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Using Technology for Deaf Students to Learn English as a Foreign Language in Saudi Arabia

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Abstract: The study examines the use of technology to assist the Deaf students to learn English as a foreign language in Saudi Arabia. The growth in technology has changed the delivery mode in education, including that of the disabled. The study evaluates the level of technology application in teaching the deaf students and determines the possibility of improving it. The importance of the study is to provide ways in which the deaf students can be motivated to learn English effectively. The study uses qualitative research strategy. In addition, interviews have been used as data collection instruments. The study concludes that the use of technology to teach English to the deaf students in Saudi Arabia improves its effectiveness. The study encourages the application of these technologies in teaching English for the deaf students in Saudi Arabia.

Keywords: Technology-Learn-Deaf Students-English-Foreign Language

استخدام التكنولوجيا مع الطلاب الصم، لتعلم اللغة الانجليزية كلغة أجنبية

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الملخص: هذه الدراسة تختبر استخدام التكنولوجيا في مساعدة الطلاب الصم في تعلم الإنجليزية كلغة أجنبية في المملكة العربية السعودية، حيث إن تطور التكنولوجيا أحدث تغييراً في التعليم كممارسة، شمل ذلك أيضاً ذوي الحاجات الخاصة، الدراسة قيمت مستويات تطبيقات التكنولوجيا في تدريس الطلاب الصم وحددت إمكانية تطوير تلك التطبيقات، أهمية هذه الدراسة تكمن في التزويد بالطرق التي تحفز الطلاب الصم لتعلم الإنجليزية بشكل فاعل. استخدمت الدراسة استراتيجية البحث النوعي، كما استخدمت المقابلة كأداة للدراسة، وأشارت نتائج الدراسة إلى أن استخدام التكنولوجيا لتدريس الصم اللغة الإنجليزية يحسن فاعلية التدريس، كما شجعت تطبيق التقنيات في تدريس الطلاب الصم في المملكة العربية.

الكلمات المفتاحية: التكنولوجيا- تعلم- الطلاب الصم- الإنجليزية- لغة اجنبية

Introduction:

The deaf individuals have varying degrees of hearing loss, which significantly impairs their ability to acquire information through auditory channels (Sigafoos, 2008). All individuals who fall under this category are likely to be severely limited in daily functioning and learning. According to Chen (2014), the deaf are hardly identified from their appearances as compared to visual and bodily impaired individuals. However, the mental barriers make them communicate poorly with other individuals and have issues receiving information. As a result, they usually experience anxiety and frustration. They also have low self-

esteem in learning and interpersonal relationship (Chen, 2014). Effective communication skills are essential for the deaf because they fail to acquire speech. When they fail to acquire alternatives to speech, they have a tendency of remaining at the communication development stage of pre-linguistic. Consequently, they rely on unconventional and idiosyncratic signals for communication .

The generally severe nature of the speech and language deficits of the deaf calls for communication intervention. This ensures that the deaf are able to progress past the pre-linguistic stage. They gain by learning modes of communication that are age-appropriate, readily interpreted, and more efficient. However, relying on such forms can be ineffective due to the difficulty in the individual's idiosyncratic responses for the communicative partners to understand and interpret. Consequently, this might lead to stigmatization and hinder peer relations if such reliance continues beyond the preschool years.

The traditional style of classroom education is instructor-oriented, and the activities of learning are conducted in classrooms. However, this is been transformed into internet digital learning, which is unlimited in terms of time and space. In addition, interactions have been switched from passive to active and from one to two-way (Chen, 2014). The CAL (computer-aided learning) materials are of high quality, which have led to their support by the students and teachers. The CAL is well established as an important tool to supplement the deficits convectional education tools and as important equipment to increase the performance of learning (Yang, 2007).

Statement of the Problem:

According to Mahboob & Elyas (2014), English is considered a core subject in both private and public schools in Saudi Arabia. It is also used as the training medium for most companies and organizations. Today, Saudi Arabia has explicitly promulgated English into its education system. In line with this, the importance of education of students with disabilities has been put into consideration. The use of technology has helped the deaf to live independently, enhance employment skills, and broaden social participation. Since Saudi Arabia has explicitly promulgated English into its education system, it is important to students even those deaf student to acquire English language. The findings are likely to bring more light on the various technologies that are available and benefits that lie with their teaching the deaf students in Saudi Arabia.

Research Questions:

1- What kind of technology is applied in teaching the deaf students English as a foreign language in Saudi Arabia؟
2- What is the motivation behind applying technology in teaching the deaf students English as a foreign language in Saudi Arabia؟

3- What is the difference between the traditional and the technology-driven modes of learning English as a foreign language in Saudi Arabia for the deaf students?

Purposes of the Study:

The study examines the use of technology in teaching deaf students in Saudi Arabia. The study focuses on the teaching of English as a second-language in Saudi Arabia. Furthermore, the relevance of learning the English language has been determined. The study explores the various technologies available in Saudi Arabia for teaching the English language. In addition, the opportunities for applying these technologies have been examined.

Importance of the Study:

According to Alzahrani (2005), education for the deaf in Saudi Arabia has positive effects on social adjustment, social development, and interaction between the hearing and the deaf students. Teaching English to the deaf students would benefit them by teaching them how to interact freely with other hearing peers. This social interaction enables the deaf students to develop the necessary skills for functioning in the hearing world (Alzahrani, 2005). The use of technology ensures efficiency in teaching English for the deaf. The combined use of technology can reduce frustration experienced by the deaf during the process of learning.

