

A Case Study Exploring Effective Pedagogical Practices in Teaching Art and Design Hearing-Impaired Students in Bahrain

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Abstract: Although the education of hearing-impaired students has significantly progressed towards achieving quality education in many countries, it is not yet clear in Bahrain how their education should be managed. There is a scarcity of research about the way that art and design can effectively be taught to the deaf. Moreover, there seems to be a misconception that art and design can be easily taught to people with hearing impairments. However, there may be challenges that could prove this assumption to be incorrect. Therefore, this paper attempts to examine the challenges faced by hearing-impaired students and to recommend how best educators can help them overcome these challenges. The research employs a descriptive case study method to collect data from a hearing-impaired Art and Design student, in order to identify the difficulties she encountered, the preferences she had, and the approaches she used to facilitate her educational experience. The paper aims to find and recommend effective approaches to implement teaching strategies that Art and Design educators in Bahrain can use in order to empower these students. It also aims to investigate how their peers can best help them integrate more easily into the classroom and comfortably coexist within an educational setting.

Keywords: Art, deaf, design, education, hard-of-hearing, inclusive education.

1 Introduction

The number of people with hearing impairments in Bahrain is 8000 [1], of which many students are registered in the schools of the Ministry of Education and the rehabilitation centers associated with the Ministry of Labour and Social Work. The Shaikhan Al-Farsi Comprehensive Speech Centre of the Ministry of Labour and Social Development for Deaf Children's Education was inaugurated in the elementary and preparatory stages. In 2015, twelve deaf students were enrolled in the secondary school for the first time in Bahrain's history Al Ghaeb, R. [2]. The Bahraini government and the Ministry of Education have provided various facilities, resources, and services such as special centers, integrated education in high schools as well as trained teachers and interpreters that aim to provide them with suitable educational opportunities. The University of Bahrain is currently seeking to continue to pave the way and support the endeavors of the Ministry of Education to establish equal opportunities for its deaf and hard-of-hearing students at different levels of education. These students are gifted with abilities that do not preclude them from taking part in the community. In fact, they are close to society and can participate in its activities despite their hearing impairment.

Despite all the efforts, there seems to be a shortage of qualified skilled educators and interpreters to help deaf and hard-of-hearing students in Bahrain. More systematic and research-based efforts need to be undertaken and implemented, particularly in developing appropriate learning materials and applying effective teaching and assessment strategies in order to provide students with more productive and creative learning experiences. Deaf and hard-of-hearing students are experiencing challenges in most higher education institutions in Bahrain. Some universities that enroll them do not necessarily cater to all their special needs. When deaf students receive inclusive education at a university, sometimes they do not have an interpreter or any assistive technologies or applications in the classroom. Some of their challenges are not discovered and resolved until too late. As a result, their hearing impairment may become an obstacle to their learning process. This research paper attempts to explore the challenges faced by hearing-impaired students who study art and design in higher education institutions and to suggest how best educators can deal with these challenges and help students in overcoming them. It focuses on enhancing learning ability among deaf and hard-of-hearing students who study art and design by exploring the most effective classroom practices and pedagogical approaches. The objectives are to identify the

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current global practices and useful assistive technologies in teaching hearing-impaired students and to analyse the impact of non-disabled students' assistance and cooperation on facilitating their hearing-impaired peers' achievement of the intended learning outcomes. In order to achieve its objectives, the research uses a descriptive case study method to extract information from a deaf student who is enrolled in the BA Art and Design Program at the University of Bahrain. The research methodology is based on observation and interview techniques to gain insights, from the deaf student's perspective, in order to explore and investigate her experience of inclusion within a mainstream classroom, her perception of the way teachers teach her, and the aspects and approaches of inclusion that she finds most effective to learning art and design. Such an in-depth investigation into the student's educational experience will be of interest to educators, parents, and all those involved in the deaf students' inclusion debate.

This section lays out the problem, significance, objectives, questions, and methodology of the study with an introduction and overview of education of hearing-impaired students in Bahrain. The second section contains a theoretical overview of deaf education and effective art and design classroom practices, teaching strategies, assessment methods, and classroom environment. The third section involves an analysis of the findings of the case study which was based on a discussion with the student and her educators, parents and siblings regarding the requirements of the art and design courses as well as her experiences and the challenges she faced. The main aim is to determine if there are ways that the course materials, teaching strategies, and assessment methods can be improved or modified so that the hearing-impaired student can participate in what may become a stimulating and rewarding learning experience for all concerned.

1.1 Research Problem & Significance

Due to their hearing impairment, deaf and hard-of-hearing students in an art and design classroom may face many challenges and may require highly specialized technologies and tailored teaching and assessment strategies to help them learn effectively. However, some policy-makers and stakeholders may assume that art and design programs are suitable for deaf students due to the reliance of these disciplines on visuals, but these stakeholders may not be fully aware of the challenges that may hinder deaf students' learning or the needs that would support and facilitate their learning process, particularly in an art and design classroom. In this research, an analysis of the experiences and the challenges that students face when learning art and design subjects will be discussed in an attempt to find and recommend the most effective services, technologies, and resources that higher education institutions, especially in Bahrain, should provide for their deaf art and design students. Moreover, art and design educators in Bahrain need guidance and recommendations on how to devise

teaching methodologies and alternative assessment approaches that cater to the needs of deaf students. In addition, non-disabled students may play a very significant role in supporting their deaf peers if sufficient light is shed by researchers on their important role and adequate recommendations are provided to guide their cooperation and interaction with deaf students.

1.2 Research Objectives

The research aims to achieve the following objectives:

- (1) To provide a set of recommendations that may inform the inventive and effective use of teaching approaches and assessment strategies by art and design educators to guide their endeavors to support their deaf students.
- (2) To identify the difficulties and challenges faced by a deaf art and design student at the University of Bahrain, and her attitudes and preferences while learning.
- (3) To explore the most effective approaches the deaf art and design student used to facilitate her educational experiences.
- (4) To identify the best practices and effective approaches to enhance learning ability among deaf and hard-of-hearing students in art and design educational contexts.
- (5) To investigate and suggest how deaf students' non-disabled peers can best help them integrate more easily into the classroom and comfortably coexist within an art and design educational setting.

