, in the study conducted by Shareefa (2021), teachers explain how the high amount of workload required to be accomplished in a limited time does not leave much time for proper planning. In addition to the high demand for planning, teachers are bombarded with tasks that consume much of their time such as having fully packed teaching schedules, administrative work, and co-curricular and extracurricular activities conducted during and after school hours. Teachers also report that understanding students' needs and tending to students' diversity require a lot of class time and teaching material. In Wan (2016), teachers elaborate that their work is very difficult and that they often lack the time to communicate with each other to reflect on their practices. Such time must be squeezed out of their very tight schedules. Considering this heavy workload, teachers believe that the availability of time to plan and implement DI strategies

is very low and hence affecting the degree to which educators utilize differentiation (Shareefa, 2021).

Large classroom size and diversity is also reported to be an obstacle for DI. Class size and diversity are discussed in 39.13% of the reviewed studies including Al-Shaboul et al. (2021), Aldossari (2018), Cha and Ahn (2014), De Jager (2017), Leballo et al. (2021), McBain (2018), Mengistie (2020), Onyishi and Sefotho (2020), and Wan (2016). In these studies, teachers doubt the effectiveness of DI in big classes and share their difficulties in supporting individual needs when classes are large and diverse. Educators also discuss their challenges when there is a great gap between high achievers and low achievers which makes it even more difficult to match instruction with students' needs (Wan, 2016). The studies reveal that teachers are not always willing to create differentiated activities when they experience large classroom sizes and limited resources. Insufficient resources is also discussed in 39.13 % of the reviewed studies such as De Graaf et al. (2019), De Jager (2017), Leballo et al. (2021), McBain (2018), Mengistie (2020), Onyishi and Sefotho (2020), Siam and Al-Natour (2016), and Tobin and Tippett (2014). Required resources include classroom space, teaching and learning material, and technological tools that assist in utilizing DI.

Even though teachers believe in the importance of DI as a teaching approach for all learners, many still lack the knowledge and skills required to successfully operate DI strategies. The lack of teachers' knowledge and skills discussed in De Graaf et al. (2019), Mengistie (2020) Shareefa (2021) and Wan (2016, 2020) and the lack of appropriate training discussed in Aldossari (2018), Leballo et al. (2021), Maulana et al. (2020), McBain (2018), Onyishi and Sefotho (2020) are each reported in 21.73 % of the studies reviewed. The lack of understanding for differentiated teaching strategies is one of the obstacles faced by teachers when implementing DI. The reviewed studies show that teachers feel that they are not well equipped with the knowledge,

teaching theories, and practices required for DI. Besides, most teachers indicate that they did not receive suitable pre-service teacher training or quality in-service training to equip them with practical ways to use DI practices. Although teachers show great empathy when working with their students, they still do not understand the requirements needed to support the learning process of the vast variety of students present in their classrooms (Shareefa, 2021). Consequently, without appropriate training teachers find it challenging to use DI to maintain students learning progress.

Low parental support is also an identified barrier for DI highlighted in 21.73% of the retained studies including Cha and Ahn (2014), De Jager (2017), Maulana et al. (2020), McBain (2018), and Siam and Al-Natour (2016). According to McBain (2018), parents who are not supportive of new teaching methods may have strong opinions toward how their children are taught in a classroom.

Many educators face parental and community pressure when implementing DI in their classroom which makes it difficult for them to carry on with their differentiated practices. McBain (2018) gives the following example to demonstrate teachers' challenges with parents. A teacher engages his students in an interactive activity that involves online resources and various media to represent learning outcomes.

Although this activity is engaging to students, some parents may question the assignment due to the use of computers rather than traditional textbooks and worksheets. Many parents expect their children to be educated the same way they received their education years ago. Consequently, teachers are expected to deal with parental pressure while implementing DI. This is not an easy task, causing some teachers to give up on their new practices and others to use engaging resources to help support their students' learning and overcome divisional and social boundaries.

Several other barriers for DI are identified from the retained studies. Heavy teaching load is discussed in 17.39% of the studies. Besides, teachers' insecurities with new practices, curricular and assessment demands, lack of teachers' knowledge on students' readiness, lack of organizational support, and teachers' beliefs towards the effectiveness of DI are all barriers highlighted in around 13% of the reviewed studies. Additionally, around 4% of the studies discuss students' inabilities to apply DI, difficulties in classroom management when using DI, catering for weak students while ignoring the needs of high achievers, and misconceptions on DI as barriers that obstruct the utilization of DI in today's classrooms.

Furthermore, the identified barriers can be grouped into two main categories: intrinsic and extrinsic barriers. Intrinsic barriers refer to barriers teachers face within themselves when implementing DI including lack of teachers' skills and knowledge, teachers' insecurities with new practices, lack of teachers' knowledge about their students' readiness, personal beliefs, difficulties in classroom management, catering for weaker students while ignoring advanced learners, and misconceptions about DI. On the other hand, extrinsic barriers refer to barriers beyond teachers' control including lack of time, class size and diversity, lack of resources, lack of training, low parental support, heavy teaching workload, curricular and assessments demand, lack of organizational support, and the inability of students to apply DI.

Conclusion

Teachers have a very complicated job acknowledging the diversity in students' needs within their changing classrooms, implementing best practices to engage and motivate students, and overcoming the barriers they face to assist their learners in achieving their full potentials. Educators are expected to identify their students' potentials beyond the surface and operate with the correct educational tools to ensure students' engagement and academic achievement. Besides, teachers must overcome all the

obstacles they encounter while educating their students on how to get over their own learning difficulties. While working with their students, teachers are also required to ensure that learners are not only blooming academically but also emotionally and socially. Additionally, students should always feel that they are cared for, appreciated, and accepted for all their differences. Thus, teachers are expected to understand all their students' needs and support them with the appropriate resources to help build upon their potentials to compensate for their weaknesses and ensure their readiness for their future beyond the school settings (McBain, 2018).

The results of this review show that there are several potentials and challenges accompanied with the implementation of DI in K-12 classes. The potentials of DI are mostly due to teachers' positive attitudes towards DI, the flexibility of DI, and its ability to identify students' characteristics and provide equal learning opportunities to all learners. Other potentials include promoting respect among students and improving students' responsibility and positive attitudes towards learning. Besides, DI is found to improve students' outcomes when teachers use effective teaching strategies and encourage multimodal representation of learning. DI is also found to thrive on parental support and teachers' collaboration providing educators with an opportunity to reflect on their practices and share their experiences.

This review also pinpoints multiple barriers for DI including lack of time, resources, training, parental and administrative support, low teachers' knowledge and skills in regard to DI practices, and lack of teachers' knowledge about their students' levels of readiness. Besides, large class sizes, heavy teachers' workload, curricular demands, teachers' beliefs and insecurities with DI practices and classroom management, and DI misconceptions are also essential factors obstructing the implementation of DI. DI is also found to be difficult to utilize by teachers due to students' inabilities to apply DI and teachers' increased tendency to cater to weak students while ignoring the needs of high achievers.

The challenges identified in this review can be classified into governable and non-governable factors. Governable factors refer to the barriers that teachers can control or modify, whereas non-governable factors refer to the factors that are beyond teachers' control (Lavania & Bt Mohamad Nor, 2020). All intrinsic factors are considered governable factors since there are multiple ways teachers can facilitate these barriers and turn them into learning opportunities. For instance, lack of teachers' knowledge about DI. To overcome this barrier, teachers can use resources available online to educate themselves on DI strategies feasible in their classrooms. However, some extrinsic factors are governable while others are not. For example, lack of time and recourses and the ability of students to use DI can be overcome by teachers if they rearrange their priorities and invest time in finding resources that will facilitate their work with differentiation. Besides, teachers can educate students on the importance of DI, familiarize them with the flow of differentiated lessons, and train them on DI strategies such as working in different types of groups. However, other extrinsic barriers are non-governable such as class size, lack of training, low parental support, heavy workload, curricular and assessment demands, and lack of organizational support. These barriers are out of teachers' control and are mostly managed by school administrators and school boards.

