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Communicating with Deaf Students in Inclusive Schools: Insights from Saudi University Faculty*

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ABSTRACT

Purpose: The present study sought to explore styles of inclusive communication with deaf people in mainstream schools by answering the following research questions: a) What styles of communication with deaf students may enhance inclusive education? b) what makes these styles effective? and c) how may these styles be applied? **Method:** This study used a single case design, a key qualitative technique for exploring inclusive styles of communication with deaf people. Semi-structured interviews with open-ended questions were conducted with 10 faculty members specialized in deaf education from Saudi universities to obtain clear data from informants. The informants were chosen using the purposive sampling method. Data was analyzed using data codes applied to the text in accordance with the content analysis method.

Results: Informants demonstrated markedly different perspectives on sign language, spoken and written Arabic, and bilingual-bicultural and total communication philosophies, citing different reasons and conditions. Sign language was the most common approach chosen by the informants because it was the preferred style of communication for the deaf. It was also found that early intervention, type of deafness, the hearing status of the parents, time when an individual became deaf, were other factors that influenced the process of choosing a communication style in a specific inclusive setting. **Implications for Research and Practice:** Although inclusive communication with deaf people is not yet popular in Saudi schools, informants articulated hope that education would become more inclusive. Implications were drawn concerning effective communication practices in inclusive settings for deaf students. The findings offered insights helpful for instructors and education policy makers considering which styles of communication may make education more inclusive for deaf people. Future research is needed into the effectiveness of different approaches to communicating with deaf people in inclusive education across social-cultural contexts.

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Introduction

Making education more inclusive at international level has been one of the most important developments for students with Special Educational Needs (SEN) over the past three decades (Xie, Potměšil, & Peters, 2014). The inclusion of students with SEN is considered 'essential to human dignity and the enjoyment and exercise of human rights' (Unesco, 1994). The signing of the Salamanca Statement in 1994 at the World Conference on SEN marked the first international support for inclusive education policy (Jokinen, 2018). The primary goal of such international educational legislation related to inclusiveness was to ensure that every student had an equal opportunity to complete a general education (Jokinen, 2018). Ainscow (2005) considered 'inclusive education' concerned with the places where students received their education, the quality of the experience they gained through participation, and whether the classroom provided students with SEN the opportunity to achieve their full potential. Ainscow (2005) definition of inclusion involves a process to combat diversity, remove barriers, facilitate students' participation, and remove the issues of marginalization. Inclusive education has thus been accepted as the practice of educating all students, including those with disabilities, together in classrooms with a child-centered approach (Unesco, 1994); it implies modifying schooling to respond to student diversity in ways that help students realize their potential (Doherty, 2012).

Several linguistic and cultural barriers stand in the way of inclusive education for deaf people. Historically, hearing individuals have had a dominant influence over definitions of deafness, modes of communication, and the education of deaf people. The World Health Organization (Organization, n.d.) defines 'deaf' as a profound hearing impairment with complete loss of the ability to hear from one or both ears, implying an 81 dB or greater hearing threshold. The National Deaf Children's Society (Society, 2019) and Batterbury, Ladd, and Gulliver (2007) distinguished between the meaning of 'deaf' with a capital 'D' (Deaf) and 'deaf' with a small 'd' (deaf). 'The deaf' refers to those who experience partial or complete hearing loss at any stage of life; they are audio-logically deaf. This definition includes both deaf and hard-of-hearing children who do not use sign language. However, the word "Deaf" refers to culturally Deaf individuals who share Deaf culture, sign language, and participate in activities for the Deaf community (Alofi, Clark, & Marchut, 2019).

Education of the deaf is also considered a critical issue in the inclusion process. Deaf students have special educational needs that must be considered to make education truly inclusive (Doherty, 2012). Hearing loss and spoken language are vital issues affecting engagement and communication within the wider community (Kermit, 2019), particularly in educational contexts. Traditionally, deaf students have been categorized as students with SEN; however, organizations of deaf individuals have emphasized that they require styles of education that consider their linguistic and cultural needs. (Jokinen, 2018). Inclusion is also likely to be successfully practiced when educators take the following factors into account: accessibility, universal design, non-discriminatory practices, meeting student needs, reasonable accommodations, and individual support (Jokinen, 2018). However, to ensure that educational

environments make learning accessible for students with hearing loss, several other factors of inclusivity should also be considered (Fobi & Oppong, 2019).

One of the factors that pose a major challenge in making education inclusive for deaf students is to determine which styles of communication should be employed to make pedagogy more accessible for this group (Fobi & Oppong, 2019). Teachers in inclusive classrooms with students who are deaf face special challenges related to communication; for example, they devote more attention to students who are deaf than other pupils to ensure that deaf students receive adequate support, and such demands increase the teacher's workload (Doherty, 2012). Nevertheless, a growing number of deaf children attend regular schools as a result of advancements in sensory aid technology (Kelman & Branco, 2009). The main problem in this field is that there is not currently any consensus about the communication style which all teachers should practice with deaf students to ensure inclusive classrooms.