1.3 Research Questions

The research aims to investigate the following questions:

- (1) What are the most inventive and effective teaching strategies and assessment approaches and considerations that art and design educators can employ to support their deaf students?
- (2) What are the challenges faced by deaf art and design students?
- (3) How can non-disabled peers best help deaf students integrate more easily into the art and design classroom?

2 Methodologies

For this study, a fourth-year deaf student enrolled in the BA Art and Design Program at the University of Bahrain is selected to be a subject of research and qualitative analysis. A case study is carried out involving interviews with the student, her mother, sister, colleagues, and educators. The interviews were recorded and then transcribed. Five instructors from The University of Bahrain who taught this student were purposively selected and interviewed. In order to achieve the objective and to answer the research question, the method of observation is also used to observe the actual situation, performance, behavior, and challenges of the deaf

student in the classroom environment. This study was completed over a one-year period.

3 Theoretical Overview; Deaf Education and Effective Art and Design Classroom Practices

Years of research and development have provided educators with effective tools, devices, strategies, and classroom practices for maximizing the abilities and optimizing the learning experiences of hearing-impaired students. Today, there is an abundance of resources on theory and practice related to deaf students and numerous opportunities exist for deaf education in general. However, there is a dearth of information and research that may guide educators on the most effective strategies and practices for deaf education in art and design. An educator's responsibility is to implement evidence-based effective approaches to meet deaf students' individual needs. These approaches, which may involve the implementation of creative teaching and assessment strategies, the use of advanced assistive technologies, and suitable adjustments to the classroom environment, can make the difference between a student's success and failure.

3.1 Teaching Strategies

There is a wide range of teaching strategies that can assist deaf students to learn and may significantly increase the learning development process. The following are some of the strategies that may enable students to have a facilitated educational experience. These strategies are based on a literature review [19, 13] of some of the most common educational approaches:

- Students must be encouraged by their instructors to sit in the front of the classroom in order to have an unobstructed line of vision. This will make it easier for students to learn especially if they are using an interpreter or a hearing aid with a limited range, or if they depend on lip-reading or on visual clues.
- Instructors must ensure that any background noise is minimized in order to allow students who have varying degrees of hearing ability to concentrate.
- Instructors must repeat any questions asked by their students and must also repeat their answers to ensure that all students realize the information conveyed.
- Instructors must not speak when facing the blackboard in order to allow students to lip-read. They must not talk when handing out papers, and must not pause before heading into a new subject in order to give students enough time to understand the preceding topic [19].
- Instructors – with the help of teaching assistants or interpreters – must provide students with a digital copy of the lecture information beforehand. They must also provide printed handouts that list key points of the lectures [19] and supplement all the sessions and activities with lecture notes.

- Instructors must use various websites, apps, and technologies to bridge the gap and make learning easier.
- Instructors must provide students and their interpreters with lists of the subject-specific jargon and technical terms early in the course.
- Instructors must aim to display videos or films that are captioned, whenever possible.
- Instructors must try, with the help of their assistants, to control the discussion so that only one student speaks at a time.
- Instructors may allow interpreters to present students' projects.
- Instructors must encourage students to work with each other and to work in groups for regular activities.
- Instructors are advised to offer assignments that incorporate visual media such as YouTube and Lynda.com

3.2 Assessment Methods

There are some assessment approaches and recommendations that can facilitate the evaluation of deaf students' work and their assessment process and experience. These approaches include the following:

- Instructors must consider alternative forms of assessment where necessary.
- Instructors may consider allowing the use of a thesaurus or dictionary during exams as well as a personal computer with spelling and grammar functions, where relevant and necessary.
- Instructors must provide alternatives to assignments and projects which are based on interviews or questionnaires.
- Instructors must provide extra time in examinations, particularly extra time for reading questions and must allow interpreters to interpret questions and instructions in sign language.
- Instructors must conduct research to determine the most effective assessment approaches for the deaf and hard-of-hearing.

3.3 Classroom Arrangement and Layout

The design of the physical classroom and learning environment for deaf and hard-of-hearing students is a vital factor that all universities must take into consideration. Parameters and elements including seating arrangements, space, lighting, and acoustics must be addressed. The classroom must consist of the elements required to facilitate the learning experience whilst minimizing the obstacles and challenges caused by lack of hearing in order to allow students to have equal access to learning. The architectural environment must consist of elements of design that meet the specific needs of deaf students because they need an unhindered line of sight. If the students use lip-reading or

an ASL interpreter, it can be difficult to keep up with a class discussion if their desks are arranged in rows and columns [13]. Arranging desks in a circular or arc shape (Fig. 1) can create an accessible classroom environment that makes it easier to follow the lecture combined with other visuals as well as interact with the instructor and other students. It also makes it easier for participation, engagement, and visual access.

Hearing-impaired students have varying degrees of deafness and therefore different needs; for some of them, the presence of interpreters is crucial, while for others, having access to the face of the instructor during class may be more important. According to Martins and Gaudiot [11], it is also important to allow deaf students to have constant communication within and outside the classroom through glass displays at the doors to prevent the clash between people because they are unable to hear or realize the presence of a person on the other side of the door. They also indicated,

“The use of mirrors in the corners of the walls helps the view of who comes in the opposite direction in a corridor, or within the classroom, allowing students to communicate with the room and with the others. The size of the board is also relevant to the student because depending on where they are seated they may lose much of what is written. Besides deaf student requires more time to write and watch the classes. Moreover, teachers complain about the lack of space on the board for more and better visual display of the topics discussed” [11, p.3665].

In general, the classroom layout and the placement of furniture should consider the flow of the students, instructors, and interpreters in efficiently performing their tasks. The environment should be designed in such a dynamic way that allows the configuration of spaces for various teaching approaches and strategies. According to Martins and Gaudiot [11, p.3665];

“Being a “visual” individual, a deaf student may not be able to learn in a traditional layout of classrooms where the benches are lined and the teachers are in front with the board. If the deaf student is placed behind the front row, can have his vision blocked by the students in front of him, and if placed in front will not see what is happening in the rest of the room, losing the discussions between the other students and the teacher. Another student question may go unnoticed by a deaf student, as well as an enlightening discussion of an important subject. The positioning of the interpreter is also fundamental to the layout of the classroom since it is the point of contact between the deaf student and teacher. He must see and be seen by both students and teachers.”