Recent calls for remodeling the education system stress the importance of personalized learning. Within the personalized learning framework, great attention is given to enhancing student learning through making connections to their interests, experiences, knowledge, and skills. These aspects are also key components of the DI model, making it an all-inclusive approach effective for actualizing personalized learning. Research indicates that differentiated practices enhance the likelihood of meeting the needs of students who find literacy learning challenging (Tobin & Tippett, 2014). Thus, to ensure the effective implementation of this approach, great attention should be given to the challenges faced by all stakeholders. In Ontario,

the Ministry of Education supports the implementation of DI and stresses its significance in Learning for All (2013). Teachers in Ontario are encouraged to modify instruction to suit students' interests, levels of readiness, and learning profiles. In addition, Learning for All (2013) encourages using flexible grouping and focusing on the true meaning of DI such as providing instructions and assessments that challenge students at the right level, adopting different forms of grouping to facilitate learning, and utilizing the results of authentic assessments to modify teaching and learning strategies. However, teachers in Ontario, just like educators all over the world, face major difficulties when utilizing DI.

Undoubtedly, positive expectations and mindset among all stakeholders involved in education including administrators, parents, teachers, and students will develop positive teachers' attitude towards differentiated instructions. However, all these expectations will crash if teachers do not receive the support they need. The responsibility of utilizing DI strategies does not only fall on teachers, collaborative efforts among all involved stakeholders are needed to make progress possible (Aftab, 2016).

Given the current findings, several recommendations emerge. First, there is an urgent need for school administrators to embrace new teaching strategies and promote teachers' participation in students learning to support and encourage the implementation of DI across all grade levels and subjects. Hence, educating principals and education supervisors on the significance of DI is a necessity to encourage teachers to use modern teaching strategies such as DI in their classrooms. Second, opportunities for teachers' training and development are necessary. Teachers need job-embedded professional development and training that focus on teacher collaboration. Training should be designed to empower teachers to make informed decisions when using DI strategies. Teachers need training sessions that not only discuss the benefits and the theories behind this approach but also focus on practical ways to

plan their lessons and differentiate instruction. According to the results in this review, teachers do not usually have enough time and opportunities to collaborate with each other and engage in planning differentiated lessons and preparing activities and assessments when using DI. Hence, teachers should be motivated to participate in reflective dialogues to solve problems, share, and exchange ideas with their colleagues (Wan, 2020). Furthermore, teachers' perceived barriers should be considered to facilitate DI through restructuring curriculum management, reformulating teachers' timetables, and allocating resources and manpower to sufficiently facilitate the implementation of differentiation (Wan, 2016).

For pre-service teachers, research has explored the effectiveness of congruent teaching, where university professors demonstrate DI practices in their courses to help new teachers develop positive beliefs towards DI and promote the understanding of DI strategies. Besides, new or resistant teachers should be given the opportunity to observe the practices of teachers who successfully implement DI to understand the potentials of this approach in addressing students' various learning needs. This is particularly important to allow teachers to share subject and level-specific practical approaches to address any of the widespread misconceptions about DI (Whitley et al., 2019).

Limitations of the Study

The most salient limitation of this literature review is that the methodologies of the retrieved studies were not reviewed prior to the selection process. In addition, only one researcher performed data extraction and reviewed the articles at the data collection stage to determine the compatibility of the articles with the main focus of the study and the research question. For future studies, it is recommended that at least two researchers review the articles to determine their eligibility for the review.

Given the importance of this topic, it is crucial to note that there are still only a few studies aiming at identifying the challenges that teachers face when implementing DI in K-12 education. More studies targeting teachers from various countries around the world should be conducted to examine the challenges hindering DI. It is a fundamental step to take as the full potential of DI can only be seen if most of these barriers are eliminated. Additional research is also recommended to investigate and monitor the variation in teachers' implementation of DI before and after training sessions. This will identify what modes of training and teacher development workshops are best to improve teachers' use of DI and help overcome the barriers.

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RELATIONSHIP BETWEEN ANXIETY, DEPRESSIONAND QUALITY OF LIFE AMONG SPINAL CORD INJURY PATIENTS OF EARTHQUAKE

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Abstract

The present study was aimed to investigate the relationship between Depression, Anxiety and Quality of Life among spinal cord injury patients of earthquake October 8, 2005 in Pakistan. A sample of 70 patients including male (n = 35) and female (n = 35) was selected. Purposive convenient sampling technique was used to select the sample. The Urdu version of Hospital Anxiety and Depression Scale (Tareen 1983) and World Health Organization Quality of Life Scale(Khan, Akhtar, Ayub, Alam & Laghari 2003) and Demographic Sheet was administered on the present sample. Significant negative relationship was found between the anxiety, depression and quality of life. A significant difference of quality of life among male and female patients was also found. No significant difference was found on anxiety and depression of male and female patients. The results also indicated that the depression and Anxiety in Spinal Cord Injury patients of earthquake are the important predictors for lower quality of life.

Key Words

Anxiety, Depression, Quality of life, Spinal Cord Injury Patients ofEarthquake.

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Introduction

Since the beginning the human beings are facing trauma and disasters and they always are on the pity of the natural disasters like as tsunami, earthquakes, storms, floods, wars, epidemics and terrorism etc. And these usually reminds to human about their risk. Recently it has got attention of the world due to itsdrastic affects in different perspectives. Natural disaster affects people in many ways like as loss of relatives, friends, neighbours and family pets etc. But in some disasters the people may also lose their income, home, property and important belongings. Disaster is an occurrence that results as misery of human beings and it can also create opportunity for improving the quality of life of the affectees. Frequent disasters happened in Asia during the years of 1990s and it was noted that extra than two-third deaths were occurred by those disasters.

Disasters are worldwide phenomena whose are associated with mental and physical trauma of related community. Common populations usually face the deaths family, threats of life and enormous destruction in ecological system. Any calamity for human loss can cause for mental or psychosomatic train and usually survivors needs to recollect or restart their new life.

A high degree earthquake on 7.6 Richter scale hutted to Pakistan on October 8, 2005 which caused for wide ranging loss along with around about 81,000 deaths of the people. Additions to those 3.290 million citizens were on the streets and left wounded and near to 990 hospitals were smashed. This tragedy of thousands deaths and loss became risk for infectious diseases as well as psychological disorders for survivors of earthquake. Insensitive weather of winter was also major source for taking of proper action in this emergency phase (WHO, 2005).

The October 8, 2005 earthquake has also caused long-suffering, immense disastrous effects on lives of individuals and resulted in large number of disabilities. The most common disabilities after earthquake were spinal cord injuries and amputation. 741

patients were identified as Spinal cord injured patients and approximately 600 patient paraplegics (WHO, 2005). See comment 1 and Spinal cord injury (SCI) was the devastating traumatic effect on the victims of an earthquake Pakistan. Mostly SCI patients have to live with health related problems like as bladder& bowel control, bone fractures and psychological issues (e.g., Major depression, Adjustment problems, and post-traumatic stress disorder), pressure ulcers, and mobility and financial as well. This massive trauma created a lot of psycho-social and emotional problems for affectees.

Earthquakes occur without any warning and quickly strike to population and it its cost present lot of psychological and health problems for large of population which leaves injury, deaths areas and destruction. After earthquake, the survivors can be at high risk for psychological problems. Depression is very common psychological problem and mood variations lie as poor interest in life, negative perception, low self esteem and worth, disturbance in sleep and negative as well as suicidal thoughts. These problems can be severe in nature and the same can be dangerous for the use of the abilities of the individual for performing the day to day responsibilities. In severe depression the sufferer can do suicide. Every year 850,000 thousand lives loss is associated with this tragic fatality (WHO, 2010).

Anxiety is a result of the psychological, social, economic and physical feelings when any one is under stress. It also helps for driving to take action for accomplishment the task if it becomes high the than it can result us being unable to perform anything in daily activities (WHO, 2001). "Anxiety is a generalized mood condition that can often occur without an identifiable triggering stimulus. As such, it is distinguished from fear, which occurs in the presence of an observed threat. Additionally, fear is related to the specific behaviors of escape and avoidance, whereas anxiety is the result of threats that are perceived to be uncontrollable or unavoidable" (Ohman, 2000).

World Health Organization (1993) explained QOL as "it is perception of individual regarding cultural values and their own living organism in relationshipwith hopes or thoughts of goals in existence. Word QOL is used in very broad range including the healthcare, politics and international development. It should not be counted only for income and standard of living but it should also be interlinked with social, physical, environment and mental health. Middleton, Tran, & Craig (2007) seen an increased and reduction of QOL through the low self-efficacy and pain intensity and different researchers also find out short QOL in SCI individuals through the comparison of matched group.

Laing & Chase (1995) described that QOL is a main term which covers several themes and factors like as perception of physical health, psychological healthand emotional well- being. Relationship with others and sexual satisfaction is also an important consideration. Many factors of QOL are related to health concepts and similar components are related to assessment and purpose of success in the field of medical rehab. Especially in the field of SCI, research related to QOL is at infancy stage. On the basis of the literature review, following hypotheses are formulated:

H1. There is a negative relationship between Depression and Quality of life.

