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Challenges and opportunities of students with visual impairment in a State University: A multi-case study

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Abstract
State universities in the Philippines have long been a source of hope for underprivileged students, including those with visual impairments, who encounter a range of challenges in both their educational and daily community experiences. This multi-case study examined the similarities and differences of the experiences of three (3) college students with visual impairment regarding their educational challenges and opportunities faced in a public higher education institution in Cebu, Philippines. A semi-structured questionnaire consisting of probing and open-ended questions was utilized. It was analyzed using a cross-case analysis approach to identify the distinction between the educational challenges and opportunities they experienced on their learning journey. The findings showed that college students with visual impairment experienced five main challenges in higher education regarding accessibility, instruction, educational compliance, socialization, and assistive technology. Consequently, college students with visual impairment experienced opportunities only in accessibility, socialization, and assistive technologies. In conclusion, students with visual impairment have experienced 5varied challenges and opportunities in state universities in the Philippines. It is recommended that schools should enhance their services and resources to overcome the issues faced by students with visual impairments.

Keywords: Visual impairment (VI), special education, higher education, Philippines

1. Introduction

State universities in the Philippines probably are the first choice for underprivileged Filipino students to finish their studies. Also, to students with VI. In the field of education, Cyril Blanco Bergado, a Cebu Normal University (CNU) graduate of Batch 2022, has achieved greatness in her own right. Despite her disability of having visual impairment, she strives to finish her studies (Galorport, 2022) [10]; she graduated "Cum Laude" and recently passed the teacher's board exam (Sumalinog, 2023) [32]. Despite these successes, the researchers have observed the need for more facilities on the school premises and still need the guidance of a sighted person to travel from one room to another. This causes a hassle to the guide, especially if the guide person's instructor is strict about on-time attendance.

Although universities and higher education institutions (HEIs) worldwide continue to evolve by assessing and changing their policies to promote inclusion, shared insights on how HEIs can be more inclusive of students with special needs. The Institute for Educational Leadership (IEL) established a guide for HEI on how to be more inclusive of their institution. In a report by the Higher Education Academy, 10 HEIs from the United Kingdom have developed and embedded inclusive policy and practice in higher education from 2007 to 2008.

To accommodate the needs of students with visual impairments, some South African colleges used dyslexia-friendly reading and writing software to improve assignment clarity and accessibility. The institution provides flexible schedules and deadlines as part of the accessibility changes.

Some students prefer online learning through recorded lectures. They also introduced the use of voiceovers in reviewing repeatedly the voiceover-equipped PowerPoint slides provided (Acosta *et al*., 2023) [1]. They also created a data-free platform where instructors hold virtual classes. Lecturers submit videos and slides with audio explanations to supplement the textual knowledge and make the learning materials more interactive (Manase, 2021, cited in Acosta *et al*., 2023) [1].

Studies have consistently shown that higher education students with disabilities face significant challenges. Shaw (2021) found that their dropout rates are higher than their non-disabled peers. Amin *et al*. (2021) [3] specifically highlighted five significant challenges for higher education students with visual impairments in India: financial, public stigma, accessibility, peer acceptance, and learning difficulties. Tiwari *et al*. (2022) [34] pointed out that many higher education teachers lack an understanding of how to support students with visual impairments, impacting their ability to meet their needs, particularly in test-taking situations where anxiety and the quality of scribes can significantly influence outcomes.

In the Philippines, people with disabilities (PWD) are stigmatized and abused as a result of preconceptions and isolation. Advocates for disabled people's rights urged the government to prioritize them and pushed for the passage of certain laws: Republic Act 7277 (Magna Carta for Disabled Persons), Republic Act 11650 (Instituting a Policy of Inclusion and Services for Learners with Disabilities in Support of Inclusive Education Act). These legislations successfully passed and were effective however, according to the US State Department's assessment of the country's human rights policies, despite these laws the Philippines has failed to implement the policy successfully. "The law was not effectively enforced, and many barriers remained for persons with disabilities," the report stated (Chi, 2023). This study may address the problems faced by students with VI by contributing to the existing literature on providing recommendations on improving the educational support for the learners, and provide valuable insights for HEI. Learners with VI may gain access to conducive and comfortable learning environments despite the challenges.

Various issues and challenges arise when learners with VI want to further their education to a higher level, and there has yet to be any research conducted in a particular higher education institution that accommodates the needs of the learners. Hence, this study aims to examine the experiences of college students with visual impairment regarding their educational challenges and opportunities faced in learning.