Having a large number of students is not advisable as it will require more rows of chairs and will make it difficult to have a dynamic classroom space that allows for a U-Shaped seating arrangement. Fig. 1 displays some possible deaf-friendly settings based on the Deaf Space

Guidelines suggested by Heinrich [7].

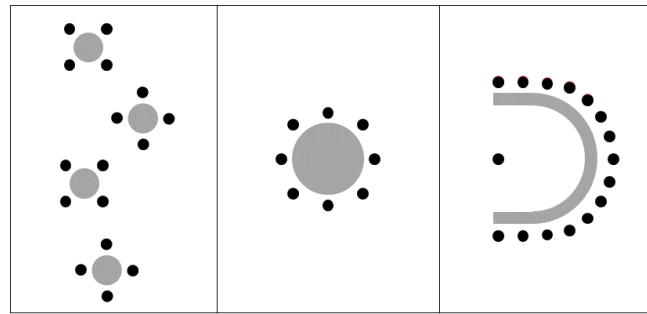


Fig. 1: Some possible deaf-friendly settings based on the Deaf Space Guidelines suggested by Heinrich [7]

In order to maintain clear and unobstructed visual communication, deaf students prefer to stand at a distance where they can see facial expressions, gestures, and signs by their instructors or interpreters. The space between them and the interpreter must be greater than that of a verbal conversation in order to allow them to see the full signing space. As they work in groups with other students, the space between them must increase to allow visual connection and interaction among all parties.

A study by Guardino, Caroline & Antia, and Shirin [6] showed that modification of the class environment by changing seating arrangement, classroom organization, acoustics quality, and visual stimulation resulted in an incline in academic engagement and decline in misbehavior. The class layout has a great impact on students' participation. Enhancing the traditional classroom environment can be achieved in many ways including the following ways recommended by Martins and Gaudiot [11]:

- The use of vinyl or wood floors may help re-vibration and create better acoustics.
- Mineral liner ceilings
- Walls should have light colors
- Noise should not exceed 40 DB
- Doors with a minimum depth of 36 inches, transparent to see who is coming or leaving the class, built from acoustic material to prevent outer noise.
- A system that uses color to indicate danger, break, or end of classes. It will be placed above the board with a switch near the teacher for controlling It.
- Layout must be in a circular shape, or in case of inclusion, deaf students should sit in the first line with no barriers preventing them from seeing the teacher, the interpreter or the board.
- The board must be large in size and the instructor must give deaf students enough time to write.

3.4 Acoustics

Hearing-impaired students can be very noisy and this is why, according to Martins and Gaudiot [11], it is important to use “coating materials that do not cause too much sound absorption and harm audibility within the environment. In addition, one should avoid concave reflective surfaces that concentrate or focus sound energy and cause multiple echoes, as well as hard surfaces, polished and parallel, leading to the phenomenon of multiple reflections”. Another difficulty that an instructor may face is drawing the attention of deaf students in the classroom. So, it is important that the alert systems exist in the form of light in order to be easily perceived. Additionally, the classroom has to be very quiet because some students who wear cochlear implants hear amplified voices, which can be very disturbing for them. There should also be sound-proofing classes where the noises are being absorbed or reduced.

3.5 Lighting

Poor lighting conditions may interrupt visual communication and deaf students who rely on lip-reading may find it difficult to function in darkened classrooms. Therefore, it is important to adjust the lighting in the teaching environment and aim to provide soft and diffused light and avoid or minimize darkness, glare, shadow patterns, and backlighting. It is also important to consider that fluorescent lights emit sounds that interfere with hearing aids and cochlear implants, making it hard to recognize what the instructor is explaining [19]. Another important thing to consider and to try to avoid is having a window or a source of light behind the instructor or interpreter, which can make it very difficult to see the signs produced by the interpreter [19]. Because the eye is one of the important senses for deaf students, there should be light-blocking curtains in addition to the regular curtains to reduce the amount of sunlight that might distract them during the class.

The above-mentioned considerations and approaches are all used to assist deaf students to overcome difficulties in communication and education, but on the other hand, their educators also have needs and requirements to assist them with their endeavors to teach deaf students effectively. As the inclusion of deaf students in the art and design classroom is becoming more common, the need to address the concerns of art and design educators and to offer guidance and recommendations regarding best practices to successfully teach deaf students is growing. In 2001 the Special Needs in Art Education (SNAE) was established to promote art education for learners with special needs and has since endeavored to publish research to address art educators' questions and concerns [16].

Arts and Special Education consultant at the International Organization on Arts and Disability (called Very Special Arts or VSA) Sharon Malley [10, p.8] offered guidelines for art teachers for teaching and assessing special needs students. She advised educators to “promote communicative

competence”, use the principles of Universal Design for Learning (UDL), wisely select and use suitable accommodations for individual learners, utilize evidence-based practices, and use “formative indicators of student performance”.

Kraft and Keifer-Boyd [9], on the other hand, advised educators to review and understand the student's individualized program (IEP) in order to provide individualized education that meets each student's needs. The IEP is an individualized education plan or program that a team composed of teachers, specialists, and parents forms in order to allow teachers to view a student's interests and capabilities and what previous teachers taught that student [4, p.14]. Kraft and Keifer-Boyd [9], also advised educators to devise inclusion and assessment strategies that are based on the principles of Universal Design in Learning (UDL) and that would make students feel that they are in the least restrictive environment. According to them, UDL principles include: Representing content in multiple formats and media, allowing multiple ways for students' expressions, and providing various ways to gain students' interests and motivate them [9]. Researchers at Kennedy Centre recommended the employment of art experiences to foster the participation and positive interactions of students with disabilities in activities with their non-disabled peers [5]. Miller [12] conducted a study to demonstrate to art educators how to plan for and meet the needs of special needs students who are mainstreamed into their inclusive art classrooms. He recommended that art educators take classes and workshops on exceptional education. He also suggested that educators write instructions to the paraeducators or interpreters prior to the class, and consult with them whenever students are busy with teamwork or class work during the class. Additionally, he thinks that institutions must provide staff development opportunities for art educators to learn effective strategies for teaching special needs students. Miller also indicated that educators must keep into their consideration that “The inclusive art class may fall a little behind the schedule of non-inclusive art classes, meaning it may take more time to cover material and complete student artwork in the inclusive classes.” [12, p.78]. Another thing that educators must consider is that deaf students may have limited language skills which may limit their abilities to produce art. According to Miller [12, p. 34];