This study aimed to highlight the issue of communication with Deaf Students in Inclusive Schools of Saudi Arabia, from the perspectives of the Saudi university faculty. As the Arabic language does not differentiate between words using an uppercase or lowercase 'd', this distinction is not noted in the Saudi deaf community (Alofi et al., 2019). In this paper, therefore, 'deaf' was used as understood in Saudi Arabia, where this study was conducted. In this context, 'deaf' refers to individuals with severe and profound hearing loss, regardless of whether they use spoken or sign languages, and combines audiological and socio-cultural distinctions, as identified by Senghas and Monaghan (2002). The study also considered the arguments of a few authors which claimed that the communication needs of deaf individuals cannot be met in mainstream schools (Doherty, 2012). It was therefore important to explore what really made education inclusive for deaf students—in particular, what communication approaches were needed to ensure inclusion.

Literature Review

Communication with the deaf

The mode of communication plays an essential role in inclusion, making the context of the inclusion of deaf individuals unique (Kermit, 2019). The term 'communication' is used here to refer to all forms of speaking or signing which deaf students use to socially interact with others. To enhance the learning of deaf students and thus to make education inclusive, it is essential to determine best practices for communication that can help deaf students engage with others, maintain interactions, and build friendships with hearing students (Xie et al., 2014).

Communication with deaf students in Saudi Arabia can be studied under three categories: signing communication, spoken communication, and philosophies of communication. Such means of communication like reading, writing, and different hearing and visual technologies should be considered skills and aids (not categories).

Signing communication

As a method of communication, signing depends on the sign language as a primary language for the deaf. Poe (2006, June 10) defines 'sign language' as a means of communication by which the deaf use their hands to interact with others without using spoken words. This method is visual and frequently used by the deaf community as the first element of their culture (Poe, 2006, June 10). English-speaking countries do not have a uniform sign language (Gravel & O'Gara, 2003), however, by contrast, Arabic countries have a uniform sign language created by the Arab Federation of the Deaf, which promotes the understanding of Arabic sign language. In 2001, the Federation approved the Unified Sign Language Dictionary to enable the entire Arabic deaf community to use Arabic sign language (Alamri, 2017).

As most deaf children are born into hearing families, hearing parents may not have the time or ability to learn sign language to understand their deaf children who use it constantly (Stamp et al., 2014). Moreover, there are few opportunities to use sign language in the hearing community or in inclusive settings with hearing peers. The pressure to adopt this language in isolation has resulted in the deaf becoming segregated from the wider community, posing a challenge to the success of inclusive education (Alanazi, 2020).

Spoken communication

Spoken communication depends on the national language or the community language. The use of hearing aids, hearing training, speech therapy, lip-reading, and cochlear implant surgery, all contribute to the advantages of the spoken method and may be considered aids in spoken communication. Two approaches are of particular interest. First, the auditory-oral approach (AOA), which depends on residual hearing, facing the speaker, lip-reading, and reading aloud and using traditional ways of developing oral communication skills (Hayes, Geers, Treiman, & Moog, 2009). It is based on the argument that mastering spoken language is the actual purpose of educating deaf children and the best way to develop their ability to communicate with the wider community (Hickson et al., 2010). Second, the auditory-verbal approach (AVA), which depends on both speech and hearing skills and is supported by the continuous development of hearing aids and cochlear implants (Hayes et al., 2009). AVA encourages a deaf person to avoid reading lips or facing the speaker (as it happens with AOA), and instead listen and hear sounds (Hickson et al., 2010). The difference between the two approaches is that AVA advocates enhancing hearing and listening skills, while AOA advocates lip-reading (Alanazi, 2020). Spoken communication is thus considered suitable for deaf students in an inclusive setting and in emphasizing a national spoken language. Spoken communication may reduce communication barriers paving the way of the successful inclusion of deaf students.

However, on the contrary, most previous studies have shown deaf students in inclusive schools using signing as the primary mode of communication (Tedla & Negassa, 2019). This phenomenon is supported by several arguments considering the linguistic and cultural aspects of the deaf students. One of the arguments is that the deaf students may like to be independent; by using sign language for communication

and that they do not have to depend on others (Xie et al., 2014). However, it is also maintained that the success of inclusive education may be limited if the deaf culture normalizes signing communication alone (Alanazi, 2020).

Thus, existing empirical literature has identified communication as a principal factor affecting inclusive education for deaf students; however, there exists no consensus about which communication approach facilitates or hinders inclusion (Kermit, 2019).

Philosophies of communication

Existing philosophies about how best to communicate with the deaf consider different communication approaches, languages, cultures, communication aids, and individual needs. These strategies are referred to as 'philosophies' or 'approaches' to communication, and not 'methods,' as the latter are included in the former (Fobi & Oppong, 2019). One of the philosophies is the Bilingual-Bicultural philosophy based on the concept that sign language is the primary language for the deaf and that the deaf can use it to master the language and culture of the wider community. The deaf students use sign language for socialization outside the classroom and beyond the community's spoken language in the classroom (Dammeyer & Marschark, 2016). Through sign language, they can master their national community language as a second language and thus become familiar with two cultures. These developments are essential to the acceptance of the Bilingual-Bicultural philosophy.