H2. There is a negative relationship between Anxiety and Quality of life.

Method

Participants

The sample of 70 Spinal Cord Injured patients (35male &35female) was selected purposively, from National Institute of Rehabilitation Medicine, Islamabad. Demographic details of the sample included age, marital status, no of deaths in family and

experience. The age range of these participants was 25 years to 60 years.

Instruments

Adapted version of Hospital Anxiety and Depression scale in Urdu by I.K.Tareen was used in present study and originally Hospital Anxiety and Depression Scale (HADS) was developed by Zigmond and Snaith in 1983. It is a 14 items scale and works for two subscales i.e. anxiety and depression. Alpha reliability was found .79, which shows that it is a reliable scale for assessment of Anxiety and Depression in Spinal Cord Injured patients in the present study.

The scale used for quality of life was WHO Quality of Life Scale. Adapted and Urdu translated version of World Health Organization Quality of Life Scale (Khan, Akhter, Ayub, Alam & Laghari, 2003) was used in this study. The WHOQOL scale consists of 26 items. Items 3, 4,10, 15,16,17, and 25 represents satisfaction with physical functioning, items 5, 6, 7, 11,18 and 26 represents psychological dimension, items 19, 20, 21 represents social dimension whereas items 8, 9,12, 13, 14, 22, 23 and 24 reflects satisfaction with environment. The scale was originally developed by WHO in 2003 (Power, 2003). The Alpha reliability and Item total correlation was computed to assess the reliability of the scale. Alpha reliability of the scale was found to be .81, which indicated that it is a reliable scale for assessing quality of life in Spinal Cord Injured patients.

Procedure

Permission was taken from the hospital authority for data collection and then the purpose of psychological testing was explained to the patients. After that verbal as well as written consent for data was taken from the patients for the current study. Wards for the male and female spinal cord injury patients were separate and it was very difficult to apply the all instruments in one session due to rehabilitation activities, their

injuries and infections as well so scales were applied in two sittings on each participant. The data was analyzed through SPSS.

Results

The present study was carried out to explore the relationship between anxiety, depression and quality of life among spinal cord injury patients of earthquake. Descriptive statistics and alpha reliability are computed for all study variables. Finally, Pearson correlation was applied to test the hypotheses.

Table 1

Mean. Standard Deviation and Alpha Reliability coefficients for allStudy Variables (N = 70)

Variables	***α***	***M***	***SD***	***Min***	***Max***
1. Depression	.830	17.90	3.30	9	25
2. Anxiety	.520	17.47	2.40	12	22
3. Quality of life	.775	65.52	12.69	30	93
4. Physical Quality of life	.790	19.63	4.56	10	30
5. Psychological quality of life	.663	8.75	2.95	3	15
6. Social quality of life	.712	16.40	4.13	6	24
7. Environmental quality of life	.603	20.82	4.44	7	29

Table 1 shows Mean, Standard Deviation, Alpha Reliability coefficients and zero-order correlation among study variables. The alpha coefficient ranges from .52 to .83 that indicates that all scales that have been used in the result have acceptable internal consistency.

Table 2
Zero-Order Correlation for all Study Variables (N = 70)

Variables	1	2	3	4	5	6	7
1.Depression	-	.214*	-.122*	-.366**	-.117*	-.111*	-.059*
2.Anxiety		-	-.352**	.240*	-.286*	-.262*	-.147*
3.Quality of life			-	.260**	.652**	.787**	.605**
4. Physical				-	.365**	.517**	.442**
5. Psychological					-	.874**	.587**
6. Social						-	.863**
7. Environmental							-

Pearson correlation indicates that depression has significant positive correlation with anxiety (r = .21, p < .05) and significant negative correlation with quality of life (r = -.12, p < .05), physical quality of life (r = -.36, p < .01), psychological quality of life (r = -.11, p < .05), social quality of life (r = -.11, p < .05) and environmental quality of life (r = -.05, p < .05) . Anxiety has significant negative correlation with quality of life (r = -.35, p < .01), physical quality of life (r = -.24, p < .05), psychological quality of life (r = -.28, p < .05), social quality of life (r = -.26, p < .05) and environmental quality of life (r = -.14, p < .05). Quality of life has significant positive correlation with physical quality of life (r = .26, p <.01), psychological quality of life (r = .65, p < .01), social quality of life (r = .78, p < .01) and environmental quality of life (r = .60, p < .01). Physical quality of life has significant positive correlation with psychological quality of life (r = .35, p < .01), social quality of life (r = .51, p < .01) and environmental quality of life (r = .44, p < .01). Psychological quality of life has significant positive correlation with social quality of life (r = .87, p < .01) and environmental quality of life (r = .58, p < .01). Social quality of life has significant positive correlation with environmental quality of life (r = .86, p < .01).

Discussion

It is studied that individual exposed to severe trauma like earthquake having severe psychological problems. Major psychological issues after earth quake were depression and anxiety. Un-disposed debris, destroyed buildings, makeshift shoddy homes, and absence of family members effect the mental health of the affectees and served as ongoing reminders of earthquake-related trauma.

The results of the present study conclude that Spinal Cord injured patient due to earthquake had symptoms of depression and anxiety. Previous researches shows that after disaster greater intrusive re-experiencing was associated with greater depression and anxiety. It was studied that higher the intensity of exposure and the fact of bereavement higher will be the psychological issues (Joseph, Yule & Williams, 1994). Another study revealed that Co morbid depression occurred in 44.5% of PTSD patients at 1 month and in 43.2% at 4 months.

Physical ability and social interaction are the main sources for increasing the QOL and it can contribute better for living with disability which is lifelong problem and the disabled are most neglected population. It revealed from the study that male patients have low level of QOL other than female patients. After Spinal cord injury the quality of life is considerably more negative, because knowledge and attitudes towards disability may influence patient's health. After Spinal Cord Injury struggling with critical treatment decisions, emergency care providers and secondary trauma victims are not aware of outcomes, well-being, and life satisfaction.

Present research findings supported that higher the depression & Anxiety in Spinal cord injured patients lower will be the Quality of life. In present study all the four dimensions physical, psychological, social and environmental domains of quality of life was negatively correlate with depression and anxiety.

After Chi-Chi earthquake, a study was conducted and QOL was assessed through the use of questionnaire of WHOQOL-BRIEF. It was identified that those survivors have poor quality of life who have complete loss of their homes and relatives and on other those survivors having higher level QOL who are good at social relations (Huang , Lin, Huang , Chiu, Tsai , 2002).

A study was conducted in a Taiwanese community after 1999 earthquake, to investigate the relationship between quality of life and psychiatric impairment. Psychiatric impairment rated moderate to severe was assessed for 34.3% of the responding residents. Study results shows that greater the severity of the psychiatric impairment, the lower will be the quality of life, for both the physical and mental aspects (Chou , Chou , Su , Ou-Yang , Chien , Lu , Huang, 2004).

The present findings indicated that there is significant negative relationship between Anxiety, Depression and quality of life of the spinal cord injury patients of the earthquake was found. Literature and scientific researches also supportedto this study.

Limitations

The sample size was too small; data was collected from only particular population admitted in the rehabilitation unit which is not representing the whole population. So, present study could not be generalized to the whole population. Other affected secondary victims SCI patients of the earthquake affected area should also be included in the study. Personality factors are required to consider as another factor to affect the Quality of life.

Recommendations

Community based psychological trauma management centers should be established and cultural based interventional techniques must be introduced for psychological support to the survivors of any disasters. Psychological first aid and others psychological therapeutic techniques like supportive therapy,

play therapy, cognitive behavior therapy, grief-focused psychotherapy, counselling, stress management and drugs of efficacy may be introduced.