“Deaf students who have limited language skills will produce art that is below the ability for their same aged peers, for example a middle school aged child who communicates with the language ability of a second grader will render art that is on the level of a second grader. Hearing people are constantly receiving information through hearing; they do not even need to see images related to information to comprehend what is heard. Deaf people miss a lot of information that we take for granted. Art teachers need to be aware of the different ways that deaf students communicate in order to relate to them and to meet their needs. Just like people with any disability no two deaf people are alike. Art teachers should read deaf students’

IEP's and collaborate with teachers and specialists who work with them and with the students' parents" [12, p. 34]. Doris Guay [12] suggests additional strategies for effective teaching in inclusive classrooms:

"[...] having students work for a group grade, and asking the group or other classmates for help before asking the teacher; calling on students, including exceptional needs students, to repeat the instructions ("re-explaining") and having students demonstrate to check for understanding." [12, p. 43]

Tsoumas [17] suggested strategies that focused on providing social and psychological support to deaf students. These included visiting the deaf community and clubs where art is taught, inviting deaf artists who would like to share their experiences and artworks with the students, and watching movies or performances related to deafness in order for hearing students to understand the circumstances and needs of their deaf peers. He also advised educators to exploit gestures, expressions, lip-reading as well as writing notes and using illustrations to communicate with deaf students. Other strategies he recommended include repeating information, ensuring deaf students' participation during the class, encouraging them to ask questions, and preventing hearing students from talking at the same time so that deaf students will focus on one student while trying to lip-read. Tsoumas [17] also recommended approaches for hearing peers to apply in order to help their hard-of-hearing peers. These included encouraging them to answer any questions raised by deaf students regarding assignments and projects as well as to try to learn the basics of sign language.

Schukei [15] suggested five main strategies for art educators to effectively reach deaf and hard-of-hearing students. The first strategy is to maintain a strong relationship between the educator and interpreter or translator who needs to have specialized knowledge about the course content and the needs of the deaf. This will allow students to go to the translator with their inquiries and concerns, and will allow the translator to cooperate in resolving any issues, concerns, or difficulties. The second strategy is to use the caption bar to caption any videos that will be displayed in class. It is important that all videos shown are captioned. If captioning is not used, students will have to split their attention between watching the interpreter and the video, which makes it more challenging for them to focus and learn the content. The third strategy is to encourage peer learning and to motivate deaf students to integrate with their peers and to work in groups, which will help them rely less on the interpreter. The fourth strategy is to exaggerate clarification of the instructions by using gestures to slowly convey the information to students. The fifth strategy is to use educational pictures and display information as images in order to help students remember the main points of the instructions.

Educators at Ferris State University employ a range of effective strategies for teaching hearing-impaired students. During lectures, visually presenting the content is essential because hearing-impaired students use vision as a

primary way to receive information. Another approach is teaming up hearing and deaf students' in-class projects and assignments. They also have circular seating arrangements in most classes to make it easier for deaf students to see all the other students. In row-arranged classes, they keep hearing-impaired students at the first-row desks [3]. They also recommend giving hearing-impaired students breaks between topics during lectures and to give them handouts because it is hard for them to take notes while watching the interpreter. Teachers are advised not to talk while facing the board, and they should be aware and make sure that nothing is blocking students from seeing their lips. Furthermore, if a student asks a question the teacher is advised to repeat it so that deaf students can perceive it through lip-reading. In every lecture or for every new subject, a conceptual map must be made with important terminology or keywords and their different meanings. Students who use sign language must be encouraged to make presentations of their work in front of others using sign language while translators deliver what the student communicates. This may help hearing students learn sign language and enable them to use a word or two in this language to make it easier for them to communicate with their hearing-impaired peers.

In addition to all the above-mentioned strategies and practices, one of the most advocated approaches is visual teaching. Recently, deaf education is increasingly becoming characterized by visual teaching strategies [14]. Visual teaching has become a vehicle for educating deaf students, and some researchers stressed the importance of visual art education for deaf students. Obosu [14], for instance, called for new ways of thinking about deaf education by merging it with visual art education, and accordingly stated the following:

"The use of visuals in classroom teaching fosters cognitive development, aids academic development (Eubanks, 2011) and strengthens memory (Smith, 1995). It is generally believed that any education which does not include art is incomplete (Schulz and Turnbull, 1984) [...] Existing literature prove that deaf students are visual learners. They often lack language of the hearing world and have limited vocabulary and limited mastery of sentence structure (Easterbrooks and Stoner, 2006). This linguistic limitation importantly requires strict reliance on visuals teaching strategies." [14, p. 13].

Obosu [14] also believes that the relationship between art and visual language and the development of verbal language is strong. For the deaf, visual expressions can be an important part of the vocabulary and the linguistic repertoire held in their minds, and therefore he believes that teachers and learners need to use more visual communication and expression because deaf students rely on what they see and not on what they hear. According to Obosu [14], this means that the deaf is a visual learner and therefore a good education of the deaf must be grounded on teaching through the visual arts. For this reason, Obosu [14] suggested that the curriculum that stresses mastery of grammar and linguistics, with little time for practical learning, may not be

consistent with deaf education. Obosu [14] asserts that art can promote the cognitive, social, and emotional development of deaf students, and can provide effective ways for them to acquire skills and knowledge that may otherwise be impossible to acquire. Obosu [14], therefore, recommends that educators should be trained in the basics of drawing to enable them to teach in a manner that meets the visual needs of their deaf students.

Among the visual arts, the field of graphic design, web design, animation, and multimedia is highly demanded and preferred by deaf students and may pave the way for a promising future for deaf students [8, 18]. However, the following statement reveals that there are some significant limitations which were found by Ibrahim et al. [8] who conducted a needs analysis of graphic design deaf students in Malaysia;

"Although deaf students have a high tendency to study graphic design, there are some constraints faced. Among them are the inefficient technology used for learning, negligence of deaf students' learning styles, and the sign language interpreters were not experts in graphic design field. Furthermore, a number of terms cannot be translated and thus led to misunderstanding. In addition, the available learning modules used were not tailored to the needs of deaf students." [8, p. 3]

Ibrahim et al. [8] also found that the most difficult courses as stated by the fifty-eight deaf respondents that their study involved are animation followed by illustration and web design. Also, the results indicated that deaf students needed visual learning approaches and sources to learn graphic design and the combination of online and video learning methods encourages deaf students to learn effectively. The most significant finding, however, is that due to the differences in deaf students' learning styles, Ibrahim et al. [8] believe that the graphic design learning module and the curriculum should be designed and tailored to students' needs in order to ensure the success of their learning.