Another philosophy, the Total Communication philosophy, is based on the idea that incoming hearing and visual information contributes to deaf students' capacities related to the visual, hearing, and oral elements of a language (Mayer, Marschark, & Spencer, 2016). Total Communication philosophy may include one or multiple communication approaches (e.g., involving hands, oral movements, hearing, reading, lip-reading, or writing) depending on individual needs. This philosophy recommends the use of "a variety of approaches and methods … [sign and spoken communication], Sign Systems including Manually Coded English, speechreading, facial and body language for the purposes of promoting learning and socialization among Deaf and Hard of Hearing students (Fobi & Oppong, 2019). However, some educators recommend the use of different communication methods at the same time, such as sign language and speaking, thus confusing the deaf student as to whether to follow hand signs or lip reading (Alanazi, 2020). Arguably, using a combination of methods at the same time may not represent Total Communication philosophy and is rarely favoured. If speaking is used first, then sign language or another form of communication should be used only after finishing speaking (Schwartz, 1996).

Most Arabic education ministries recommend the use of Total Communication philosophy with deaf students in their special and inclusive schools (Alzahrani, 2005). Given the region's familiarity with the use of Total Communication philosophy, considering this philosophy may help identify which approaches to communicating with deaf students will enable inclusive education in Saudi Arabia.

Early intervention is a considerable factor in the success of communication methods. The use of one of these methods or strategies with the deaf at an early age usually leads to their success in inclusive education and social interaction, regardless of the type of communication strategy used (Mitchiner, Batamula, & Kite, 2018).

Educational context in Saudi Arabia

The history of education in the Saudi context demonstrates the efforts of individuals with SEN to develop appropriate educational provisions for people with special needs. The principles of inclusive education for SEN students are consistent with Islamic values (Hassanein, 2015). This suggests that inclusion existed in Saudi Arabia before the alignment with special schools in the 1950s (Aldabas, 2015). However, at that time, inclusion might have been different from the internationally accepted version, as education in Saudi Arabia took place in mosques and places of worship rather than in schools.

Saudi policies have several laws such as The Law of Persons with Disabilities, Resolution No. 62/119 and The Document of Organizing Special Education) that promote the rights of individuals with SEN (Alquraini, 2010). However, these laws are primarily concerned with 'mainstreaming', offering little clarification about how to apply the concept of inclusion in practice. While some inclusive practices have emerged, they are only for hearing students with minor speech and language disorders (Alanazi, 2020). A more widespread adoption of inclusive practices could improve education for deaf students within the Islamic context by aligning with international developments.

In Saudi Arabia, Islam provides the framework for many aspects of social life in ways that differ from other philosophies or religions (Hassanein, 2015). The Saudi socio-cultural context can be understood as a combination of views involving both the old social stigma and religious acceptance of SEN; thus, its perspective on equality reflects the idea that those with SEN will likely suffer from barriers throughout their lives (Al-hano, 2006). Notably, Islam forbids any kinds of stigma against disabled individuals; thus, such stigma may be a remainder of older social traditions before the Islam.

Western approaches to inclusive education might not be completely compatible with the Saudi context, which differs from the Western setting in several ways, including ethnicity and the fact that Saudi schools have separate branches for male and female students (Arabia, 2021). Nevertheless, recognizing these contextual differences when attempting to define and understand inclusion enables the thoughtful adaptation of Western-style frameworks to the Kingdom of Saudi Arabia, which currently seeks to develop education for individuals with SEN as part of the Saudi Vision 2030 (Arabia, 2021) by enhancing inclusivity in schools in ways responsive to the particular needs of deaf and special needs students within the Saudi community (Alanazi, 2020).

There is a growing argument that all communication methods should be considered to remove obstacles in society that may limit opportunities for deaf

students to be successfully included (Ainscow, 2005). This involves a complex interaction between the child's needs and strengths, and aspects of the social and physical environment that include the educational services provided, demanding mainstreaming and a detailed understanding of the level of need and support required. In the context of Saudi Arabia, therefore, the deaf Saudi students can be engaged in mainstream schools, on full or part-time basis. Before the promulgation of the Provision Code for Persons with Disabilities in 2000, students with hearing loss attended special schools (Aldabas, 2015). This code now demands that mainstream public schools secure professional help and create appropriate opportunities so that students with SEN are included (Al-Mousa, 2010).