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INCLUDING SPECIAL NEEDS STUDENTS IN OPEN DISTANCE LEARNING: PREREQUISITES AND MODEL FOR OPEN UNIVERSITIES

ZAHID MAJEED[1]

Abstract

More than 1 billion (15% of world population) people around the world live with disabilities (WHO & World Bank, 2011). In Pakistan 2.49% of total population is suffering with disabilities (Govt. of Pakistan, 2010). Only 1% of the 2.49% are in schools and the rest are with no educational opportunities. Traditionally, special education required a high teacher-to- student ratio, customized instructional materials, special equipments and training. However, in recent years, students with special needs have moved into the Open Distance Learning system. With the advent of technological advances, especially in adaptive devices to attach to computers, these students have become much more independent and capable of communicating through their computers, particularly via modems or on the Internet. In this study the researcher explored the prerequisites of ODL to include the students with special needs. The researcher also suggested a model how to include the disabled students in ODL. The Allama Iqbal Open University (AIOU) is one of the largest university in Pakistan and world with respect to number of students. The Open Distance Learning system is an option for the special needs students/population in Pakistan. The formal schools and universities are with less or no facilities to accommodate the special needs student in their system that's why very few students are in these institutions. The present study purpose was to explore the educational opportunities for the special needs students at Open Distance Learning System. The study was conducted to find out the trend and attitude of special needs students towards ODL system. Also the study investigated the willingness, motivation and attitude of ODL system's

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academicians to accommodate the special need students. The researcher also explored the facilities and provisions available for the special needs students at AIOU. The special students in the special schools or pass out were the population of the study. Mostly blind, hearing impaired, learning disabled, physically disabled and autistic students were included in the study. The researcher used the questionnaire and interview as tool to collect the information.

Introduction

Around the world more than 1 billion (15% of world population) people live with disabilities (WHO & World Bank, 2011). In Pakistan 2.49% of total population is suffering with disabilities (GOP, 1998). Only 1% out of the 2.49% is in schools and the rest are without any education (Majeed, 2008). Traditionally, special education required a high teacher-to-student ratio, customized instructional materials, special equipments and training. However, in recent years, students with special needs have moved into the general stream of education. With the advent of technological advances, especially in adaptive devices to attach to computers, these students have become much more independent and capable of communicating through their computers, particularly via modems or on the Internet. The Open & Distance Learning (ODL) system is so flexible for all the learners included learners with special needs through adaptive and assistance devices.

The Allama Iqbal Open University is a university providing opportunity of education from primary to higher education/tertiary education to students with special needs. Every year 50-100 students are enrolled in AIOU in different programs (AIOU, 2011). The students with special needs required special attention and devices to meet their special needs. The ODL system is an option for them where their needs can be met with some changes. The formal system of education from primary to secondary and higher education is not conducive or not welcome them due to provisions and facilities they required.

In ODL research very few studies have been conducted to find out the pre-requisites for the inclusion of special needs students in Open & Distance Learning system. Unfortunely very few open universities addressed, planned or provide the access and opportunities to the students with special needs. The researcher tried to explore the opportunities for the special needs students in ODL. It was the day of 24th AAOU conference the researcher discussed the issue with Dr. Wong and encouraged to explore it for the next conference in Malaysia. Because the researcher himself involved with the students with special needs in formal and ODL system, therefore the pre-requisites to include special need students were explored or find out by the researcher in 2011.

The Allama Iqbal Open University (AIOU) is one of the largest university in Pakistan and world with respect to number of students. The Open Distance Learning system is an option for the special needs students/population in Pakistan. The formal schools and universities are with very less or no facilities to accommodate the special needs student that's why very few students are in these institutions. The study main aim was to explore the educational opportunities for Universities the special needs students through Open Distance Learning System. The study was conducted to find out the trend and attitude of special needs students towards ODL system. Also the study investigated the willingness, motivation and attitude of Open Distance Learning system academicians to accommodate the special need students in the ODL. The researcher also explored the facilities and provisions available for the special needs students. The special students in the special schools or pass out were the population of the study. Mostly blind, hearing impaired, learning disabled, physically disabled and autistic students were included the in the students. The researcher used the questionnaire and interview as tool to collect the information. The researcher suggested a model for the ODL to accommodate the special needs students at Open Universities.

Literature

A successful distance-learning program must not only utilize cutting-edge technology, it must also encourage the development of innovative methods to address the needs of special populations. Changing demographics within the state of California have forced educational institutions to re-examine existing distance learning programs, in many cases, developing new models to meet the requirements of culturally diverse learners. At the same time, institutions are realizing the potential of the Internet and other forms of distance-learning delivery to reach entirely new populations. The ability to bring together diverse individuals in virtual classrooms provides unique opportunities for innovative instruction. This paper explores concerns and the potential for innovation related to the delivery of distance education to multicultural populations.

Researchers have documented many of the unique learning characteristics of minority students. Sanchez and Gunawardena (1998) examine differences between Western and non- Western perspectives, finding that non-Western students tend to prefer group activities, collaborative projects, and increased social interaction. Anakwe et al. (1999) concur, arguing that multicultural learners emphasize relationship building over competition. Arias (2000) also supports this observation and cites a study performed with Asian students at the University of California, Berkeley, that found students who study in groups achieve higher test scores than those who study independently.

The better the experience and the more intentional the results, the greater is the likelihood that learning will occur. In reflecting on the importance of design in software development, Kevin Mullet (Wagner 2005) has noted that early software users were themselves programmers and consequently were highly tolerant of complex interactive models and primitive visual displays. Today's users are very different. Interactive software is now considered useful only to the extent that ordinary users can understand and take advantage of the functionality it provides.

Looking at it from a learning-oriented perspective, when technology can help strengthen learner motivation, focus attention, make a learning moment more memorable, or demonstrate the relevancy of learning to performance, the greater is the likelihood that technology will have a direct positive effect on learning. To this end, one exciting possibility of the coming mobile movement is an opportunity for a sharper focus from instructional technology and instructional design programs on the value of experience design for learning.

Online distance education can help people learn in the way that best suits their preferred method of learning (The SALT Project 2002). This can help strengthen the input that a learner feels helps them the most, and lets the student focus on their learning. This should also apply to the students with special needs; to discount their weaknesses which can be done by the use of accessibility tools (The SALT Project 2002).

Distance education and distance learning as defined by Keegan (Keegan1996) are well-established concepts. The distance learner is a person who, for some reason, will not or cannot take part in educational programmes that require presence at certain times or places. Terms such as „e-learning" and „m-learning" are now very common and can for our purposes be described as different methods that both are subsets of distance education.

Conventionally, special education required a high teacher-student ratio (standard is 1:8), modified instructional materials, special equipment (adaptive and assistive devices) and training. However, in recent years, the students with special needs moved into the mainstream of education. The students with disabilities or special needs are more independent and capable of inter/intera communication through their computer and internet (Parfitt, 1998). Multimedia in education has been benefit of being able to support many modes of learning through graphics, sound and video clips in an interactive way. However, using multimedia in special education is not simply a matter of interesting these clips.

It needs to be done within a learning structure. In addition, multimedia can provide a distance learning system that can address problems of funds, time and participation (Nguyen et. al., 1996). Flexible system deliver associated with education computing technologies may improve the learning process in cost effective ways. This method can also increase access to educational opportunities for classified students and it can facilitate participation for both the teachers and students.

There are several downsides to educating special need students in not special school settings. First, they did not get interaction with Universities their peers. This could lead to social problems now and in the future. Another downside is that they will not get instant feedback as they would in a classroom. Distance education provides a different type of learning that can't be achieve in a typical classroom setting. There are many positive and negatives with it just as they would be better off learning online. The decision should be made because the student will earn a better education. The parents and students need to make the decision based in what works best for them.

Distance education began with a concern to reach the individuals who could not attend regular classes and the case is same with the students with special needs or disabilities. Distance education in the form of correspondence teaching means teaching through printed materials and with the support of ICT. It has a long history, over one hundred years (OER, 2011). The developed countries like USA, UK, Sweden and Germany were offering the courses through ODL system during the 19th century; therefore the ODL is not a new concept. The ODL specified or preferred by the individuals in the job or those (adults) who left the train of education by one or other reason.

Statement of the Problem

In the light of literature review as well as personal experience, the current study titled as "Including Special Needs Students in

Open Distance Learning: Prerequisites and Model for Open Universities" was designed.

Objectives of the Study

The objectives of the study were:

- To find out the pre-requisites for the inclusion of special needs students in ODL system.
- To explore the educational opportunities for the special needs students at Open Distance Learning System.
- To recommend a Model for Open Universities to meet the special needs of the students in ODL system.

Significance of the Study

The study is unique in nature that the open universities very rare think and plan to accommodate the special needs students. This study guided the ODL's experts, planners, administrative authorities and academicians to consider the requirements and needs of disabled/special needs student in the distance education. The study will also be helpful to those open universities already accommodating special needs students by assistive adaptive devices recommended in the study. The recommended model based on the current infrastructure and philosophy in special education and the perceived benefits of multimedia to meet the needs of the students will be helpful to all the stakeholders included special needs students. The researcher explored the possibilities and opportunities for the special needs students who are capable of tertiary study, but have no or very few opportunities in formal/mainstream universities, colleges and schools.