Thus, many of the studies discussed in this literature review highlighted the importance of visual arts and visual teaching in meeting the learning needs of deaf students. They recommended the diversification of teaching approaches through the employment of integrated material and techniques that can equip the average teacher of the deaf with visual teaching strategies and tools (such as illustrations, pictures, and diagrams) to teach deaf students effectively and efficiently.

Evaluating and Examining the Academic Performance & Experiences of an Art and Design Hard of Hearing Student at the University of Bahrain

This section discusses the findings of a case study for a student (Participant T) who is currently enrolled and is in her

fourth year in the BA Art and Design Program at The University of Bahrain. Participant T suffers from profound hearing loss and does not wear a hearing aid. We conducted in-depth interviews with the student and her mother and sister. We also interviewed some of her teachers and colleagues in the Art and Design program to seek their opinions and suggestions in order to explore the aspects that may contribute to creating a better learning environment in an art and design classroom for the deaf and hard-of-hearing students. The main aims were to identify the difficulties and challenges that she encountered in the academic environment, to know the best methods and strategies to teach and assess her, and to analyse the reasons and factors that led to the success of this student in most of the courses and her failure – or at least disappointment – in a number of courses.

Participant T suffers from a profound hearing loss. She had a cochlear implant when she was fourteen years old, but it failed. Despite this, she strives to practice her life normally as she depends on her ability to read lips. Although she does not communicate much due to her inability to hear or speak, the study revealed that Participant T has a lot of friendships in the university, and according to her, this has greatly affected her personality and her ability to learn as the students around her constitute a vital component in the learning process. The assistance and support of her peers complemented the strong support that she gets from her mother and sister, who have played a chief role in helping her since she was in school. They decided to run a campaign to teach sign language to all the students in her school. The sister of Participant T explained that her sister was well qualified in the school; she merged well with non-disabled students in public schools during high school, and she was taking the same lessons, exams, and tests. An interpreter was provided by the Shaikhan Al-Farsi Comprehensive Speech Centre to help her during exams. There were also initiatives and endeavors by her fellow students to help explain the lessons to her because her peers liked her a lot and she was popular in school. They actually competed to assist her and support her all the time. Her mother and sister believe that her integration in the school with hearing students and getting an equal educational opportunity with them contributed to her success and helped her learn how to read and write. This success, however, does not negate the existence of difficulties that she and her teachers faced in communicating with each other, especially in the theoretical courses. According to her, in theoretical courses, she cannot verbally interact and participate in the class like all other students, and that makes the teachers either forget her presence or pay excessive attention to her, which is counterproductive because it interrupts or hinders the educational process of other students and slows down the rhythm of the lecture. Another noteworthy difficulty, according to her mother, is that she does not know many synonyms or meanings for a single term, and she only has an understanding of a word in a concrete and tangible rather than mental or incorporeal sense.

Her mother was ready to give a prolonged

description of the difficulties she faced while seeking and struggling to integrate her daughter into a public school as she stated the following;

"The suffering that I faced with the ministry while trying to integrate my daughter into the school was due to the difficulty for the ministry to accept the idea of integrating her because at that time no deaf student had been integrated before, but with my insistence, I pledged to them that she will succeed and if she fails, I promised to withdraw her from the school. The idea of integrating her was welcomed by the school's social supervisors, but the principal reacted differently and rejected the idea in the beginning. She was only convinced when I showed her my daughter's certificates and transcript which proved the high grades she got in the center".

Participant T did not complain of any difficulties in communication and socializing with her peers when she got integrated, as her mother said; On the contrary, they were understanding and open-minded, and she was able to integrate with them without problems until some of them learned sign language from her and eventually became sign language interpreters. According to her mother, the main difficulty that she may have faced was the resistance of some teachers to her integration and their unawareness of how to deal with the fact that there is a special case that needs special care in the classroom. In order to resolve this issue, the mother kept arranging meetings with the teachers and explaining to them her daughter's needs. Also, an interpreter was provided at her request, after she sought to issue a letter to the ministry from Shaikhan Al-Farsi Comprehensive Speech Centre, and her request was ultimately fulfilled when she got approval for the presence of an interpreter during exams.

Participant T's sister had an active role in her success. She strived to follow up and help her with her lessons on an up-to-date basis, and she attended with her sometimes to translate the exams. Her mother played a great role in trying to develop her daughter and integrate her into society. She had a clear belief and message and wanted to convey that her daughter is not different from the rest and that she has the right to participate and can accomplish anything just as a normal individual. She emphasized that an individual's ability does not depend on the capabilities of the senses only, but on the mental capacity as well. She explained that she has a method of parenting that relies on reinforcement, and she always tries to instill confidence in her daughter and even in her younger son, who suffers from a hearing impairment but has a relatively successful cochlear implant. He used to complain about the bullying by his peers at school saying that they mock his unclear manner of pronunciation and that they call him "bulbul" (Arabic for nightingale). Her response to him when he complained was: "This is good! Because you are beautiful like a nightingale, and they cannot deny your beauty." Thus, she taught him how to focus on the positive aspects and how to exclude all that is negative, and this is a policy in education that successfully strengthened the confidence in her children as

she can see its outcomes manifested in her daughter's personality.

Participant T stated that she appreciates the efforts made by teachers and their genuine attempts to communicate with her and provide assistance, but she believes that "the teacher does not have the ability to focus on a specific student at the expense of the rest of the students". She suggests, "it may be better to reduce the theoretical content or even the theoretical courses, and perhaps integrate deaf students with hearing students in practical courses only." In addition to absorbing the theoretical content during the lecture, such content also constitutes a major challenge during exams and assessments. According to Participant T, "the difficulty lies primarily in the essay exams because deaf students read the required content and memorize it, but they do not necessarily understand everything they read because there is a lack of linguistic terminology as a result of their inability to speak and hear the language".