Literature Review

Teaching English in Saudi Arabia:

Learning and teaching English was not regarded as being important in Saudi Arabia. However, the situation changed for last few years. Currently, English has been embraced as a major language in Saudi Arabia's educational planning. Consequently, it has been made a compulsory subject at all levels, starting from elementary to university. Saudi Arabia has spent billions of dollars on institutions of education for the purposes of imparting English knowledge among the citizens (Nicolaides, 2007). The language experts, curriculum designers and policy makers are continuously seeking suitable curriculums for the various stages of educational programs. Moreover, the students are aware of the English knowledge in finding a white color job in both the private and public sector. Currently, there is a significant growth in the enrollment of students in various institutions to learn English. In addition, the English language also plays an important role in the print and electronic media, including magazines, newspapers, radios and television programs in English. Thus, English remains as the only foreign language in both secondary and elementary learning institutions in Saudi Arabia (Nicolaides, 2007).

The importance of English in SPS was due to its role in preparing students to travel to Britain and USA. Teachers were invited and recruited from the Middle East to teach English. Since most teachers were

from Egypt, the curriculum and educational model for most of the subjects was modeled on the system of Egypt, which was under a heavy influence of the French system. Also note that English is closely connected with the development of the military power of Saudi Arabia with the advisors of American advisors. This has increased the need for the military and civilian personnel to be taught English. The political pressures of post 9/11 prompted Saudi Arabia government to introduce English in primary schools. According to Karmani (2005), the country decided to introduce the studies of English at primary levels in order to expose the youth to the concept of tolerance and acceptance of others, especially the West.

Special Education in Saudi Arabia:

Since the founding of the Kingdom, Saudi Arabia has had attention, unlimited support, and care for the special groups. In Saudi Arabia, the special education for the children with disabilities started as regular education schools and later transformed into separate schools.

The Kingdom was the first country in the Arab region to implement mainstreaming on a scientific basis in its schools. In 1990, the schools in the country started implementing mainstreaming on a limited scale. In 1996, an educational strategy was put forward by the ministry, which had ten major themes. One of the themes focused on the activation of the function of public schools in the learning of exceptional children while putting them together with the normal peers. Various regulations and legislation regarding people with disabilities have been put in place.

Technology in Education:

According to Chen (2014), online education is beneficial to the learning of the deaf. The combined use of text-oriented and sign language videos education systems has reduced frustration experienced by the deaf during the process of learning. The system also allows for repeated learning, especially for difficult topics. According to Debevc (2011), the design of inclusive programs is made for atypically and typically developing children. These programs make use of assistive technology together instructional technology, which supports the development of important skills in the students, argue that podcasting is used in the creation of a classroom environment, or third space pedagogy using multiple tools of mediation to help students in literacy development. The ability of students to use computers in the classroom is an effective use of time by podcasting during free moments to play, collaborate and be creative. The deaf students can use synchronous as a tool for motivational social discourse.

Language Acquisition by Deaf Students:

Acquisition of language is a natural process by which the hearing children do without effort. Most hearing students start school with strong background knowledge and good language skills. These essential skills are useful since the educators use them for the children to read, write, develop social skills and acquire content knowledge (Luckner, 2012). According to Al-Osaimi (2009), the hearing student build

their skills of speaking by listening to the talking and communications of their parents. A child can hardly learn communication skills at later stages. The same is applicable to the deaf children. The failure of deaf children to learn the sign language at early stages leads to difficulties in learning the same when older. The educators often use written and oral language media to teach academic content. Similarly, the students use both written and oral languages to demonstrate their knowledge of the matter. However, the deaf students rarely start school with similar language skills as the hearing ones. The deficits in the knowledge of vocabulary exist earlier for the deaf students and grow larger every year. This is due to the role played in successful reading throughout the lifetime of an individual and impacts performance in various academic subject areas.

Sign Language:

The sign language is based on the movements of hand and body, eyes, face, and lips mimicry. It utilizes a system of visual-sign with defined locations, movements, orientations, positions of fingers and hands, and facial expressions (Nelson, 2014). The sign language has a linguistic structure that is independent of the vocal language applied in given geographical area (Donne, 2013). Grammatical structure and word order emerge from a separate physical language development within the community of the deaf. This communication method strongly influences the language and culture of the deaf community and the community individuals.

Technology in the Learning of the Deaf Students:

According to Zirzow (2015), education in the 21st century has seen seamless integration of technology, and may provide a new opportunity with which the requirements of the deaf students are accommodated. There has been a constant development of new software, applications, and tools with the aim of better engaging support teachers and students (DeMoss, 2012). Moreover, technology has become more affordable, more portable and smaller, which makes them accessible to schools and the deaf students. One major technology is the VR (virtual reality). Zirzow (2015) argues that the use of VR is highly motivating, facilitates self-pacing and repetition, provides the opportunity to feel or see, and allows for control over one's environment. Most deaf people make use of full natural language for communication among themselves known as the sign language (Debevc, 2011).