2. Methodology

2.1. Research Design

The multi-case study design highlighted the challenges and opportunities that college students with visual impairment faced in a particular university. This study identified the similarities and distinctions between their experiences and is used to gain in-depth knowledge about this phenomenon. In one study, Malone (2017) [19] used a multi-case study methodology to evaluate the problems and opportunities faced by four college students with visual impairment due to the increased emphasis on technology in their separate post-secondary educational contexts.

2.2. Sampling design, respondents, and environment

The sampling technique used was purposive sampling, a non-probability sampling method that aids in selecting the target informants in a specific university. According to Kelly (2010), purposive sampling is utilized to select respondents who have the potential to provide accurate and helpful information that can be used in the study. In this case, the researcher chose college students with visual impairment who have at least one year of learning experience and are enrolled in a higher education institution in Cebu, Philippines. More so, college students with visual impairment experienced educational challenges and opportunities in their learning journey.

2.3. Research Instrument

In qualitative studies, the researcher is considered a primary data collection instrument. In order to obtain the required data, the researchers conducted semi-structured interviews, where the researcher asked open-ended questions to find answers instead of yes/no questions. It gave the researcher the freedom to follow up on topics or answers of the participants as well as request in-depth clarifications as needed during the interview. This semi-structured method was used to facilitate researchers in determining and examining the educational challenges and opportunities experienced by college students with visual impairment in their learning.

2.4 Data Gathering Procedure

The researchers complied with the requirements of the Research Ethics Committee. After approval, the researchers selected three (3) probable college students with visual impairments. A consent form was given to determine the participant's willingness to be part of the study; if not, the participant may withdraw without penalty. A semi-structured questionnaire consisting of probing and open-ended questions was utilized during the interview. The participants' answers must remain confidential and be used for school purposes only. Afterward, when enough data was gathered, the researcher provided a meal worth one hundred fifty pesos as a token of the participant's cooperation and willingness. The gathered data is analyzed using a cross-case analysis approach to identify the similarities and differences between the educational challenges and opportunities they experienced on their learning journey.

2.5 Data Analysis

The researcher used cross-case analysis to compare the similarities and differences of the multiple cases and discover the specific features of the participant's answers. In order to obtain the required data, the researchers conducted a semi-structured, in-depth interview with the selected participants who voluntarily got involved in the study. explains that using cross-case analysis requires careful comparison and interpretation to increase the validity and stability of the research. In performing the cross-case analysis, one technique is using tables and graphs when arranging case data.

2.6 Ethical Considerations

In this research study, several ethical considerations are taken into account. First, the participants are asked for their

informed permission after being made aware of the study's goals, purpose, and how their rights and privacy are protected. Participants' privacy and anonymity must be protected, and the data collected must be stored securely and accessible only to the research team. Participants have the right to withdraw from the study without consequences. Moreover, the study adhered to ethical guidelines and regulations set forth by relevant institutions or governing bodies. The research protocol was submitted for ethical review and approval to the ethics committee to ensure compliance with ethical standards and the protection of the participant's rights and welfare. Tokens such as meals worth one hundred fifty pesos are given to the participants to acknowledge their time and effort in participating in the research.

3. Results and Discussion

After conducting interviews with three (3) students with VI, researchers gathered data on various elements of their experiences in our exploration of the challenges and opportunities they experienced. We discovered similarities and differences in their challenges and opportunities by diving into their paths, as shown in the table below. In addition, the terminology used in the study is described below.

Accessibility: Is the access or to be able to transfer from one place to another either in or around the university or around the classroom environment of the students with VI.

Instruction: It is how the discussions, lessons, and other resources were presented by the professors/ instructors to the students with VI.

Socialization: It is the interaction and communication of the students with VI with other students with sight.

Educational Compliance: It is the completion, compliance, and performance of the task given by their professors/instructors to the students with VI.

Assistive Technology: It is the use of assistive devices, technology or other equipment that is used similarly to aid the students with VI for their classes.

1.1 Similarities and Differences of Challenges

Table 1: Challenges faced inside the classroom and the University of College Students with VI.

In terms of	Case 1	Case 2	Case 3
Accessibility	-Difficulty in transferring from one place to another -Difficulty in remembering the pathways	-Difficulty in transferring one place to another -Buildings are not well-lit -Needs of assistance in moving place to another	-Difficulty in transferring one place to another
Instruction	-Inability to understand visual presentations without orally delivered descriptions -Unavailability of educational assistance	-Inability to understand visual presentations without orally delivered descriptions	-Inability to understand visual presentations without orally delivered descriptions -Difficulty in following instructions and not saying verbally
Socialization	-Difficulty of communicating -Distracting environment when communicating	-Difficulty in communicating -Low self-confidence hinders one from expressing oneself -Lack of awareness of the disability	-Difficulty in communicating -Difficulty of approaching someone
Educational Compliance	-Minimal consideration given	-Minimal consideration given	-Minimal consideration given
Assistive Technology	- Inability to catch up with screen readers and audio readers	-Inability to catch up with screen readers and audio readers -Unavailability of the screen readers	-Inability to catch up with screen readers and audio readers

***Note*:** The information above indicates the similarities and the differences of the challenges that college students with VI have faced and identified both in the classroom and at university

2.1 Similarities and Differences of Opportunities

Table 2: Opportunities faced inside the classroom and the University of College Students with VI.