Participant T also suggested some of the approaches and strategies that she thinks would contribute to improving her experience in the Art and Design program. She emphasized that the most important step is for the Ministry of Education to provide interpreters not only in the university but in all other schools in Bahrain. She also suggested teaching sign language to students as she believes that it will contribute greatly to deaf students' attempts to build healthy relationships with their peers and to get their assistance and help. She also thinks that higher education institutions must provide the necessary equipment and assistive tools that are used in all international universities for deaf students in addition to the provision of sign language workshops to teachers and students.

The participant's mother also suggested facilitating integration and inclusive education opportunities in all disciplines. She advised that integration efforts must not be limited to the specialty of fine arts and graphics at the university because the deaf student when integrated with society, will merge into all disciplines.

With regards to school integration, she suggested that deaf students should have regular follow-up by the ministry through the arrangement of school visits by the special education teachers on a monthly or at least yearly basis, from the first grade in primary school until their graduation, to determine their difficulties and their needs and issue a report, periodically. This continuous follow-up and the detailed report will help upon joining the university in determining and conveying the situation and needs of the student to the instructors. The mother also insisted on her strong rejection of any suggestion to separate deaf students from the rest of the students, and considers that it is not a good idea to isolate them from society because she believes that separation limits them from seeing the world, and hinders their development, while inclusion will enhance the presence of the deaf and hard-of-hearing group in society and help the society to accept this group, deal with them, appreciate them and understand their needs.

Although Participant T's mother and sister think

that integration is the most effective approach to teaching deaf students and they reacted to the idea of separation with clear rejection, all the interviewed instructors support the idea of separation. One of the instructors clarified her opinion stating that deaf students will integrate with society sooner or later and that they must be prepared for that in the university. She believes that they can be better prepared if enough special attention is given to them, thus guaranteeing that they learn under the hands of qualified instructors who know sign language and who are supported by interpreters in the class. Two other instructors also agreed on the ineffectiveness of merging deaf students with non-disabled students because of its many drawbacks. They indicated that the success of inclusive education or integration depends on fulfilling certain conditions and criteria and evaluating students' cases separately to determine and select the students who are qualified to be integrated. They think that integration must not be random and must follow research recommendations and international standards or otherwise it may lead to negative psychological effects and even to "an inferiority complex". According to one of the instructors, "in order to determine if a student is legible for inclusive education, each case must be studied and evaluated separately. There are counseling centers in the university that should be responsible for the evaluation, and for reviewing the history and record of the disabled student. Moreover, inclusive education requires accessibility, and the classroom environment must have the right settings, equipment, and facilities."

One of the instructors suggested a hybrid approach whereby deaf students are merged with non-disabled students in events, art exhibitions, or some group activities, while they get separated during the lectures. She believes that "it is not suitable to include them in the lectures and integrate them with non-disabled students because they need an atmosphere and environment prepared for their needs in terms of seating, lighting, acoustics, and assistive technologies under the supervision of a professor who is trained in dealing with such cases".

The above-mentioned opinions by the instructors stem from their eagerness to ensure the best academic practices, educational environment, and services for deaf students in general and assist them in achieving the most possible successful learning outcomes. Nevertheless, Participant T has demonstrated her ability to succeed to a certain degree as an integrated student in the Art and Design program at The University of Bahrain despite the absence of an interpreter, which was one of the main challenges she faced. Although all of the interviewed instructors who taught her indicated that it was their first experience in teaching a deaf student, most of them stated that it was not a very difficult matter to teach her practical courses, but the difficulty was in teaching her theoretical courses such as the History of Art course which she did not pass. They also faced difficulties in determining the optimal teaching strategies that would suit her situation and would still enable them to teach all the other non-disabled students without affecting their or her learning process negatively. Therefore,

their experiences differed in determining the best strategies to teach her because they did not get trained to deal with deaf students, but all of them settled on the decision to be considerate while teaching and evaluating her. All the instructors acknowledged that the required course content and material were not reduced but they tried applying some approaches to take into account her disability. One of the instructors, who taught her "Computer Graphics" and "Art of Digital Illustration" indicated that she was lenient while assessing the student's projects (Fig. 2) and exams and tried not to be as picky as she usually is with the mistakes that can be overlooked.



Fig. 2: A children's book written and designed by participant T in Adobe Illustrator as part of the requirements of the Art of Digital Illustration course

This instructor explained the lecture content at a slower pace and repeated the sentences twice to ensure that Participant T understood them. She also used the classical Arabic language (fus-ha) and moved her lips during the explanation in a way that makes it easy for the student to read the movement of the lips. The instructor suggested to the student the use of Google Translate and the iPhone Notes speech-to-text (STT) feature to capture the voice and convert it into words. According to the instructor, "Upon launching the speech-to-text app, the student's eyes, and even the eyes of all her peers in the class were filled with tears. However, I as an instructor was not sure whether these tears were because she was extremely happy to be able to see an interpretation visually for the first time and in real-time or perhaps she was extremely sad for letting many years pass while she struggled in school and no one told her that such STT platforms or software existed."

Another instructor, who taught her "History of Art", said that she takes into account the linguistic limitations during the evaluation but she still applies the same criteria for evaluating her as her peers, and she was able to submit all her assignments on time. A third instructor, who taught her "Drawing Techniques" and "Water Colour Painting", stated that he appreciates and understands the student's difficulties and tries to keep his attention on her in order to notice when she does not know what was required. He also takes into account her inability to communicate and

is lenient when evaluating her level of participation and interaction because she hardly participates. This is because during the lecture, she is usually too busy trying to lip-read and understand what is being said, and it is too difficult for her to try to participate at the same time. He said that when he finished explaining to all students, he would sit with her individually and transcribe what he said. He also decided to let her follow up with her peers while he too would observe and follow up on her progress in order to evaluate the extent of her understanding through her work on her paintings (Fig. 3). He would then give her his remarks about the artwork in order to help her improve it. In his opinion, this method was effective because the course was practice-based and didn't involve any theoretical content. Her good interaction with her colleagues and their help in guiding and assisting her during and after the lecture have facilitated the learning process for her and the teaching process for him.