Technology as a Motivation Factor to Deaf Students:

The deaf students often fail to complete their homework at home since the teachers are not able to provide additional care and instruction. Consequently, the deaf students have lower motivation to learn, take fewer courses and study less at home as compared to the hearing students (Chen-Chung & Yi-Ching, 2007). This proves to be a challenge for teachers in the provision of after-class learning assistance and care that sustain the students' motivation to participate in continuous activities of learning. According

to Chen-Chung & Yi-Ching, (2007), various strategies have been proposed to maintain learning motivation. Such strategies include praise, encouragement, assistance, reward and reminding the students about the activities of learning. When outside school, the teachers can continue to motivate the hearing students through the telephone. However, this strategy is not possible for the deaf students. The teachers should use specially designed facilities or text telephone for synchronous interaction with the deaf students. The students and teachers should be equipped with such equipment.

The use of emails can facilitate the communication of students and teachers. However, it cannot support instantaneous and synchronous communication. Moreover, teachers can use short messages while communicating with students using mobile phones, but it is asynchronous. According to Chen-Chung & Yi-Ching (2007), the lack of synchronous channel of communication leads to difficulties in the provision of learning instruction or care after classes for the sustenance of student motivation.

E-learning Interfaces:

An e-learning program elicits the feedback of children regarding the design of the interface. The design of common interfaces is made in a manner that uses audio to assist the users to easily interact with the interface. The interaction of the deaf users with such interfaces lead to difficulties and longer time may be required to accomplish the tasks. Al-Osaimi, (2009). Hence, the programs can help the students to learn new literacy skills and vocabulary at the time of their convenience. In addition, they can be used to increase the deaf students' confidence, self-contact, motivation and independence. This requires the developers to understand the needs and capabilities of the deaf users. This can be achieved by involving the deaf in the design and test processes of the program development.

UDL (Universal Design for Learning) :

Such learning environments are pedagogically effective, and they can serve the special and regular students while being commercially successful and innovative. Shepherd & Alpert (2015) refer this to as the UDL (Universal Design for Learning) and involves students with differences in their hearing, seeing, speaking, reading, writing and comprehending abilities. The UDL concept enables educators to capture and hold the attention of students and make it relevant by linking the content of curricula to various elements of youth culture, including music, video games, internet and television.

Hearing technology:

The hearing technology refers to any device used to improve the sound level available to a listener. It can further be divided into personal amplification and assistive listening devices (ALD). The ALDs can be used by large groups of people or individuals and can be accessed without the help of specified personnel. They are typically used in improving the ratio of signal-to-noise in a given situation. In

addition, they also directly connect the listener with the sound source and help reduce the effects room acoustics, distance and background noise (Alodail, 2011).

Devices used by the Deaf Students:

Hearing Aids

These are miniature public address systems that are worn by the listeners. They are more efficient in quiet and structured settings. However, the extraneous noise should be minimized, and the speakers should be just a few feet away. There are different styles of hearing aids available, including body-worn, eye-glass, in-the-ear, and behind the ear. Students mostly use postauricular hearing aids that are designed to fit behind the ear unobtrusively (Emerson & Bishop, 2012).

Frequency-Modulated (FM)

They are also known as auditory trainers. The FM systems are the most commonly used devices of auditory enhancement in schools due to their portability and versatility. They create direct links between the learner by wearing a hearing aid and the teacher by wearing a microphone. The system helps to reduce the background noise and enables the students and the teachers to freely move around the room (Emerson & Bishop, 2012).

Audio Loops

This is an amplification system that was introduced to meet the sound level needs control of the voice of the teacher, to effectively deal with background noise, to provide enough mobility in a classroom, and to maintain auditory cues consistency between school and home. Transmission of sound may be done using radio waves or through a hearing aid that is specially equipped. The loops might be built into the room's walls or created to surround a given part of the room's seats (Smith & Basham, 2014).

TDDs (Telecommunication Devices for the Deaf):

The TDD enables the deaf people to receive or make a telephone call. It is connected to a telephone, and it looks like a small keyboard that uses a screen o display both incoming and outgoing messages. Some of them have a paper printout that records the conversation's permanent copy. A message is typed on the keyboard and automatically converted into tones. It is then transmitted to another TDD over the phone whereby the message is converted back into text. Hence, the system requires both communicating parties to have the technology. The deaf students use this technology to interact with each other just as the hearing students do (Smith & Basham, 2010).

Captioned Television

Captioning is the text addition to a visual display. In this system, the spoken words are seen as text. Captioning can be categorized into open and closed. The open captioning cannot be turned off, which makes it unpopular. In the closed caption, the user can turn it on and off in modern television. This ensures that he deaf students have access to videos for recreational and educational purposes. Therefore, most classrooms can access this technology for the purposes of teaching the deaf students (Shepherd & Alpert, 2015).

Live Speech Captioning

The technology allows the deaf individuals to understand words while in the process of speaking. In educational settings, the stenographer enters information as the teacher is saying it and the computer monitor displays the text. According to Shepherd & Alpert (2015), deaf students in an inclusion class interact with other students but communicate minimally. All diverse learners should be provided with items such as synchronous texting, which would enable them to compete socially with other learners. The text-speak system can also be useful in the enhancement of students' writing skills. This form of pedagogy can be effectively implemented in the classroom since most students have cell phones. Students are usually delighted and fascinated by texting. The teachers can use this opportunity to incorporate the text-talking technology, and other tactile and visual stimuli, in their lessons.