In terms of	Case 1	Case 2	Case 3
Accessibility	- Utilization of ramps and elevators - Receives peer mobility assistance	- Utilization of ramps and elevators -Provides priority lane, especially in the canteen -Utilization of learning space	- Utilization of ramps and elevators -Use the assistive device for accessibility -Inclusivity in school events
Instruction	-Receives simplified instruction accommodations	-Receives simplified instruction accommodations	-Receives simplified instruction accommodations
Socialization	- Peer support	- Peer support -Embrace differences	- Peer support
Assistive Technology	-Utilization of assistive devices (e.g braille, screen and audio readers)	-Utilization of assistive devices (e.g braille, screen and audio readers)	-Utilization of assistive devices (e.g braille, screen and audio readers)

***Note*:** The information above indicates the similarities and differences of the opportunities that college students with VI have identified and experienced both in the classroom and at university

The data presented in the tables above illustrates both the similarities and differences in challenges and opportunities of the three students with VI in terms of Accessibility, Instruction, Socialization, Educational Compliance and Assistive Technology. To further understand the implications of these findings, the next paragraphs discussed the

individual narratives for each case, offering their different experiences.

Case A

1. Challenges

1.1 Accessibility

In terms of accessibility, the informant has difficulty in changing locations as stated:

> "I'm having a hard time transferring from one chair to another, especially when we have an activity when no one will assist me in going in front to answer, or when we will have a presentation..."

This means the informant needs help transferring from one place to another during classroom activities. This confirms that mobility/accessibility is a reported problem in an inclusive classroom (Sorani-Villanueva *et al*., 2014). The challenges related to mobility and accessibility for students with VI in an inclusive classroom can be attributed to physical barriers, limited resources, and a lack of awareness about the specific needs of these students. This implies creating a holistic approach that addresses physical and attitudinal barriers, fostering an inclusive environment that supports the full participation of students with VI in the learning process.

Other challenges faced by the informant is difficulty in remembering pathways, as stated:

> "I have a hard time remembering where I am going, I have a hard time remembering the place where I am standing."

This means that the informant needs help remembering which place he has been. This agrees with the results of a study where some students attempted to prepare themselves for the physical challenges of walking alone by visiting and hiring an orientation instructor. Despite some help, they still needed to prepare for daily campus challenges (Lourenz & Swartz, 2016). Despite their proactive approach in seeking assistance from an orientation instructor to prepare for walking alone, students may need help remembering pathways. This implies the importance of ongoing support and strategies to address specific memory-related obstacles in their navigation efforts.

1.2. Instruction

In terms of instruction, the informant experienced an inability to understand visual presentations without orally delivered descriptions, as stated:

> "It's hard for me to understand especially when the teacher doesn't describe the visual representation. . ."

This means that the informant has difficulty understanding visual presentations, especially since his professor is not giving oral descriptions. Individuals with visual impairment struggle to comprehend visual presentations due to the absence of accessibility and descriptions (Sappleton & Lindsley, 2015). The absence of image descriptions in presentations limits their access to visual content, hindering their understanding and engagement with the content. This implies that professors must provide oral descriptions and interpretations to guide students with VI through the discussion. Another challenge faced by the informant is the unavailability of educational assistance, as stated:

> "It is very hard to pass tasks face-to-face especially when no one will help me in doing the task."

This means that the informant needs help complying with the task given due to a lack of assistance to make outputs. This agrees with the study, where lack of academic support to personnel was a difficulty for students with visual impairment (Firat, 2021). Lack of academic support poses a significant challenge for visually impaired students, hindering their ability to access necessary resources, materials, and accommodations for an inclusive and equitable learning experience. This implies that students with VI need the educational assistance of a sighted person to help them complete and comply with all tasks needed.

1.3 Socialization

In terms of socialization, the informant has difficulty in communicating, as stated:

> "I ask our class mayor when some of our professors will have a class or not and I will not receive a response immediately. . ."