Methodology

The study was descriptive in nature survey method was adopted for collection of data. The mixed research approach quantitative and qualitative was adopted. The population of the study was special needs students already enrolled in different programs of AIOU and students wish/willing for the admission in Open Distance Learning system. The instruments for the collection of

the data were questionnaire and interviews. The sample of the study was 20 students with visual impairment, 5 students with hearing impairment, 12 students with physical handicapness and 3 students with learning disabilities. All the students selected for the sample were volunteers from the population; therefore the convenient based sampling technique was used. The questionnaires were based on literature review i.e. distance education and special needs students requirements.

The researcher developed separate questionnaire for each disability mentioned above i.e. Hearing impaired, physical handicap, learning disabled, and visually impaired. The questionnaires were closed ended and 15 questions were included in each questionnaire. The questionnaire addressed the disability, level of disability, formal education experience, special needs, assistive technology/devices, tutorial support, content and evaluation system. The researcher also conducted semi-structured interviews from the 07 special needs students. The questions for the interviews were based on distance education with special teaching methods, Special Educationist/ Professionals for Hearing Impaired people/students/children, Assistive Technology/Devices, Tutorial Support (Face to Face and Online), Modified Contents, Evaluation according to disability/special needs.

The questionnaire validity is always question mark on the instrument. The researcher collected the experts' opinion about the format and content related to distance education, disability and special needs of disabled. The experts' opinion helped in structural/face and content validity. The researcher modified and incorporated the changes suggested or recommended by the ODL and special education experts. The data collected through questionnaire was analyzed through SPSS and data of interviews was analysed by discourse analysis (qualitative analysis). The data was analyzed in frequencies, percentage and mean. The mean was used for the pre-requisites and important components of the suggested model.

Results

Table 1
Responses of Hearing Impaired Students N=05

Pre-Requisites	YES		NO	
	f	%	f	%
Distance Education with Special Teaching Methods	04	80	01	20
Special Educationist/ Professionals for Hearing Impaired people/students/children	04	100	00	00
Assistive Technology/Devices	03	60	02	40
Tutorial Support (Face to Face and Online)	03	60	02	40
Modified Contents	01	20	04	80
Evaluation according to disability/special needs	05	100	00	00

The table reveals the responses of hearing impaired children on the pre-requisites in ODL to accommodate them with respect to their special needs. The results reveal that the majority of the hearing impaired are interested in distance education system of Open University. Also required assistance from the special educationist, speech therapist and sign language expert. They responded that the assistive technology like FM system, hearing aids and speech/auditory trainer in ODL. Majority of the Hearing Impaired responded that the online tutorial support will be helpful for them. The very few responded recommended modified contents of ODL but all agreed on that the evaluation should be according to the special needs.

Table 2
Responses of Visually Impaired Students N=20

Pre-Requisites	YES		NO	
	f	%	f	%
Distance Education with Special Teaching Methods	20	100	00	00
Special Educationist/ Professionals for Visually Impaired people/students/children	13	65	07	35
Assistive Technology/Devices	20	100	00	00
Tutorial Support (Face to Face and Online)	12	60	08	40
Modified Contents	20	100	00	00
Evaluation according to disability/special needs	20	100	00	00

This table highlights the responses of visually impaired children for the pre0requistee to include them in ODL system. All of them are willing to be in ODL and have education from the open universities. Almost 65% required help or assistance from the professionals related to their special needs. The assistive or adaptive devices are very important for them like magnifiers, talking softwares, braille and CCTV; therefore 100% required these devices in ODL for their learning. The ODL system is not only the correspondence or traditional book reading system, in recent years a revolution is there by internet and online access/link. The responded needs blend type of tutorial support i.e. online and face to face. The braille is best option with talking books for the visually impaired children; therefore 100% responded requested content or syllabus in braille that they can read independently. The same percentage i.e. 100% requested the evaluation or examination according to their special needs e.g. examination in braille, audio recording, assistant for writing and use of computer.

Table 3
Responses of Learning Disabled Students N=03

Pre-Requisites	YES		NO	
	f	%	f	%
Distance Education with Special Teaching Methods	02	67	01	33
Special Educationist/ Professionals for Learning Disabled people/students/children	03	100	00	00
Assistive Technology/Devices	02	67	01	33
Tutorial Support (Face to Face and Online)	03	100	00	00
Modified Contents	01	33	02	67
Evaluation according to disability/special needs	03	100	00	00

The above table illustrates that 67% of learning disabled students willing to be in ODL system if the ODL adopt special teaching methods according to their special needs (for reading and writing). All of them 100% need assistance or help from the special educationists or professional help them in reading, writing or mathematical concepts through ODL system. The 67% respondents need assistive devices like word processors with spell checkers and dictionaries text- to-speech and speech-to-text programs, talking calculators, books on tape, computer-based activities. All 100% respondents need face to face support under tutorial support. The respondents 67% responded that they don't need any modification in content but syllabus should be supported with assistive devices. The 100% respondents requested/asked modified testing services and modified assignments for the courses.

Table 4
Responses of Physically Handicapped Students N=12

Pre-Requisites	YES		NO	
	f	%	f	%
Distance Education with Special Teaching Methods	12	100	00	00
Special Educationist/ Professionals for Physical Handicapped people/students/children	02	17	10	83
Assistive Technology/Devices/Equipments	03	25	09	75
Tutorial Support (Face to Face and Online)	10	83	02	17
Modified Contents	00	00	12	100
Evaluation according to disability/special needs	02	17	10	83

The table above depicts that 100% physically handicapped respondents wish or willing to have or continue their education through Open & Distance Learning system but teaching methodology should meet their special needs. The 83% responded that they don't need any help from the professionals, only 17% required professionals' assistance due to muscular dystrophy problems. Almost 75% responded that no need of assistive devices except wheel chairs, crunches and braces. The 83% physically handicapped students need online tutorial support due to mobility problems to reach at tutorial venues. All the 100% physically handicapped students responded no need of modified content and only 17% requested for the modified evaluation due to their fine-motor and gross- motor skills problems. .

Table 5
Mean of Pre-Requisites

Pre-Requisites	Table 1	Table 2	Table 3	Table 4	Mean
Distance Education with Special Teaching Methods	04	20	02	12	9.5
Special Educationist/ Professionals for Physical Handicapped people/students/ children	04	13	03	02	5.5
Assistive Technology /Devices / Equipments	03	20	02	03	7.0
Tutorial Support (Face to Face and Online)	03	12	03	10	7.0
Modified Contents	01	20	01	00	5.5
Evaluation according to disability/special needs	05	20	03	02	7.5

The table 5 indicates the mean of each factor of pre-requisite for the inclusion of special needs students in open distance learning system. The mean of each factor reflect the importance in the suggested model for the ODL system. The researcher set the 5.0 mean as minimum value of pre-requisite to consider it in the model. All the means are above the set value i.e. 5.0; therefore all the pre- requisites are the part of suggested model.

Analysis of Interviews

The qualitative data, consisting of words, can be analysed logically and systematically. The researcher organized by first shaped the data into information, interpret and summarize the

information and then explained the information. The researcher conducted the interviews from the 07 students with special needs. Out of total 07 students, 02 physically handicapped, 02 hearing impaired, 02 visually impaired and 01 with learning disability. The questions developed for the interviews were the same areas addressed in questionnaire that if the respondents want to explain more about the questions asked in questionnaire can explain or elaborate in details.