Signing Avatars

The signing avatars act as an assertive technology for the deaf students since they offer an alternative language to the sign or spoken language (National Technology Institute for the Deaf, 2012). It is a virtual reality character that communicates using sign language within the VR system. They convert written or spoken words into sign language. Zirzow (2015) defines ASL (American Sign Language) as a conceptual and visual language with different syntactical and grammatical information that is provided simultaneously. The ASL can express similar subtle concepts the same way that can be done by oral English. Nevertheless, a signing avatar should be fluid. It should also have the ability to move between finger spellings, and perform translation of words to context, including the application of facial expression and body shifting. The fluidity and quality of signing avatar production are critical because the user is required to recognize the necessary facial expressions and body movements necessary as linguistic elements of sign language (Zirzow, 2015). According to Stone, (2015), fingerspelling is the use of fingers and hands for the purposes of symbolizing written orthography. It has been in application since the 17th century whereby it has been used in the facilitation of reading instruction. In ASL, the degree and use of fingerspelling in a conversation differ on the basis of a conventionalization continuum (Parton, 2006).

Methodology:

This chapter gives a description of research methodology and design that will be used in this study. It will cover such aspects as sampling, population, data collection, and analysis. The purpose of the study was to examine the use of technology in teaching deaf students in Saudi Arabia, particularly in the teaching of English as a second-language. The research questions included:

1- What kind of technology is applied in teaching the deaf students English as a foreign language in Saudi Arabia?
2- What is the motivation behind applying technology in teaching the deaf students English as a foreign language in Saudi Arabia?
3- What is the difference between the traditional and the technology-driven modes of learning English as a foreign language in Saudi Arabia for the deaf students?

Research Design

A research design is the end result of the various decisions that the researcher makes regarding the manner in which the study will be taken. It is closely connected to the study framework and guides planning for study implementation. It is a blueprint for carrying out a study, and it maximizes control over factors that are capable of interfering with the findings validity. The research design changes depending on the structure imposed by the researcher in a research situation. It is also determined by the amount of flexibility allowed in the process of the study.

The responses to the questions are usually regarded as a description that identifies the attitudes and opinions of a given population. A survey serves the function of description, as well as an explanation of the reasons for people's behavior and beliefs. The study explores the perceptions of educational personnel regarding the use of technology in teaching students in Saudi Arabia.

Target Population

A population refers to the total group of subjects, which meet a certain set of criteria. A target population comprises all the cases that the researcher wishes to make generalizations. On the other hand, the accessible population includes all cases that conform to given criteria, and the researcher is able to access them as a pool of study subjects. In this case, the target population involved Saudi Arabian educators in inclusive schools. These schools were public schools with all types of students, including the hearing and non-hearing. The accessible population (30) involved all certified educators working in public Schools in Riyadh City whose names and addresses were known and made available to the researcher.

Sample

The researcher used purposive sampling, which involves selection of individuals in accordance with their representation of the desired population. The sampling method is classified as non-probability,

and it involves conscious selection of given subjects for inclusion in the study. The participants of the study were identified using snowball sampling since the researcher did not have any list that contained the names of the educators. The importance of snowball sampling in qualitative sampling is because it is directed at the people that are hard to identify. The researcher collects data from few members of the population. Information is sought from the selected members, which enable the researcher to locate other population members.

Data Collection

The main data techniques that the researcher used in this study were semi-structured interviews and secondary source analysis. The most valuable and important information sources were personal interviews. The choice of interviewees was made on their relevance to the study questions. Initially, the participants were requested to suggest the names and addresses of potential actors involved in the field under study. The total number of participants was reached heuristically. The researcher decided to stop looking for more respondents when nothing new could be could be collected any more. The selection of interviewees was mad on the ground of their closeness to the study topic and their experience levels in the field. A total of 30 interviews were conducted from the participants. Data was tape-recorded, and field notes made.

Limitations of the Study

The study examined the application of technology in teaching English for the deaf students in Saudi Arabia. However, the results were taken from a single region, Riyadh City.

Data Analysis

Analysis of data was made through segmentation and categorization of data. All the responses from the 30 participants were read and read to familiarize the researcher with the data. Thereafter, meaning units or segments were identified. A unit is a text segment that is comprehensively single and contains one episode, piece of information or idea. Specific topics were then identified from the responses. The topics were categorized according to the similarity in topics. The themes were quantified in order to determine the views of the majority. Data was represented by tables and graphs.

Findings and Results

This section provides the results of the study from the interviews conducted.

What forms of technology are used in teaching English for the deaf in this institution?