Fig. 3: An artwork painted by participant T as part of the requirements of the Water Colour Painting course

This instructor was not the only instructor to realize the vital role that peers can play in assisting and facilitating the deaf student's learning experience. Two other instructors also realized it and mentioned that they asked if any of the students wanted to volunteer and sit next to Participant T throughout the whole semester in order to assist her and transcribe the instructions and information that she could not lip-read or understand to her. Many of the students volunteered and one of them was selected. One of the instructors said, "the student's reliance on her peers for assistance and their readiness and willingness to help her and explain the content and requirements to her made me sometimes forget about the presence of a deaf student in the class. However, I still feel that it is unfair to her because most of the important content is explained orally rather than through writing". The significant role that peers can play is evident in the following statement by Participant T; "My peers played a great role in conveying the instructors' messages to me in an illustrative manner by directing me to do the necessary work, including projects and paintings.

Their support helped me overcome many obstacles, which without them I would not be able to overcome."

The instructors also mentioned that they allocated a front seat to the student in the studio or the computer lab in order for her to be facing them and be able to read their lips easily without allowing anything to obstruct her vision.

Another instructor, who taught her "Drawing Techniques 1", used to allocate time after the lecture to repeat the explanation to the student in writing, but she still felt that this approach has limitations because the oral explanation was clearer, more elaborate, and more enriching in the first time, and that the explanation in writing or after being transcribed would be summarized and shortened.

Despite all these experimental approaches and considerations by the instructors, Participant T's colleague who usually sits next to her to transcribe the instructor's words, believes that these approaches are not sufficient. She feels that the disability of Participant T is not being taken into account as required; it is difficult for her to absorb and understand all the content the same way it gets received and understood by her non-disabled peers. She believes that it is unfair to teach her the same content and ask her for the same requirements that are asked of her peers, especially in the absence of an interpreter who guarantees the clear transfer of the complete content as required. She, nonetheless, believes that the main factors that helped her overcome some of the challenges and try to compete with her peers are that her reading and writing skills were good and her social skills and relationships with her peers were excellent. All her instructors also praised her outgoing personality and social skills, but at the same time, they all agreed that it is very necessary to have an interpreter in class, or at least to teach instructors sign language, to make her experience and ability to compete with her peers more successful.

Her success in competing with her peers was also noticed by one of her instructors who mentioned, "during the lecture and during textual communication with her, either through email or the Remind app, I don't feel a difference between her and the students. The only times I used to feel any difference or become more aware of her disability are when I evaluate her exams or projects. When she gets a score that is not very high, I start thinking and I keep asking myself; is her grade not high because of her hearing impairment? Or will she still get this score even if she was able to hear? Here I become overwhelmed with feelings of confusion and guilt, but these feelings disappear due to the contentment that I felt a number of times when she got a score much higher than some of her non-disabled peers. This makes me feel that she really succeeded in learning and that I also succeeded in teaching her and in transferring my knowledge and skills to her".

Recommendations

The recommendations in this section were drawn through the identification of successes, challenges, and factors that were revealed by the deaf student, her family members, and her

instructors throughout the study. All the participants agreed on the necessity of the presence of an interpreter, and of teachers who know sign language. These interpreters must be knowledgeable about the terminology of the specialization and must have prior knowledge of the content that will be discussed during a lecture so that they can translate it accurately. The instructors suggested providing training courses in sign language and in dealing with deaf students. They also recommended installing programs on the computer that convert speech into text on the blackboard, as well as adding more visual content to the course material and the lecture content. This can be achieved through applying visual learning approaches and the use of multimedia, transcribed videos, pictures, and infographics. It is also important to provide various devices and tools that are used in all international universities that offer educational opportunities to deaf students. The instructors also stressed the importance of reducing the teaching load for teachers who teach deaf students so that they can focus and give them the attention that they need because teaching the deaf requires time, preparing written summaries, repeating explanations, and giving special attention to the student, which takes a lot of time and effort that drains the teacher. Another noteworthy suggestion is the development of a special diploma for deaf students and the modification of the curriculum and adaptation of course content to the capabilities of deaf students, and particularly the reduction of the theoretical content in theoretical courses such as The History of Art and Art Aesthetics and Appreciation. The classroom setting and environment must also be suitable for deaf students. Environmental noise, for instance, should be kept to a minimum in order not to interfere with their listening devices and affect their concentration, and distracts their attention. Using insulators to be placed in the classroom walls can minimize noise because hearing impaired students who have cochlear implants are very sensitive to environmental sounds and noises that can easily disturb and distract them. The isolators will isolate the noise level coming from outside the classroom so that they can focus on the teacher during the lecture. The seating arrangement and lighting must also be considered so that the student can read the lips of the lecturer and can communicate with other students. The tables and chairs should be arranged to form the letter U or half a circle so that the deaf and hard-of-hearing students can see the professor, the interpreter, and the rest of the students. Cameras should be installed on the wall to record lectures as a reference for hearing-impaired students to study for exams, and the use of new technologies can facilitate the education process for teachers and students and save their time. The presence of light alarm devices can be very useful; if the students are busy with something or inattentive, the teacher directs the light at them to get their attention.

It is also important to raise awareness among deaf and hard-of-hearing students about the advanced and latest technologies, and enhance their knowledge of global efforts and practices that may contribute to facilitating their educational experience process.

Moreover, the significant role that peers can play in supporting hearing-impaired students must not be underestimated. Teaching non-disabled students sign language can significantly enhance deaf and hard-of-hearing students' learning experience.

The Ministry of Education, higher education institutions, and authorities must coordinate to design a strategic plan to allow students with hearing impairment in Bahrain to obtain distinguished academic education. The plan may constitute or take into consideration the following strategic suggestions for The University of Bahrain and any university that offers Art and Design programs to deaf students:

- Establishing a special center that cares for all students with hearing difficulties and impairments. The center can be equipped with all the necessary equipment and facilities needed for learning and education. It may consist of the following units:

- Deaf and Hard-of-Hearing Research Unit: The unit will carry out studies required to secure the leadership of the university in providing the best academic practices for deaf students.

- Deaf and Hard-of-Hearing Talents Unit: One of the tasks of this unit is to support gifted and talented students in all fields and to work to ensure the development of their talents. It exhibits all students' works in suitable locations and galleries.

- Media Unit: This unit supervises the launching of digital applications, electronic magazines, consultative and educational channels as well as video tutorials on social media and other portals like YouTube for students with hearing impairment and difficulties. All videotapes can be prepared and produced by those students to convey the technical and artistic skills they acquired to their colleagues under the supervision of the Unit.