Table 6
Content Analysis of Semi-structured Interviews (n=7)

Pre-Requisites	Responses of Hearing Impaired, Visually Impaired, Learning Disabled and Physically Handicapped Students
Distance Education with Special Teaching Methods	All the students willing to get admission or continue their education through Open Distance Learning system. Other comments about ODL system for the special need students were noted as follows: "I felt more comfort in Open University because of acceptability and non-discrimination" (Visually Impaired Student). " The ODL system modified the content according to my special needs" (Learning Disabled Student" Informative "I came to know at the time of admission that AIOU adopted modified teaching methods for special need students e.g. total communication method for hearing impaired children". (Hearing Impaired Student)

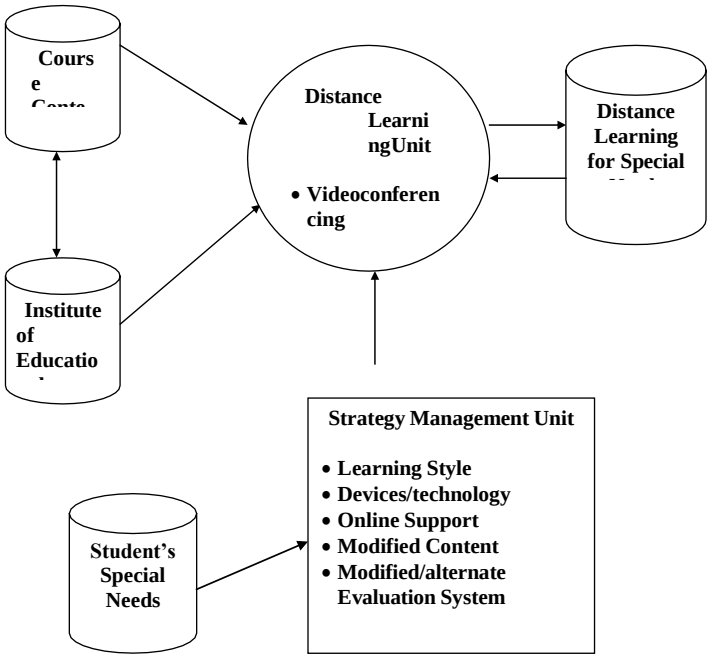
Special Educationist/ Professionals for Physical Handicapped people/students/children	Students with hearing and visually impairment as well as learning disabled students requested the professionals in ODL system. "I need support from reading and writing experts in higher education" (learning disabled) The support of sign language expert will be helpful in my effective and concrete learning" (Hearing Impaired Student).
Assistive Technology/Devices/ Equipments	The visually impaired students were happy that the ODL system has the option of online education with talking softwares. "Talking software like JAZZ will be helpful in ODL system" (Visually Impaired Student)
	"If the ODL system provide the FM system in tutorial, lectures and seminars that will help me to follow the lectures and discussions by using the residual hearing" (Hearing Impaired Student). "The software and distance learning reading material both are important for me in mathematical concepts and skill". (learning disabled student)

Modified Contents	The students with physically handicapped said they can follow the normal content," there is no need to modify the existing ODL content" "The content in braille books or in CDs with talking software compulsory for us in ODL system" 9Visually Impaired Students). "Content on CDs with support of signs will help in independent study" (Hearing Impaired Student)
Evaluation according to disability/special needs	All of them requested the modified or alternate evaluation system in ODL. "If examination or evaluation in braille, audio recording or writer facility then we will be more comfort in ODL" (Visually Impaired Student)

All the respondents i.e. hearing impaired, physically handicapped, learning disabled and visually impaired were willing to get admission in open university for the education but they were concerned about their special needs that these should be addressed through special teaching methods. They recommended the ODL system must provide support of special educationist as well as professionals related to their special needs. Assistive or adaptive devices/technology was the concerned of hearing impaired, visually impaired and learning disabled students but physically handicapped were not too much concerned about these devices. The tutorial support face to face and online was recommended by all the respondents, mostly online due to their mobility and special needs. The students with physically handicapness didn't requested modified contents and evaluation system but other three special needs category

respondents recommended that the content should be modified and evaluation should be according to their special needs.

Model: Educating Special Need Students through ODL



*Unit means one chapter of a subject. AIOU one course consists of 09 units mean 09 chapters in one course.

Discussion

The special need students need special teaching methods in formal as well as in distance education. The respondents' responses supported the Parfitt (1998) findings that special education has its own set of pedagogical principles and practices. The distance education is based on content or learning material developed on the ODL philosophy. The special need students recommended the material to be drafted in view of their

capacities and special needs. Wolery (1992) found the same that the primary concern should be to determine the capacity of the special need students. The current scope of the student's skills and abilities needs to be identified. Then there are aspects of different learning styles, such as preferred stimuli and required adaptive devices for handicaps.

The criteria for selecting teaching methods and strategies should be student- centred, rather than dependent upon the teacher's own preferred teaching methods. (Parfitt, 1998).

Special Need students often demonstrate undetected intelligences and skills when allowed to work with multimedia computer systems or with the help of assistive devices (Green 1995). Generally, online education for special need students described as student-centred, project-oriented and as amenable to collaborative learning.

The online tutorial support, use of softwares, and assistive/adaptive devices help the special needs students in open distance education system. The online material supported with different media forms, such as voice, video, text, graphics, animations, virtual reality enrich the learning of special need students. (Buford 1994).

It is necessary to have a conceptual model of how modified distance learning unit supported with multimedia elements to assist the special need students' learning (Au 1995). Inevitably, the overall design of any model reflects a philosophical viewpoint concerning cognitive, educational, social and psychological development f special need students. (Ellis 1992).

The proposed model is based on responses of special need students; therefore the model is true reflection of pre-requisites needed to include the special needs students in ODL. Course Content Material: The course content material is the material AIOU developed for the students with normal senses. The

material developed on ODL philosophy and fulfilled all the requirements of distance learning. The material is developed by the distance education experts of different fields.

Institute of Educational Technology/A.V Library: The distance education material always supported by the educational technology i.e. multimedia (audio/video), flips charts, pictures, CDs, online support etc., therefore the same support will be provided in the development of distance learning unit for the special needs students.

Distance Learning Unit: The online, broadcast, recorded lectures and other materials will deliver the formulated teaching materials for the special need students in distance education. Video conferencing or online tutorial support will be an effective link between the tutor/distance education teacher and the special need students. The special need students can communicate with their tutors, administrative staff for the solution of their problems and peers through posting queries on the communications system and chat groups. Special need students can also synthesise their learning by sending their own summary of the lesson with text and relevant retrieved video clips back to the tutor, as well as files containing results, graphs and case studies for marking and corrective feedback from the regular the tutor. The same process i.e. course content material and educational technology support is recommended for the distance learning unit stage in the model for the special needs students.

Need Assessment of Special Needs Students: The distance learning unit for the special need students will be based on the needs of special need students. All the needs will be addressed in the unit. For example for hearing impaired children ambiguous or new terminology concepts will be supported with the sign language pictures. The content in print form will be supported with the recorded lectures with the assistance of sign language experts. Strategy Management Unit (SMU): The strategy management unit will incorporate or consider all the special needs of students. The SMU will consider the learning styles of

hearing impaired, visually impaired, learning disabled and physical handicapped students, also the SMU will recommend the devices like magnifier, talk software, reading writing softwares etc. The online support as recommended by all the special need students will be part of distance learning model for the special need students. The SMU will provide modified content and alternate evaluation/examination for the special need students in ODL. Distance Learning for Special Need Students: The final product i.e. distance learning unit/course/program will fulfill all the pre-requisites of distance learning for the special need students. All the special needs students i.e. hearing, visually, learning disabled and physically handicapped will benefit from the ODL system.

Conclusion

Different teaching strategies were investigated and analyzed to pinpoint their suitability for the special need students' special needs and also to modified distance learning unit/chapter. Special Teaching methods like total communication, tactile method, special reading, writing and mathematical concepts were identified by the special need students. The model recommended that the auditory and visual prompts can be inserted at strategic points to support these special methods.

The modified contents, alternate assignment system, and evaluation identified as the pre-requisites to include the special need students in distance education. The learning skills and abilities of special need students described in view of their capacities and special needs. Motor skills and visual / auditory perceptive skills can be enhanced through multimedia, assistive and adaptive devices. This information reinforced the belief that multimedia can have affective outcomes such as increased motivation and self-esteem. It also has potential to assist in retention and recall. On the basis of data collected through questionnaire and interviews a new conceptual model is presented for special need students in distance educational setting using online tutorial support, face to face teaching

through special teaching methods for delivery of the modified learning material. Interaction between the tutor and special need students is supported through the assistive/adaptive devices, multimedia.

The purpose of the suggested model has been to address the pressures upon the regular education sector to meet the learning needs of classified students within reasonable budget parameters. The teaching strategies are contained within the multimedia program. This reduces the need for additional on-site specially-trained staff. Therefore, there is a reduction in recurring expenses. There is also a degree of self-instruction, self-assessment, self-monitoring and self-pacing in the multimedia system module. Interaction with the teacher is flexible. The demand on the teacher to be continuously present is less. Overall, once the support infrastructure is in place, distance learning offers a viable flexible alternative for teaching students with disabilities. The proposed distance education model for special need students not only assessed the pre-requisites but it also recommended the process to develop the modified unit/chapter/course for the special need/disabled students in ODL. The model will open the door of higher education, professional and vocational education for the special need students. The new proposed model for the special need students included special teaching methods, support of special educationists/professionals, face to face and online tutorial support, A.V Library (assistive devices) support, modified content and alternate/modified assignments with modified/alternate assessment/evaluation system.