Communication styles often influence the process of choosing how to educate deaf students (Xie et al., 2014), particularly regarding whether to place them in special or inclusive schools. Furthermore, interaction with deaf students with communication difficulties or hearing impairments can also enhance diversity in inclusive settings. Most previous studies are limited in application because their findings cannot be generalized. The concept of inclusive education should be applied carefully to a group of people with an independent culture (Holcomb, 2012). As noted above, the nature of communication methods for deaf students may also differ in the Saudi context. Even though there may be pressure to adopt the western concepts of inclusion in Arabic and Islamic socio-cultural contexts, it is important to consider the nuances of Arabic and Islamic contexts, especially the separation between male and female students, which is a significant tradition (Alanazi, 2020). Furthermore, no studies have yet explored the insights of Saudi university faculty members specializing in deaf education regarding inclusive education and communication with deaf students. Current research on this group's perceptions only addresses their preferred communication methods for inclusive education for deaf students. This group is considered to belong to a particular community of practice because they were directly involved in research on deaf education. Communities of practice developed from groups having constant discourses in their workplace contributed to what the members can or cannot discuss (Patel, 2018). Members' experiences, perceptions, and understandings can offer important insights into the development of inclusive education for deaf students in Saudi Arabia. Therefore, there was a need for the current study to focus on inclusive education for deaf students within the Saudi context (Alquraini, 2010); in particular, as noted above, Saudi Arabia's unique separation of male and female students makes it a special case deserving a focused attention. There is also a need to consider other important factors that make classrooms more inclusive for deaf students for communication (Fobi & Oppong, 2019). Based on this review, this study sought to respond to the existing gaps in the literature by identifying existing communication styles with deaf people in inclusive Saudi schools, to find out what made different styles effective and how these styles may best be applied.

Method

Research Design

This study sought to identify the communication approaches of the deaf in inclusive classrooms. For this purpose, a case study approach was utilized, which

ideally suits a qualitative research study. The qualitative research design is defined as 'research investigating the words and actions of the informants in a descriptive and expressive way to better describe the situations experienced by the informants' (Maykut & Morehouse, 2002). Qualitative research design employs methods distinct from those used in quantitative designs, which gather data on naturally occurring phenomena. In this study, data were gathered using semi-structured interviews and analyzed using inductive analysis.

The Communities of Practice theory was outlined to ontologically position the theoretical perspective of the present study. It included all communities that were practicing their function, together with the social relations (Wenger, 1998). In the interpretive paradigm, epistemology involved all knowledge and therefore all meaningful reality, while the positivist approach assumed that there was only one reality and sought to reveal generalizable truths (Crotty, 2020). Hence, the study was underpinned by the epistemological assumption that the specialized faculty members in Saudi universities constructed reality socially by their experiences, perceptions, and understandings (Kaplan & Maxwell, 2005).

Research Sample

The purposive sampling method was used to identify the informants. Interviews with 10 faculty members of Saudi universities were conducted, with two informants from each region (i.e., north, south, east, west, and central). Furthermore, each informant assisted with the snowballing approach in sample selection, identifying informants who had completed a doctoral degree in Deaf Education and conducted research in this field, with a wide knowledge of published studies. The faculty members in Saudi universities were considered to belong to a particular community of practice because all were directly involved in research and practice in mainstream schools attended by deaf students (Patel, 2018).

Data Collection Instruments and Procedures

Semi-structured interviews were used with open-ended questions. This method allowed informants to frankly express their views. To prepare the questions, the existing literature was reviewed and subsequently, interview forms were generated comprising six questions related to the aims of the study. The forms were first examined by two experts in qualitative research for their validity. After the experts presented their feedback and the pilot application was completed, the forms took their final shape. The semi-structured interviews were conducted with a voice-recorder. The interviews were completed in 20 days during the first semester of the 2020–2021 academic year. The only question that was mandatory for informants to answer was 'What communication styles could be used with deaf students in inclusive education?' The informants were interviewed in 10 meetings, and each semi-structured interview lasted between 45 minutes and one hour.

Data Analysis

After data generation, the data was immediately transcribed into Arabic. All interviews were recorded and analyzed using a thematic analysis technique, a process whereby themes, sub-themes, and issues are used as separate headings to classify data

(Miles & Huberman, 1994). Three steps were followed to reduce and code the qualitative data, as suggested by Miles and Huberman (1994).

First, an initial coding was done based on themes identified in the literature review; next, the patterns from the coding were identified and the coding notes were reformulated. In the end, a model of perceptions was constructed by considering differences, similarities, and consistency in the data. The Nvivo program was used to interpret and decode the audio recording transcripts. The transcribed data was then transferred fully into a computer program (MSWord). The coded data was grouped under appropriate themes in line with the research objectives.

Several precautions were taken to ensure the cogency, consistency, and objectivity of the findings (Yin, 2003). As noted above, content validity was confirmed by an expert review; the interview form was finalized only after expert consultation. Moreover, to ensure the validity and reliability of the study, the informants' characteristics were defined, and who were provided with detailed information about data collection and analysis, as recommended by Bryman (2016). Furthermore, the informants' views were directly quoted in order to maximize reliability.

Approval of the ethical committee of the university was granted, the name of the university is withheld for the anonymous review process (Human Research Ethics Committee, ERN_16-0458). The informants were informed of their roles while assuring them of complete anonymity and confidentiality.