This means the informant needs help acquiring information regarding their professor's confirmation of having a class. This confirms that the study of The UNESCO Bulletin on Special Education (1994) observed that blind and partially sighted children have more significant problems in learning, communicating, and interacting in an ordinary school than their sighted classmates (As cited by Otyola *et al*., 2017). Students with VI experience more significant difficulties in communication due to a lack of awareness about inclusive communication methods, limited access to visual cues, and societal misconceptions about their abilities. This implies emphasizing the need for tailored support and that clear, complete, but concise information should be provided.

Another challenge faced by the informant was the distracting environment, as stated:

> "I cannot focus because they are noisy. . ."

This means that the informant is having difficulty focusing in his class due to noise, which implies that environmental noises hinder the informant from learning. This agrees with the study, which reported that noise from other classmates is one of the problems for students with visual impairments during important classes or exams (Negash & Gasa, 2022). Noise from other classmates can pose a significant challenge for students with VI as it disrupts their auditory focus and reliance on non-visual cues, hindering their ability to concentrate and perform optimally in academic settings. This implies that all students should also be considerate of their classmates with VI since hearing is one of the essential senses they use to get information.

1.4 Educational Compliance

In terms of educational compliance, the informant was given minimal considerations, as stated:

> "Oh, no, they do not give. . ."

This means that the informant needs to comply and submit all needed requirements to be done on time. This agrees with the

study where some faculty in a particular university in the USA were reluctant to modify their classroom procedures, giving students only partial accommodations or urging them to postpone receiving any special considerations until they "showed that they needed them" (Murphy, 1992, p. 64, as cited by Scott, 2009). Students with VI are given partial accommodations or limited special considerations in educational compliance; it can restrict their equal access to information, hinder participation, and present challenges to a fully inclusive learning environment. This implies that to be inclusive, professors should consider extending a deadline or making other accommodations for students with VI.

1.5 Assistive Technology

In terms of assistive technology, the informant experienced the inability to catch up with screen and audio readers, as stated:

> "Yes, it is very hard for me and I cannot understand especially when the teacher discusses a lot and when the audio is too fast. . ."

This means that the screen readers and audio readers have cases that cannot keep up due to the speed of the professor's talking audio. This agrees with the study where screen reading software bypasses sensory and motor skills associated with decoding and rapid word naming and listening to text read aloud at substantially faster rates, which causes an individual to be unable to catch up (Jackson, 2012). Students with VI struggle with screen reader software that operates at substantially faster rates, bypassing sensory and motor skills, as the accelerated pace can impede their ability to comprehend and keep up with the information being conveyed. This implies that to be inclusive, professors should consider by speaking or discussing at a lower speed the software and technology used to keep up and function well or other accommodations for students with VI.

2. Opportunities

2.1 Accessibility

In terms of accessibility, the informant has the opportunity to utilize ramps and elevators, as stated:

> "I can use the elevators freely especially when the classroom is located at the higher floors. . ."

This means that the informant implies that elevators help the students with VI easily access different building floors. This agrees with the study of some of the facilities that can be provided in elevators for people with disabilities; among them are people who are blind (McAuley, 1996, as cited by Edwards, 1998). Elevators are the most commonly utilized assistive technologies in academic settings, allowing students with disabilities to move freely between floors, attend class, and access facilities. This implies that elevators are vital assistive technology for students with VI to access facilities easily.

2.2 Instructions

In terms of instructions, simplified instructions were given as the informant stated:

> "Some of my professors use simple words in giving instructions so that we can understand it directly. . ."

This means that some professors give simplified instructions to accommodate the informant. This agrees with the study of reading and listening comprehension as a critical component of language development of learners with visual impairment as they rely more on auditory and tactile exploration and perception (Ramakrishnan, 2014). Providing simplified instructions to students with VI is crucial for enhancing their understanding and independence, ensuring that information is presented in a clear and accessible manner, and facilitating their active participation in various learning activities. This implies. Professors should continue providing simplified instruction to increase engagement, improve academic performance, and provide a more inclusive educational experience.

2.3 Socialization

In terms of socialization, the informant receives positive experiences through peer support, as stated:

"They (my classmates) helped me, especially on PE (activities)"

This means that the informant was given help by his peers during their physical education class. Giving necessary support to access the physical education curriculum is vital to students with visual impairment (Lieberman, 2019). Providing essential support for students with VI ensures equal participation, promotes physical activity, and contributes to their overall well-being and inclusion in the educational environment. This implies that the informant appreciates and is thankful for the help of his peers.

2.4. Assistive Technology

In terms of assistive technology, the informant was able to utilize assistive devices, as stated:

> "Yes, I can use screen readers both on my cell phone and laptop. I can use it easily, and my teachers allow it. . ."