Table (1) Forms of technology are used in teaching English for the deaf

Technology	Count	Percentage
Hearing aids	5	16.7%
TDDs	7	23.3%
Captioned television	6	20%
Live speech captioning	8	26.7%
None	4	13.3%
Total	30	100%

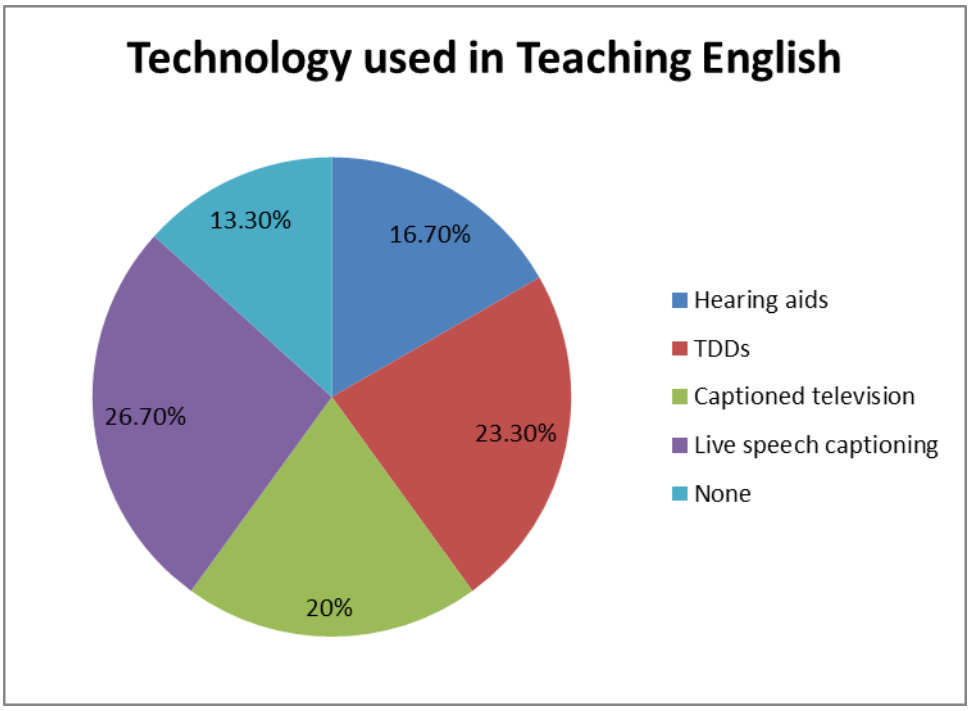

Figure (1) Forms of technology are used in teaching English for the deaf

It was found that 16.7% of public schools in Saudi Arabia use hearing aids in teaching. About 23.3% claimed that TDDs were the most used, 20% supported captioned television, and 26.7% live speech captioning. However, 13.3% stated that no technology was used in teaching English as shown in figure 1 and table 1.

Are the deaf students included in classrooms together with other students?

Table (2) Inclusion of Deaf Students in normal classrooms

Response	Count	Percentage
Yes	24	80%
No	6	20%
I do not know	0	0
Total	30	100%

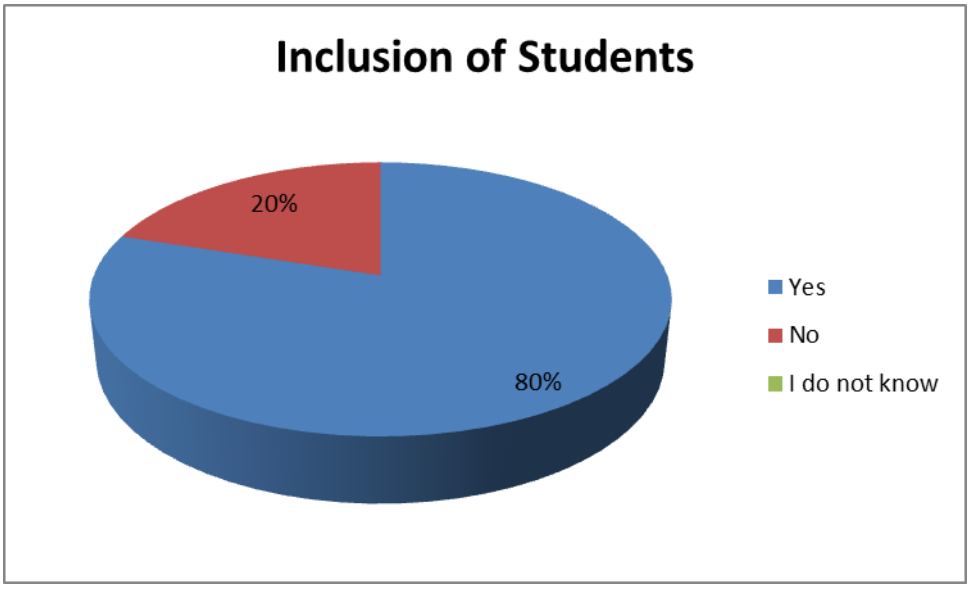

Figure (2) Inclusion of Deaf Students in normal classrooms

Table 2 and figure 2 show that 80% of public schools in Riyadh City exercise inclusion of the deaf students with the hearing ones. However, 20% claimed that the schools they came from did not include different students.

Is the technology used in learning English suitable for the deaf?