Results

A summary of demographic characteristic of the informants is supplied in Table 1. The informants were aged between 36 and 50 years and had previously worked as teachers in special and mainstream schools for the deaf for between 3 and 12 years. All informants had studied abroad and earned doctorates in countries with universities approved by the Saudi Ministry of Higher Education. To achieve maximum diversity, as recommended by Meriam (2013), 6 informants were male, and four were female. The educational system in Saudi Arabia is unified; thus, the educational contexts for deaf students may not significantly vary across regions (Arabia, 2021).

The findings reveal informant perspectives about how best to practice inclusive education for deaf students based on their experiences in Saudi Arabia's unique socio-cultural context. In each case, faculty members were coded (FCM) and numbers (from 1 to 10) were added after the code to differentiate between them. Issues related to communication with deaf students in inclusive settings were particularly prominent in the interview data. In reporting these findings, illustrative quotations were used to capture textual accounts. As the number of informants was relatively small, all interpretations were considered tentative. The 10 faculty members varied in their perspectives and reasons for choosing communication methods. Furthermore, their responses referred to multiple modes of communication and, sometimes, multiple meanings in a single answer; therefore, informants' codes appeared frequently under different themes and were often associated with different issues.

Table 1

Informants' Demographics

	Age	***Education***	***Region***	***Experience with deaf students***	***Country of Doctorate***	***Designation***	***Gender***
FCM1	*45*	*PhD*	*North*	*12*	*USA*	*Assistant Professor*	*M*
FCM2	*36*	*PhD*	*North*	*3*	*Australia*	*Assistant Professor*	*F*
FCM3	*40*	*PhD*	*Central*	*5*	*UK*	*Associate Professor*	*M*
FCM4	*50*	*PhD*	*Central*	*6*	*USA*	*Professor*	*F*
FCM5	*45*	*PhD*	*West*	*9*	*UK*	*Associate Professor*	*M*
FCM6	*38*	*PhD*	*West*	*7*	*USA*	*Assistant Professor*	*M*
FCM7	*44*	*PhD*	*East*	*10*	*USA*	*Assistant Professor*	*F*
FCM8	*46*	*PhD*	*East*	*11*	*UK*	*Assistant Professor*	*F*
FCM9	*41*	*PhD*	*South*	*5*	*Australia*	*Associate Professor*	*M*
FCM10	*43*	*PhD*	*South*	*10*	*UK*	*Assistant Professor*	*M*

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Sign language

Sign language communication was the most common approach for the inclusive settings chosen by the informants. This method was chosen by the majority (eight) of

the informants as one of the options. For instance, one informant said, 'I would choose sign language primarily, whatever the programme of provision was' (FCM1).

Another stated, 'I have no doubt that sign language would be the most useful' (FCM3). 'I would talk about sign language first as appropriate' (FCM7). Another informant reported that 'No one can neglect the effectiveness of sign language in the practice of inclusive education for the deaf' (FCM10). These eight informants were asked to defend their choices. Their answers varied. Some considered sign language easier for deaf students to use. For example, one informant said, 'It is very easy to practically use it for the deaf' (FCM3). Another explained that '[s]ign language is the first and mother language for them' (FCM7). Meanwhile, another stated that '[t]he deaf learn [sign language] innately and naturally' (FCM1). However, two informants believed that sign language may not generally require intervention. For instance, one stated, 'It does not require an early intervention if the child enrolls in school late or misses this critical time of his/her age' (FCM6). Another informant said, 'Deaf children will learn sign language whether they have received early intervention or not' (FCM10).

Another question was related to hearing aids and devices, with informants reasoning that their absence may not constitute a barrier to learning or using sign language in inclusive settings. One informant explained, 'The deaf can learn using sign language without the need for hearing aids or surgically implanting an electronic cochlear' (FCM5). Another said, 'Moreover, teachers do not need to use learning aids as much as with other communication methods' (FCM4). Deaf students' rights were mentioned by one informant, who believed that students had the right to choose sign language as their preferred form of communication in school: 'Choosing the communication approach with deaf students in schools is the right of the deaf students, and I strongly believe that they prefer sign language over the other options' (FCM9).

In addition to the responses above, a useful perspective from one informant was related to the socio-cultural and educational contexts of the deaf in Saudi Arabia. 'If the inclusion of the deaf is required to be implemented immediately in Saudi Arabia, my view is that the use of sign language may be the best choice. However, we still need to coordinate other requirements, such as early intervention and factors related to training and school buildings' (FCM6). The informants who selected sign language were also asked how this method should be employed in classrooms. An analysis of their responses revealed several conditions for successful sign language communication in inclusive educational settings. First, there should be an appropriate visual environment in inclusive schools with adequate lighting and visual materials for learning and teaching. As the informants reported: 'Sign language is the language of the eyes; the classroom should have large windows with electric lights' (FCM5); 'All visual stimuli, such as samples, learning tools, computers, and other electronic devices, are useful means in inclusive schools communicating through sign language' (FCM4); and 'All the facilities in the school building should display descriptive signboards containing pictures or signs to be recognized by the deaf' (FCM9).