- Encouraging hearing-impaired students to continue their graduate studies in international universities specializing in these areas. In addition, the University may assist them to continue their postgraduate studies through joint programs and disciplines with highly reputed international universities specialized in these fields, like Gallaudet University in the USA.

- Establishing a special fund for hearing-impaired students. This fund will be promoted through media and TV to encourage the private sector and strategic partners to support the program.

With the above-mentioned suggestions and recommendations, deaf students in Bahrain may have a greater potential for the successful completion of their university studies and more opportunities to enter the new professional fields in the labor market.

Conclusion

The study has shown that students with hearing impairment

do have remarkable challenges in the learning process when enrolled in an art and design program. It is clear from the study that certain improvements have to be implemented in order to overcome the challenges faced by hearing-impaired students in art or design classrooms. There is a need for universities to appoint a sign language interpreter in all art and design programs in which hearing-impaired students are enrolled. Universities need to increase the number of educators with sign language skills, while educators who are not skilled in sign language must be encouraged to take courses and workshops on sign language. This will equip them with the necessary skills and will qualify them to teach hearing-impaired students in their classes. Educators must also be trained and encouraged to design assignments, course materials, and teaching and assessment strategies that maximize the potential for deaf students to learn effectively and achieve the intended learning outcomes of their courses. These course materials, outlines, and lecture notes must be given to the interpreter and even the deaf student prior to the lecture to allow the interpreter to prepare for the accurate translation of the terminology and to allow students to get assistance from their family members or friends.

By providing a better understanding of the challenges and experiences of deaf students who study art and design, and offering specific recommendations for art and design educators, this study has the potential to improve the teaching and assessment approaches currently implemented. It offers enough guidance to assist higher education institutions in the provision of effective academic experiences and suitable learning environments. In doing so, more deaf students will have the opportunity to demonstrate creative art and design skills, succeed and graduate from art and design programs in higher education institutions, and get good employment opportunities.

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References

- [1] Almallki, B. 8 Thousand Deaf Bahrainis ... and Training of Doctors and Nurses in Sign Language. *AlBilad Press*. <https://www.albiladpress.com/news/2020/4102/bahrain/618571.html> (2020, January 6).
- [2] Al Ghaeb, R. Albilad Exclusively Publishes the Minister of Education's Response to the Question of Al-Fadala. *Albilad press*. <https://albiladpress.com/newspaper/3822/563376.html> (2019, April 2).
- [3] Ferris State University Teaching Strategies for Hearing Impaired Students <https://www.ferris.edu/RSS/disability/faculty-staff/classroom-issues/hearing/hearing-strategy.htm> (2020)
- [4] Gerber, B. L. An overview of special education and autism: A personal perspective. In B. L. Gerber & J. Kellman. (Eds.) *Understanding students with autism through art*. (pp. 10-31) Reston, Virginia: National Art Education Association. (2010).
- [5] Glass, D. The Contours of Inclusion: Inclusive Arts Teaching and Learning. <https://www.kennedy-center.org/globalassets/education/networks-conferences--research/research--resources/vsa-resources/parents-and-educators/vsacontoursofinclusion2010.pdf> (2010).
- [6] Guardino, C. & Antia, S. Modifying the Classroom Environment to Increase Engagement and Decrease Disruption with Students Who Are Deaf or Hard of Hearing. *Journal of deaf studies and deaf education*. **17**(4):518-33. <https://doi.org/10.1093/deafed/ens026> (2012).
- [7] Heinrich, A. "Was ist Deaf Space?". <https://hoerbehindert.ch/news/wissen/was-ist-deaf-space-9261.html> (2016).
- [8] Ibrahim, Z., Alias, N., Nordin, A. (2016). Needs analysis for graphic design learning module based on technology & learning styles of deaf students. *Cogent Education*. **1**(1):268-279. <https://doi.org/10.1080/2331186X.2016.1178364>. (2016).
- [9] Kraft, M., & Keifer-Boyd, K. Including difference: A communitarian approach to art education in the least restrictive environment. Reston, VA: National Art Education Association. (2013).
- [10] Malley, S. Students with disabilities and the core art standards: Guiding principles for teachers. The John F. Kennedy Center for the Performing Arts. <https://www.nationalartsstandards.org/sites/default/files/Guiding%20Principles%20for%20Inclusion.pdf> (2014).
- [11] Martins, L. B. and Gaudiot, D. M. "The deaf and the classroom design: a contribution of the built environmental ergonomics for the accessibility." *Work* 41 Suppl 1:3663-3668. <https://content.iospress.com/download/work/wor0007?id=work%2Fwor0007> (2012).
- [12] Miller, M. H. V., "The inclusive art classroom: Time and strategies". *Masters Theses*. 273. <https://commons.lib.jmu.edu/master201019/273> (2013).
- [13] Mobility International USA. <https://www.miusa.org/resource/tipsheet/Deaf/accesslanguages> (n.d)
- [14] Obosu, G., K. the value of visual art in deaf education- investigating visual teaching in some schools for the deaf. Department of General Art Studies. <http://ir.knust.edu.gh/bitstream/123456789/5811/1/Gideon%20Kwesi%20Obosu.pdf> (2012).
- [15] Schukei, A. How to Effectively Reach Deaf and Hard of Hearing Students in the Art Room. Retrieved from the art of education:

- <https://theartofeducation.edu/2017/07/04/effectively-reach-deaf-hard-hearing-students-art-room/> (2017).
- [16] SNAE <https://www.arteducators.org/community/articles/75-special-needs-in-art-education-snae> (2019).
- [17] Tsoumas, J. Teaching the Deaf Art and Design in the Greek Higher Education Institutions: Focusing on the Class Unity. 1-13. https://www.researchgate.net/publication/330764458_teaching_the_deaf_art_and_design_in_the_greek_higher_education_institutions_focusing_on_the_class_unity (2016).
- [18] Zaharudin, R., Nordin, N., & Mohd Yasin, M. Online ICT courses integrated for the hearing-impaired individuals' education: A preliminary study from the students' perception. *Informatics Engineering and Informatics Science*, (251), 56–63. <http://dx.doi.org/10.1007/978-3-642-25327-0> (2011).
- [19] Weber, M.L. <https://www.gettingsmart.com/2016/08/10-challenges-deaf-students-face-in-the-classroom/> (2016).