Table (3) Suitability of technology in learning English for the deaf

Response	Count	Percentage
Yes	17	56.7%
No	10	33.3%
Not sure	3	10%
Total	30	100%

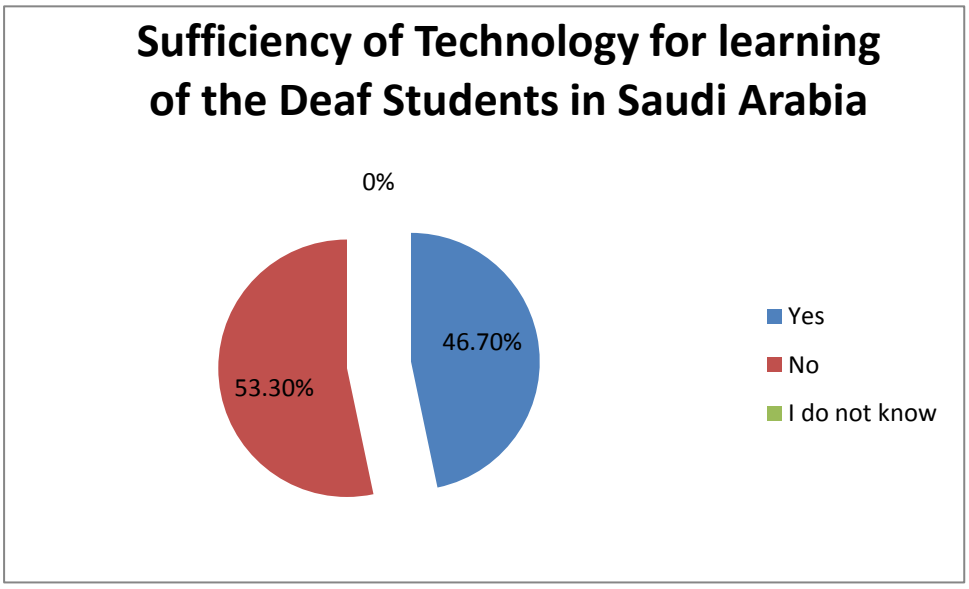

Figure (3) Suitability of technology in learning English for the deaf

As shown in table 3 and figure 3, 56.7% of the respondents felt that the technology applied in their institutions were suitable for teaching English for the deaf. About 33.3% stated that the technology used was unsuitable while 10% were unsure about its suitability.

Are the deaf students comfortable using technologies in learning English?

Table (4) Comfort of deaf students using technology in learning English

Response	Count	Percentage
Yes	24	80%
No	6	20%
I do not know	0	0%
Total	30	100%

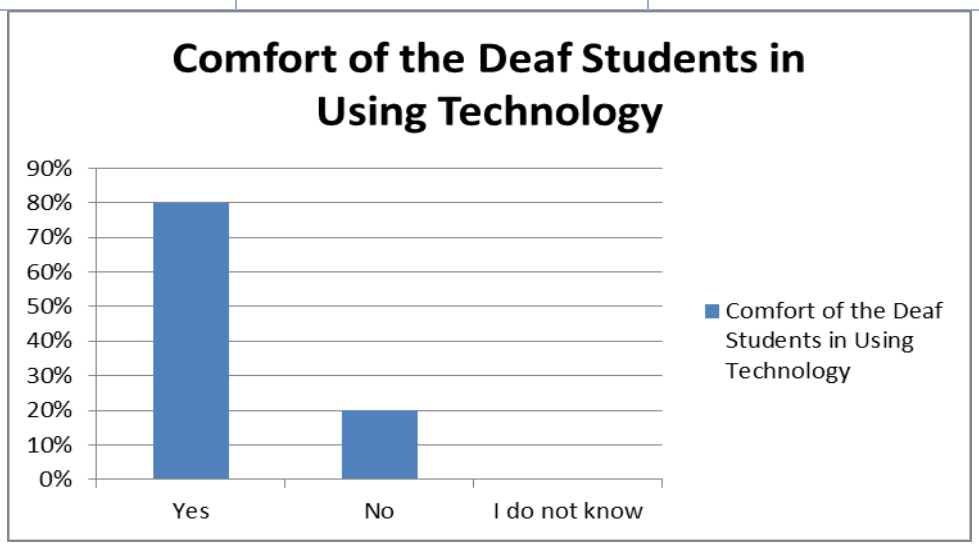

Figure (4) Comfort of deaf students using technology in learning English

As show in table 4 and figure 4, about 80% of the respondents claimed that technology improved the comfort of the deaf students while learning English while 20% disagreed.

How proficient do you think the deaf students are in English as a foreign language?

Table (5) Proficiency of the deaf students are in English as a foreign language

Response	Count	Percentage
0-30%	6	20%
31-50%	13	43.3%
51-75%	9	30%
76-100%	2	6.7%
Total	30	100%

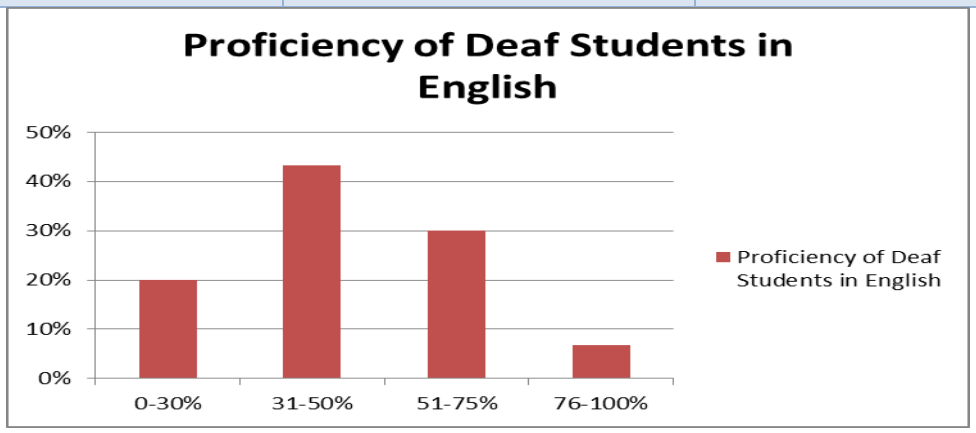

Figure (5) Proficiency of the deaf students are in English as a foreign language

Table 5 and figure 5 show that 20% of the respondents feel that the proficiency of the deaf students in English as a foreign language is between 0-30%. Majority of the respondents (43.3%) stated that the proficiency was 31-50%, 30% claimed that it was 51-75%, 6.7% claimed that it was 76-100%.