Table 2

Themes and Codes of Communication Styles

Themes	**Sub-themes**	**Coding Framework**	**Coding label**
Sign language	1-Reasons	Easier for deaf students to use	EX1.1
		Does not generally require intervention	EX1.2
		Does not require hearing aids and devices	EX1.3
		Deaf students' rights	EX1.4
		Easily applicable	EX1.5
	2-Conditions	Appropriate visual environment	EX2.1
		Professional training	EX2.2
		Early intervention	EX2.3
Arabic language	1-Reasons	Original language of the wider community	EX3.1
		Difficulty of sign language for hearing people	EX3.2
		Has more than input and output	EX3.3
	2-Conditions	Early intervention	EX4.1
		Engaging the student socially	EX4.2
		Hearing and visual means	EX4.3
		Modern teaching methods	EX4.4

Table 3

Themes and Codes of Communication Styles

Bilingual-bicultural and total communication philosophies	1-Reasons	Modern philosophies	EX5.1
		Useful when implemented with the deaf	EX5.2
		More than communication and teaching methods	EX5.3
		Helpful compromise	EX5.4
		More comprehensive	EX5.5
		Particular strategies or teaching methods	EX5.6
		Two cultures	EX5.7
		Two or more methods in one language	EX5.8
	2-Conditions	Early interventions	EX6.1
		Familiarity with sign language	EX6.2
		Deaf culture representatives	EX6.3
		Range of communication methods	EX6.4
		No overlap by using two methods together	EX6.5
		Preferred communication method	EX6.6
Factors influencing the choice of communication styles in inclusive settings	Factors	Availability of early intervention	EX7.1
		Type of deafness	EX7.2
		The hearing status of the parents	EX7.3
		When an individual became deaf	EX7.4

Another important issue discussed was professional training. The informants believed that training should be provided to everyone who was in contact with deaf students in school and the wider community. For instance, one informant felt that 'sign language should be taught to … regular teachers, hearing peers, family members, school staff, and all professionals who provide services' (FCM3). The informants felt that the issue of sign language training was vital, particularly regarding regular classroom teachers. FCM1 figured pre-service training for regular teachers as essential: 'I believe that the academic plan for all regular teachers who want to work with deaf students should include one course in sign language each semester to promote inclusion' (FCM1).

The perspective of in-service training was considered to be a helpful solution for the current situation in Saudi Arabia, where there were generally no courses in sign language or special education during pre-service training for regular classroom teachers. With research into the needs of individuals with disabilities evolving, FCM6 believed that in-service training should be required for all educators who had graduated a long time ago. The informant said, "Regular teachers know exactly what they need to be trained in. If the teacher had graduated 10 years ago, there was plenty of knowledge that he/she would have missed. I think that the emphasis should be on continuous training during service, in which skills such as sign language could be developed." (FCM6)

Although some informants justified their preference for sign language on the basis that it may not require early intervention, others viewed the early promotion of sign language learning in the first five years of a deaf child's life as essential for successful inclusion in later life. An informant emphasized, "Over the last two decades, a newborn could not leave the hospital in Saudi Arabia without having hearing tests; however, after these tests, many Saudi parents miss the critical period in their child's learning of a language. This period is important to the success of learning sign language and, in turn, the child's ability to fully engage later in school. Deaf children could achieve so much more if this period was taken advantage of to learn sign language successfully." (FCM10)

Arabic language

As sign language is an independent language, seven of the informants viewed the Arabic language, both spoken and written, as entirely different from sign language. It was apparent that deaf students used Arabic as an essential language for interaction, whether spoken or written, and it was a useful communication option for the deaf in the Saudi inclusive educational context. One informant explained, 'The domestic Arabic language is my preferred language for communication with the deaf in inclusive regular classrooms, both in terms of vocal and hearing input by speaking and silent input by reading, writing, or lip-reading' (FCM8). The informants reported different reasons for selecting spoken and written approaches to the Arabic language. Some viewed Arabic as the original language of the wider community, including the deaf: 'It is the language of the wider community' (FCM5); 'It is the community's language, which would include the deaf' (FCM9); and 'Most of the deaf belong to

hearing families' (FCM4). Others said that learning sign language could be difficult for hearing people: 'The parents, hearing peers, and regular teachers might not find the time to learn sign language' (FCM10); and 'It is difficult to teach sign language to the entire community for one deaf person' (FCM6). Lastly, two informants reasoned that the Arabic language had more than input and output, arguing that 'The Arabic language can be read, written, spoken, and heard through hearing devices' (FCM8) and that 'We cannot write sign language, so families may not be able to review lessons or follow up with their deaf child at home' (FCM2).