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PERSPECTIVE OF DISTANCE EDUCATION

Prof. DR. ISMAIL SAAD[1] & PROF. DR. SHAGUFTA[2]

Abstract

Distance education started in the form of correspondence teaching over one hundred years ago. During the 19th Century, may educational institutions including universities in Sweden, West Germany, United Kingdom, USA, were offering correspondence courses. In 1986, earliest form of organized distance education in England was started by ISAAC Pitman who in the mid of 19th century started teaching short hand on post cards. It is concluded that the normal traditional schools system cannot cope with the large demand. It is not effective enough; it is too expensive; and the available teaching force is not used efficiently.

Distance Education: A Historical Perspective

Distance education began with a concern to reach individuals who could not attend regular classes. Distance education in the form of correspondence teaching (i.e. teaching through printed materials) has a long history, over one hundred years (young et al, 1980; Kaeley, 1984; Taylor and White, 1985; Holmberg. 1986). However, in its non-organized form distance education has been traced back to the beginning of written records (Sewart: 1981). During the biblical period epistles (e.g. Epistles of St. Paul) were used for the instruction of early Christian congregations (Sewart: 1981) (Holmberg: 1986).

During the 19th century many educational institutions including universities in Sweden, West Germany, United Kingdom, U.S.A. were offering correspondence courses (Young et al, 1980).

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In Sweden organized distance education has been traced back to 1833 (Holmberg, 1986). It was however, not until the 1870 that Hans Hermod opened a small correspondence school in Malmo where he taught languages and commercial subjects. Hermods School developed into the largest correspondence school in Sweden and one of the largest and most influential distance teaching organizations in the world (Erdos, 1967; Young et al, 1980; Holmberg, 1986). In Germany, organized distance education was introduced in 1856 by a Frenchman Charles-Toussaint and the German Gustay Langenscheidt who established a correspondence school for language teaching in Berlin (Erdos, 1967; Holmberg, 1986).

According to young et al (1986), the earliest form of organized distance education in England was started by Isaac Pitman who in the mid19th century started teaching shorthand on post cards. This formed the foundation of what became the Isaac Pitman Correspondence college. During the same period William Briggs was teaching his pre-university students by post, after they has left college (Young et al, 1980). In the United States, correspondence programs developed after 1860 and were inspired by Anna Eliot Tichnor who founded and ran the Boston Society to encourage study at home from 1873-1897 (see Mackenzie and Christensen, 1971; Holmberg, (1986).

In the late 1920s, the Soviet Union adopted distance education for a different kind of purpose to increase the output of the educational system.

The Nature of Distance Education

The term "Distance Education" is used to describe various form of study at all levels. One of the main characteristics is that there is not a continuous and immediate supervision of tutors, but there is planning, guidance and tuition through tutorial organization. It is an educational process in which a significant proportion of the teaching is conducted by someone removed in space and/or time from the learner.

Distance Education Includes any planned and regular educational provision where there is distance education between teacher or instructor or educator on the one hand and student or learner or respective audience on the other hand.

Different Terms Are Used For Distance Education Such As

- Correspondence Education.
- Postal Education.
- Independent Study Programs.
- Distance Study Course.
- Off-campus Learning.
- Non-Formal Education.
- Out-of-School Education.
- Distance University.
- Open University.
- University without Walls.

For the larger part of its history, distance education lacked a widely accepted definition and theory. Although it has been widely used since the beginning of the 1970s (Holmberg: 1982) and it has not achieved general acceptance (white: 1982) (Ruggles ET al 1982) There does not seem to be any consensus or agreement about the meaning or concept of 'distance education'. According to Keegan (1983) there have been complaints about the lack of consensus about the terminology used in distance education. It is formal recognition was achieved in 1982 when the international Council for Correspondence Education (Holmberg: 1985, 1986) (Garrison: 1987). It has been defined in different ways by a number of authors (Peters: 1971, 1973, 1983) (Moore: 1973, 1977) (Holmberg: 1977, 1981, 1985, 1986) (Harris and Williams: 1977) (Sims: 1977) (Perraton: 1982, 1983, 1986) an indication that it is not universally understood to have the same meaning.

This diversity of definition is probably partly attributable to the variety of purposes distance education serves and the multiplicity

of media utilized in distance education (see Perraton: 1982).Keegan (1980) made a detailed analysis of and synthesized various aspects of a number of definitions and produced six fundamental characteristics of distance education which he regarded as essential for any comprehensive definition:

- The separation of teacher and learner which distinguishes it from face-to-face learning.
- The influence of an educational organization which distinguished it from private study.
- The use of technical media, usually print, to unite teacher and learner and carry the educational content of the course.
- The provision of two-way communication so that the student may benefit from or even initiate dialogue, which distinguishes it from other uses of educational technology.
- The teaching of students as individuals and rarely in groups, with the possibility of occasional meetings for both didactic and socialization purposes.
- The participation in a more industrialized form of education (based on the view that distance teaching is characterized by division of labor, mechanization, automation, application of organizational principles, scientific control, objectivity of teaching behavior, mass production, concentration and centralization). (Rumble and Keegan: 1982).

The Scope of Distance Education

Parents see the school as a way to the mastery of modern technology and at the same time as a way for their children to earn more money and attain better living standards. In Uganda, for instance, in the late nineteen sixties, the graduate just entering the civil service could expert his income to be fifty times the average income per head (Dore: 1976). In the opening address of the international seminar on Distance Education,

Professor Adedeji (1979) commented: The normal traditional school system cannot cope with the large demand. It is not effective enough, it is too expensive, and the available teaching force is not used efficiently.

However, the tremendous developments in communications physically between places as well as for exchanging information, in turn have meant that a re-appraisal of the traditional methods of education has become necessary and desirable. These technological developments relating to the field of education have instigated developing countries to search for alternative methods of education which can reach the masses cheaply. This has influenced the development of distance education which can offer some of these possibilities.

The Following are some of the Key Advantages of Distance Education:

- The traditional classroom is not a necessary pre-requisite for a teaching situation.
- Distance is not a barrier to education, as it holds a promise of reaching out to categories on groups of people who could not otherwise be reached by special education and training.
- It is convenient for the student.
- The student can work during the day and attend to his course in the evening and vice-versa.
- The student can work at his own speed with-out the consequences of group pressure characteristic of a classroom situation.
- Distance education is suitable for certain categories of vocational training, except in subjects like medicine and surgery, especially in the developing countries, whereas in the developed countries these subjects are being taught through such institutions as the British Open University.
- Any level of academic work can be covered.

- It provides the teacher with a means of self-examination as regards to both the content and effectiveness of his techniques.
- It is flexible, in terms of both the methods and techniques used, and also in meeting the needs of the individual student. It can be an individualized method of teaching.
- It has the possibility of improving the quality of instruction by assessing the best subject specialists and educationalists available to produce course for large groups of students.
- The applicability of distance education to large groups of students as a kind of mass communication is particularly attractive at times when educational institutions are overburdened.
- It has no age limit for study.
- Side effects of denial of training for large numbers are eliminated.
- It is least expensive and fastest method of educating a much larger number of people than is possible through formal education, especially during the constraints of resources particularly of finance and personnel.

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SPECIAL CHILDREN: AN AWARENESS STUDY ON EDUCATION AND REHABILITATION

DR. MUNAZZA MADANI[1]

Abstract

The present study is designed to investigate the awareness of the community members towards disability in urban and rural locality. The findings reflect that: Awareness regarding education and rehabilitation of special children is not very clear in both urban and rural sector issues related to the adjustment of disabled children according to urban sector are social, physical, emotional while in rural sector more stress is a physical problems. Awareness regarding presence of educational institutions in the community members reflects that both urban and rural populations have little awareness about facilities available for education and rehabilitation of disabled children.

Background of the Study

Definition and concept of Education and Rehabilitation of Special Children

Education: Education is the process of bringing desirable change into the behavior of human beings. It can also be defined as the process of imparting or acquiring knowledge and habits through instruction or study. When learning is progressing towards goals that have been established in accordance with a philosophy which has been defined for, and is understood by the learner, it is called "Education".