Has technology improved the learning of English by the deaf students?

Table (6) Improvement of learning of English by the deaf students using technology

Response	Count	Percentage
Yes	21	70%
No	6	20%
Not sure	3	10%
Total	30	100%

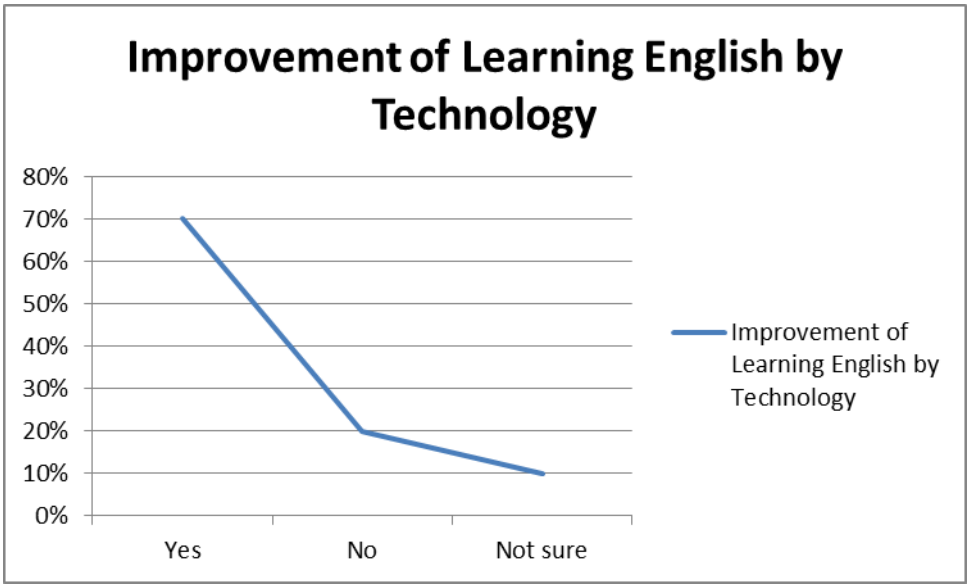

Figure (6) Improvement of learning of English by the deaf students using technology

Table6 and figure 6 show the views of participants regarding the role of technology in improving the learning of English by the deaf. About 70% claimed that technology indeed improved the learning of English by the deaf while 30% disagreed. About 10% were unsure.

Do you think the technology for English learning for the deaf in Saudi Arabia is sufficient?

Table (7) Sufficiency of Technology for learning of the Deaf Students in Saudi Arabia

Response	Count	Percentage
Yes	14	46.7%
No	16	53.3%
I do not know	0	0%
Total	30	100%

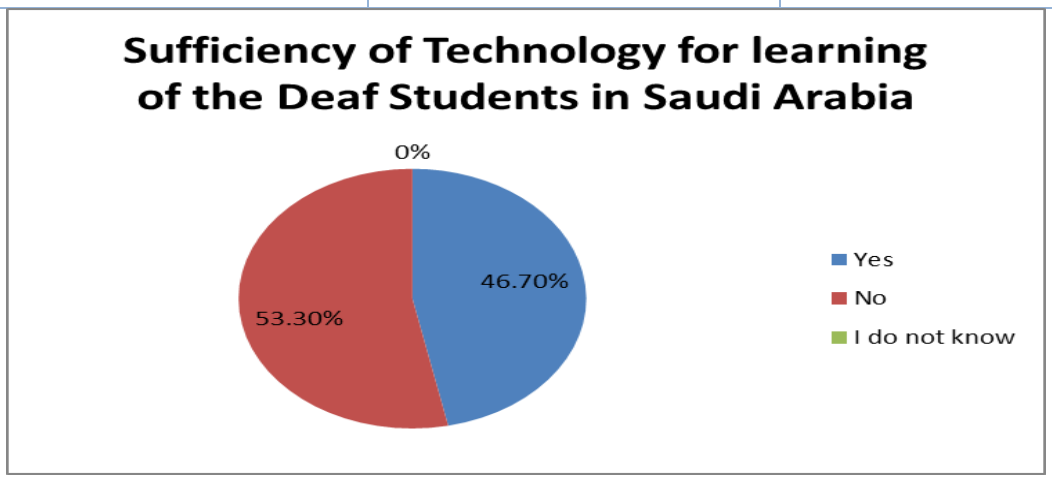

Figure (7) Sufficiency of Technology for learning of the Deaf Students in Saudi Arabia

As shown in table 7 and figure 7, 46.7% of the respondents claim that the use of technology for learning of the deaf students in Saudi Arabia is sufficient. However, the majority of the respondents (53.3%) argued that the technology was not enough and that more had to be done.