Another important issue was the modality or conditions to be considered in relation to communication through spoken language in inclusive classrooms. The first of these conditions, which occurred prior to attending school, was early intervention. As suggested above, relevant findings related to this issue called for exploiting the critical period of learning a language, the first five years, by introducing hearing and linguistic interventions directly after the early detection of deafness or hearing impairment. In addition to FCM10's argument above that intervention should continue well after the hearing tests for newborns required by Saudi hospitals, other informants advised that parents should be 'working immediately to compensate for hearing loss' (FCM6) and 'constantly speaking and communicating with the child during the first five years of his/her age for the purpose of linguistic enrichment' (FCM2). Of course, the potential for such intervention depended on 'the extent of the parents' collaboration with the early linguistic intervention team and their consideration of the team's instructions' (FCM8).

The next condition was associated with schoolwork. The relevant issues related to spoken and written approaches to the Arabic language and its success when used with deaf students. The informants referred to certain conditions that should be considered in inclusive schools and classrooms, such as 'engaging the student socially on all occasions, whether curricular or extracurricular' (FCM9); 'using a range of hearing and visual means to help maintain longer conversations with students and enhance their spoken language' (FCM5); and 'modern teaching methods to summarize and clarify the language in the curriculum and preserve the original content as much as possible' (FCM4).

Bilingual-bicultural and total communication philosophies

Relevant to this theme were two philosophies outlined earlier in the Introduction: Bilingual-Bicultural philosophy and Total Communication Philosophy. One informant stated that 'Bilingual-Bicultural philosophy would be better in inclusive classrooms' (FCM5), while another noted that 'Total communication was successfully experienced in the Saudi deaf context, so it is one of my favorite options to communicate with deaf students in inclusive education' (FCM4). The informants' reasons for selecting these philosophies differed; however, they agreed on the shared advantages of Bilingual-Bicultural philosophy and Total Communication philosophy, advising that 'They are modern philosophies and are useful when implemented with the deaf' (FCM10); 'They include more than communication and teaching methods' (FCM6); 'They could be a helpful compromise for the known dispute between signing and verbal approaches'

(FCM9); 'Both spoken and signing methods are helpful and can benefit deaf students' (FCM2); 'The philosophies are more comprehensive (FCM7); and 'Total Communication philosophy and Bilingual-Bicultural philosophy include particular teaching methods within their strategies, which are considered successful with the deaf' (FCM8). One informant singled out Bilingual-Bicultural philosophy, commenting that '[i]t includes two cultures as sources for learning social and daily life skills' (FCM5). Another informant singled out Total Communication philosophy, noting, 'You could use two or more methods in one language, such as switching between writing and speaking in the wider community's language, or descriptive signing and signal finger alphabet' (FCM4).

Regarding modality, that is, how to use these philosophies in inclusive schools, one informant helpfully summarized the conditions in which Bilingual-Bicultural philosophy should be used: "There should be early interventions to use sign language in the preschool period; then, in school, regular teachers should be familiar with sign language to teach Arabic language to deaf students. There should be adults who are deaf, such as teachers or counsellors, or have deaf-related experience, to provide deaf culture. Deaf culture representatives should be familiar with deaf students in the wider community culture." (FCM5) FCM4 also commented on the Total Communication philosophy modality to be used in inclusive education settings: 'Teachers should know a range of communication methods but ensure that they use each method separately. There should be no overlap by using two methods together, such as signing and speaking at the same time.' FCM8 added that '[o]ne should consult the deaf student and his/her family regarding the preferred communication method used in Total Communication philosophy.'

Factors influencing the choice of communication styles in inclusive settings

The presence of different factors affecting the process of choosing a communication approach with deaf students must be considered before choosing a communication method or philosophy. These factors appear at an early age in the deaf child's life and are concerned with their receptivity to the various methods. The availability of early intervention was seen as an important factor that supported all methods of communication. One informant noted that '[t]he early intervention for any approach could make it successful, whether it is speaking or signing' (FCM10). Another explained that '[e]arly signing intervention is a critical reason for adopting Bilingual-Bicultural philosophy in inclusive education' (FCM5). However, regarding early linguistic interventions in spoken language, FCM2 said, 'There is no chance that deaf students will acquire the Arabic language without early hearing and linguistic intervention, so this absence works in favor of signing communication.'

Another factor to consider was the type of deafness or the specific affection that the deaf students experienced. Specifically, one informant explained, 'If the injury is in the brain or hearing nerves, the benefit of a cochlear implant or using other hearing aids will be low, so this situation would favor the use of sign language' (FCM7). The hearing status of the parents was also seen as a factor: 'Most deaf students belong to hearing families, which could be viewed as an argument for using spoken language

with the deaf' (FCM4); and 'The deaf children from deaf parents are superior in sign language' (FCM3). Two other informants highlighted the issue of when an individual became deaf, whether it was before acquiring spoken language or after. One explained, 'Most of the deaf students who were born deaf used sign language anyway' (FCM1). Another noted that '[i]f the injury occurred after the age of five, deaf people could easily use the spoken language' (FCM9).