Education comprises instruction, teaching, information gathering, knowledge gathering and transmittance, study, reflection, discussion, demonstration and the formulation of the pilot programmes. With the development of society, education has taken many shapes such as: (a) Child Education, (b) Adults

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Education, (c) Technical Education, (d) Special Education, (e) Physical Education, (f) Education in the Arts & Crafts, (g) Health Education.

Special Education: The term Special Education has been used to denote aspects of education that are applied to special and gifted children but are not usually used with the majority of average children. Special is defined by Webster as 'distinguished by some unusual quality; uncommon noteworthy; extra ordinary; additional to the regular; extra; utilized or employed for a certain purpose in addition to the ordinary'. Those definitions are certainly applicable to special education, which consists of the modifications of or additions to school practices intended for the ordinary child practices that are unique, uncommon, of unusual quality, and in particular in addition to the organization and instructional procedure used with the majority of children.

Rehabilitation: Education and rehabilitation is necessary for the positive growth of special need children. The term rehabilitation of special children refers to any process, procedure, or program that enables a disabled individual to function at a more independent and personally satisfying level. This function includes all aspects – physical, mental, emotional, social, educational, and vocational – of the individual's life.

The complexity of the rehabilitation process necessitates a team approach that involves a range of professionals almost as broad and varied as the types of condition addressed. Goldenson, Dunham, and Dunham (1978) discuss no fewer than 39 rehabilitation specialists in their handbook. Their list includes such diverse professions as orientation and mobility training, genetic counseling, biomedical engineering, and orthotics and prosthetics, in addition to numerous medical, mental health, therapeutic, and special education fields. In view of the potential involvement of such an array of professionals, it becomes particularly important to remember that the rehabilitation process

is one that is doe with disabled persons and often their families as well. If a person is to become as fully functional as his or her abilities will allow, a process that fosters dependence is a self-defeating one.

A child with disability is first and foremost a child and any child's education is not just the acquisition of academic skills – it is also a socializing experience, a preparation for the child to interest positively within the community, that's why special education is designed instruction for a child with special needs but the different perception regarding the definition of special education is because of the community members diverse orientations and experiences. Special education is a helping profession. People who work in special education work with students who are considered exceptional.

Special education is perceived as different things to different people. It is promises, problems, disappointments and headaches, a mystery and a method, infact it is individualized and tailor-made education for each child with special needs. According to the Federal Regulations, Special Education means "specially designed instruction, at no lost to parents. To meet the unique needs of a child with disability, including classroom instruction, in the home, hospitals and institutions, and in other settings and instruction in physical education".

Special education includes direct instruction in the classroom, consultation to the general education teacher, coordination of the student in educational program, and coordinating learning opportunities necessary for each youngster to profit from instruction, and all the related services (speech therapy, physical therapy, occupational therapy, assistive technology) required to meet the unique learning needs of the youngster. In addition, special education monitors progress so that no student with special needs is over looked or neglected. Here the concept of rehabilitation comes to once mind.

The basic idea of rehabilitation is to give disabled child / adult back his self dignity, and self-reliance no matter what disability the child is having. So, for the education and services of special children, the awareness of special education services should be known to the masses which include parents, professionals and other community members.

Problem of the Study

The problem of the study is stated as under:
"Education and Rehabilitation of Special Children: An Awareness Study in the Two Socio-Economic Groups of Karachi"

The study is exploring the level of awareness of the community members about education and rehabilitation facilities for special children.

Objective of the Study

- To explore awareness level of two community segments about education and rehabilitation facilities for the special need children.
- To investigate awareness level of respondents about various kinds of special children.
- To identify the awareness of parents, professionals, community members towards role of multi professional and disability issues.
- To investigate the steps needed to develop coordination and networking among institutions serving special need children.
- To develop recommendations for policy makers and future researchers.

Assumptions of the Study

- The awareness level of two community segments about education and rehabilitation of special need children will be different.

- Urban population will have more awareness than rural population.
- The awareness level for disability of the two opinions of parents, professional and community members about role and need of multi-professionals in the life of children.
- There is level of coordination and not working among institutions serving special need children.

Research Methodology

The present research was a survey research and involving purposive sampling method for the selection of the population for the study. After selecting the population, (i.e., the area of the study), using cluster sampling, thirty respondents were selected from each segment of the society. A total of 60 respondents representing the two socio-economic levels of Karachi were selected for the sample of the study. The instrument of the study was a structured questionnaire constructed on the bases of the objectives of the study. The researcher went to the respondent personally and using interview method recorded the data.

Summary of Results

The main areas of study included meanings of disability, information about the causes of various disabilities, people's acceptance or rejection of disabled, general suggestions about integrating disabled persons in the society, awareness about education and rehabilitation of disabled persons. The bulk of research effort has been devoted to the awareness of community members (urban and rural) towards disability and disabled.

A quick review of literature indicate that the study of attitudes to handicaps falls into two broad types, prevalence of specific attitudes towards disabled and relationship between attitudes towards disability and other variables.

Awareness and attitudes towards the handicapped presumably follow negative prejudiced attitudes and stigmatization. There is

evidence that the handicapped have become more human, then this may be because the original negative ones were largely the result of ignorance and misinformation and were modified by education or other sources of motion and were modified by education or other sources of information.

Presently, a child who is seen as disabled is considered most in need of an institution where he can line a separate life, the realization of normal intelligence. It seems to produce an attitude against segregation and is one of the major influences on a decision to keep the child in his home. Current social attitudes are moving towards making provision for the handicapped to line within the community rather than to be segregated. Public attitudes vary according to perceptions of the concept, nature, severity and identification disabilities as well as the age, sex, status and behavior of the disabled person.

Other people's attitudes to disability are the social and psychological 'matrix' in which the disabled person lives. It is fundamental to his socialization and is influential both in inter person behavior and in the more organized ways in which society provides support for the disabled. One way in which socialization practices will be influenced is through the direct effects of the disability itself. One of the results of severe handicap is that the natural time – scale within which the family and other socialization agencies undertake their respective tasks has to be modified.

Arrangements for teaching the handicapped child range from schools within institution residential schools day special schools, special within ordinary schools and full integration with in ordinary schools special schools particularly those dealing with the sub-normal emotionally disturbed have socialization as their prime objective and instruction seems to take second place. On the whole surveys of students' awareness and attitudes to handicapped indicate a change in a positive direction over the years, though there is still a considerable proportion of negative

response. It is clear that if any community has strongly negative attitude to disability, this will make a handicapped persons adjustment to that society a great deal more difficult.

Although there is a tendency for excepting people to except all handicaps, there seems to be a difference between physical handicaps are somewhat better excepted than mental. This may be because it is often more difficult to communicate with the mentally handicap and there are fewer points of common interest can be discussed. Many observations have been made on the social interactions of handicap and non handicap people. In the less successful interaction disabled people commonly feel that they are being treated as if they were totally disabled and incapable of any normal response at all.

Conclusion and Recommendations

The present study is designed to investigate the awareness of the community members towards disability in urban and rural locality. For the purpose of data collection, a total number of 60 respondents were selected. The objective of the study were to find out awareness about education and rehabilitation facilities for the Special Need Children, various kinds of specials children, role of multi-professional and disability issues, and steps needed to develop coordination and networking among institutions serving special need children keeping in view the objectives of the study, structured questionnaire was developed and was used to collect data.

The findings reflect that: Awareness regarding education and rehabilitation of special children is not very clear in both urban and rural sector issues related to the adjustment of disabled children according to urban sector are social, physical, emotional while in rural sector more stress is an physical problems. Awareness regarding presence of educational institutions in the community members reflects that both urban and rural populations have little awareness about facilities available for education and rehabilitation of disabled children.

The recommendations are reflecting how can the community help to optimize children's development?

1. *Establish a local commission for children and families*. This commission should find out what is being done in the community and what needs to be done for children and families. More specifically, it should examine the adequacy of existing programs, such as maternal and child health services, social services, day-care facilities, and recreational opportunities.
2. *Establish a neighborhood family center*. A place that provides a focal point for leisure, learning, sharing, and problem solving should be established in a school, or community. To eliminate the fragmentation of human services, the center should be the place where community members get information on family health, social services, child care, legal aid, and welfare.
3. *Foster community projects*. Projects involving cleaning up the environment, caring for the aged, sick, or lonely, and planning parades, fairs, and picnics are excellent ways for community members of all ages to learn to work together and appreciate each others' talents and skills.
4. *Combat alcohol, drugs, and violence*. Provide successful community role models for children. Work with families and schools to give children skills to solve problems without having to resort to substance abuse or violence.

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