Discussions:

What forms of technology are used in teaching English for the in this institution?

Various public schools in Saudi Arabia use different technologies in teaching English to the deaf students as a second language. These technologies include hearing aids, TDDs, captioned television and live speech captioning. About 16.7% of the respondents claimed that 16.7% of public schools in Saudi Arabia use hearing aids in teaching. About 23.3% claimed that TDDs were the most used, 20% supported captioned television, and 26.7% live speech captioning. According to Al-Osaimi, (2009), the deaf individuals use various assistive technologies to provide them an improved accessibility in different environments. Such devices provide amplified sound while others provide alternate means to access information through vibration or vision. These technologies may be categorized into three, including alerting technologies, communication supports, and hearing technology. These devices seek to improve information access that is gained by most people through hearing.

Are the deaf students included in classrooms together with other students?

The results found that most public schools have embraced inclusion of students with different abilities into the classrooms. About 80% of the participants confirmed that public schools were integrating the deaf with the hearing students in one classroom. Most of the interviewees claimed that inclusion of all students was mainly due to the requirement by the ministry of education. However, about 20% argued that inclusion was not implemented in all the schools. They claimed that some institutions lacked the necessary technology and personnel to teach the deaf students. According to Al-Osaimi, (2009), deaf children experience many difficulties during interactions with interfaces designed for the hearing population. The building of interfaces specifically designed for the deaf students is important for the purposes of enhancing their learning experience. Therefore, it is easier to include the deaf students with other hearing students when the right technology is available.

Is the technology used in learning English suitable for the deaf students?

The deaf students usually feel left out and demotivated when learning together with hearing students. Therefore, the use of technology has been seen as a motivating factor for the deaf students. In this study, 56.7% of the respondents felt that the technology applied in their institutions were suitable for teaching English for the deaf. However, others (33.3%) felt that the technology used in the institutions in which they were based were unsuitable, and they recommended for other forms of technologies.

According to Al-Osaimi, (2009), the hearing student build their skills of speaking by listening to the talking and communications of their parents. However, the deaf students rarely start school with similar language skills as the hearing ones. According to Luckner, (2012), the deaf students acquire new words at a slower rate, have smaller lexicons, are delayed in their vocabulary knowledge level, and have a smaller range of contexts that lead to less word learning than their hearing peers.

Are the deaf students comfortable using technology in learning English?

The use of technology was found to increase the comfort of the deaf students while learning English. Most of the respondents (80%) claimed that technology improved the comfort of the deaf students while learning English while 20% disagreed. According to Chen-Chung & Yi-Ching (2007), the deaf students have lower motivation to learn, take fewer courses and study less at home as compared to the hearing students. This proves to be a challenge for teachers in provision of after-class learning assistance and care that sustain the students' motivation to participate in continuous activities of learning.

How proficient do you think the deaf students are in English as a foreign language?

Most children in Saudi Arabia grow having Arabic as their main language. With English as a foreign language, many of them learn English from school. The same is applicable for the deaf students. However, it tends to take longer for them to become proficient in English. The study found that 20% of the respondents feel that the proficiency of the deaf students in English as a foreign language is between 0-30%. Majority of the respondents (43.3%) stated that the proficiency was 31-50%, 30% claimed that it was 51-75%, 6.7% claimed that it was 76-100%. Chen (2014) argues that mental barriers make the deaf students communicate poorly with other individuals and have issues receiving information. Moreover, they usually experience anxiety and frustration. They also have low self-esteem in learning and interpersonal relationship.

Has technology improved the learning of English by the deaf students?

It is evident that technology has improved the learning of English by the deaf students. The findings indicated that 70% believed that technology improved the learning of English by the deaf while 30% disagreed. According to DeMoss, (2012), technology has become more affordable, more portable and smaller, which makes them accessible to schools and the deaf students.

Do you think the technology for English learning for the deaf in Saudi Arabia is sufficient?

Although technology has been applied in public schools in Saudi Arabia, more need to be done. Only 46.7% of the respondents believed that the use of technology for learning of the deaf students in Saudi Arabia is sufficient. The majority of the respondents (53.3%) argued that the technology was not enough. Online education for the deaf, for instance, may be encouraged. Debevc, (2011) argue that

consolidation of audio and visual content in a single device, such as a tablet or an iPad, can get rid of the act of juggling experienced by most deaf students in a class.

Conclusions and Recommendations:

The study found that English is the main foreign-language taught for the deaf students in Saudi Arabia. This is due to the aspect of inclusion of students with disabilities in all the aspects of education in Saudi Arabia. However, there is limited application of technology in teaching English for the deaf students. Various types of technologies such as online education, text-oriented and sign language videos were found to be in application in the country. As compared to the traditional sign language, the use of modern technology motivates the deaf students to engage in learning English as a foreign language. The study will have implications for the teaching English for the deaf in Saudi Arabia. Special education needs to come up with more strategies that encourage interaction and inclusion of deaf students, promote literacy, facilitate language development and provide assistive technologies that are capable of enhancing learning outcomes. The study has explored other available technologies for teaching English for the deaf that are also applicable in Saudi Arabia. The study encourages the use of technology in teaching English for the deaf students, in order to increase the literacy levels of the hearing-impaired students in the Kingdom. Consequently, the deaf students can be able to enjoy greater social interaction with other hearing peers.

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