Discussion

The discussion should be understood in the light of this study's objectives. As noted above, this study sought to uncover insights into best practices for communicating with deaf students to support Saudi policy and practice in favor of inclusive education. To obtain data, faculty members in Saudi universities interviewed. These informants had doctorate degrees, previous experience in deaf mainstream schools, and research knowledge in the field. The findings revealed encouraging perspectives among the informants, who advised that multiple communication methods should be used to successfully facilitate inclusive education for deaf students in the Saudi context. The communication approaches recommended were sign language, spoken and written Arabic, Bilingual-Bicultural philosophy and Total Communication Philosophy. These approaches were consistent with the communication methods and philosophies discussed in the Introduction.

All these approaches have been used successfully with deaf students in special and integrated classrooms in the Saudi educational system (Alanazi, 2020; Alofi et al., 2019; Alzahrani, 2005), except for Bilingual-Bicultural philosophy. The analyses also revealed the factors influencing the process of choosing the communication method in inclusive settings. The factors reported by the informants were also in accordance with the critical factors discussed in the Introduction, which often impact the educational and communicational options for deaf students, whether in special or inclusive schools (Mitchiner et al., 2018). The findings clearly highlighted the role of interrelated contextual factors and supported the argument that communication and inclusive education for deaf students are complex issues affected by diverse background factors which need to be interpreted with caution.

Bilingual-Bicultural philosophy was arguably chosen based on informants' international experience with deaf education during their studies and knowledge of follow-up research in this philosophy and its beneficial results. Generally, the informants argued that Bilingual-Bicultural philosophy could be appropriate for use with the deaf in the Saudi inclusive context, as its conditions or modality might not be difficult to implement. The most interesting condition regarding the successful application of this philosophy was an early linguistic intervention with sign language (FCM5), which might be achievable as early hearing loss detection tests are performed in Saudi Arabia (FCM10). The informants may have considered that Bilingual-Bicultural philosophy could be applied in Saudi Arabia because of its similarities with the already existent Total Communication Philosophy. The latter used two languages:

Arabic and sign language. Bilingual-Bicultural philosophy, however, was likely to also respond to cultural nuances and the need for early linguistic intervention.

Another critical finding of this study was the informants' perceptions of the different factors affecting the process of selecting a communication method for an inclusive education for deaf students in the Saudi context. The informants perceived that the availability of early intervention, awareness regarding the type of deafness, the hearing status of the parents, and the age at which hearing loss occurred were essential factors affecting communication and interaction with deaf students. These factors were significant in realizing the interactional support required to improve communication in school environments in ways that made them more inclusive and diverse. Diversity recognized the presence of deaf students who had communication needs and required forms of support for interaction; indeed, hearing students could also benefit from this support as well as the experience of heterogeneity (Shyman, 2015). The informants expressed that these social communication-related factors were more influential than internal human-related factors, such as those causally connected to hearing loss or disability.

The data from Table 3 highlight the potential of different strategies for communicating with deaf students in Saudi Arabia in inclusive schools and reveal factors affecting the selection of a communication method. When early interventions were enabled by the required provisions and supports, the deaf were able to successfully communicate in the classroom and excel just like any other students. Stakeholders in deaf education in Saudi Arabia may benefit from working towards inclusive education by recognizing all potential communication styles for deaf students. Regular teachers in inclusive schools need to be trained to communicate effectively with deaf students in all academic and non-academic actions at all levels of education. Similarly, deaf students should be taught Arabic languages to help them to improve their communication as part of the national curriculum and wider community language strategy. These changes would enhance the skill development of deaf students and, along these lines, enable their pursuit of further education. Further, the government needs to establish linguistic centres focusing on communication and language for the deaf to join from an early age. By enhancing the linguistic and communicational aspects of life for the deaf, we can increase their opportunities for social interaction and make both the school and the wider community more inclusive.

Conclusion

The most important limitation of this study is that it dealt with only the Saudi deaf community, which limits the generalizability of its findings. Based on the findings of this study, implications and measures could be taken to improve inclusive provisions and interactions for deaf learners in Saudi Arabia. Examples of successful international practices and policies could potentially be adapted for the Saudi educational system, such as early linguistic intervention, including early sign and spoken language instruction; an assertive programme to address communicational and interactional challenges with the deaf; official training to improve sign language, social skills, and

awareness by providing courses for deaf students, peers, families, teachers, counsellors, and all who are in contact with deaf students in inclusive settings. Role models can also be provided for the deaf and who interact with the wider community. The implementation of these measures would require a certain amount of funding to include the following: introducing pre-school spoken and sign language instruction to deaf children and establishing communication training centers to train the wider community that interacts with and supports deaf students.

The policy makers and educators should consider the recommendations of this study as they assess the positive impact of inclusive provisions for deaf students and for preparing prospective teachers. Notably, this study explored only inclusive education for deaf students, and more research regarding inclusion for other categories of special education is required. Researchers would do well to conduct studies in their specialties to offer insights into best practices for monitoring and addressing all students' needs for inclusion. Additionally, further studies should be conducted on special education beyond the context of Saudi Arabia.

Declaration of Interest

There are no conflicts of interest to declare.

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