This means that the professors allow the informant to utilize the assistive devices. This agrees with the study that screen readers are useful for producing spatial awareness of element position on the screen (Murphy *et al*., 2007). Allowing students with visual impairment to use assistive devices is crucial for promoting accessibility, independence, and equal participation. This implies that professors should continue to allow students with VI to use assistive devices to enhance their learning experiences, improve academic performance, and increase confidence in navigating educational environments.

Case B

1. Challenges

1.1 Accessibility

In terms of challenges in mobility, the informant has difficulty moving from one place to another, as stated:

> "It is hard especially when I need to take a lot of turns to reach the classrooms, it is dark and it is very humid."

This means that the informant highlighted the difficulty of moving around in such conditions as buildings being poorly lit. This agrees with the study that significant difficulties

students with VI faced are mobility and the lack of well-lit buildings as major obstacles, impairing their ability to navigate safely and independently (Sauerburger *et al*.,2013). Inadequate lighting hinders students' safe and independent mobility with VI, causing challenges in orientation and mobility in poorly lit environments, leading to risk and reduced independence. This implies that well-lit buildings are essential for safe mobility.

1.2 Instruction

In terms of instruction, the informant experienced an inability to understand visual presentations without orally delivered descriptions, as stated:

> "Some posts of the professors like PPTs are not accessible and some photos do not have descriptions."

This means that some presentations, like the description of the images, are not provided for the students with VI. Individuals with visual impairment struggle to comprehend visual presentations due to the absence of accessibility and descriptions (Sappleton & Lindsley, 2015). The absence of image descriptions in presentations limits their access to visual content, hindering their understanding and engagement with the content. This implies that professors must provide oral descriptions and interpretations to guide students with VI through understanding the discussion.

1.3 Socialization

In terms of socialization, the informant has difficulty in communicating, as stated:

> "Actually I am a shy type of person and sometimes my response to others is not correct and I won't mind others at all."

This means that due to low self-confidence, students with visual impairment have barriers to expressing themselves. Individuals with VI often experience social difficulties due to poor self-esteem and lack of social skills (Salehi *et al*., 2015). Students with VI fear being stigmatized or treated unequally by their peers, discouraging them from expressing themselves openly. This implies that students with VI who lack self-confidence find it difficult to express themselves, leading to social challenges.

Another challenge that the informant experienced is peers displaying unawareness of the disability, as stated:

> "We cannot deny that not all can understand or will help directly."

This means that some people have a lack of awareness and knowledge about people with disabilities and are willing to help. This agrees with the study that found that unwillingness to assist individuals with disabilities is influenced by fear, lack of knowledge, and discomfort in interacting with them (Jones & Smith, 2019). Ignorance about disabilities leads to negative stereotypes, discrimination, and exclusion from society. This implies that a lack of knowledge about disabilities contributes to misconceptions and exclusion that prevent them from offering assistance.

1.4 Educational Compliance

In terms of educational compliance, there are no given extensions in submitting. The informant said:

> "No, all of us are fair and I need to be used to it because I am already in college."

This means there are no given extensions, as there is fairness in passing the outputs and no unique treatments for students with VI. This confirms the study by Lourenz and Wartz (2016), which indicates that students need more time for exams and homework but often face challenges in requesting extensions due to limited availability. Students with VI have significant challenges due to the lack of available extensions, which may lead to poor academic outcomes. This implies that the professors should consider extending the deadline and giving accommodations for students with VI.

1.5 Assistive Technology

In terms of assistive technology, the informant has difficulty catching up in using a screen reader, as stated:

> "If we need to pass a task immediately, it takes time for me to screen read."

This means that screen reading is time-consuming and is a challenge for the students with VI to catch up. The study revealed that 30.4 % of students with visual impairments encounter computer frustrations while using screen readers (Lazar *et al*., 2017). The intricate nature of screen readers and the limited compatibility of certain websites create numerous challenges for students with VI. This implies that professors should give enough time to pass tasks to students with VI as they still need to access their screen readers.

Another challenge that the informant experienced is the unavailability of screen readers, as stated:

> "We need to find an available reader and set a time when he/she is free".

This means that students with visual impairment have difficulty finding human screen readers, possibly due to limitations and availability. This agrees with the study that pupils with VI have difficulty reading comprehensively due to a lack of readers (Iqbal & Ashraf, 2023). The lack of readers poses a significant hurdle for the students, hindering their ability to comprehend texts comprehensively. This implies that limited human readers make it more difficult for students with VI to comprehend texts effectively.

2. Opportunities

2.1 Accessibility

In terms of accessibility, the informant has the opportunity to utilize ramps and elevators, as stated:

> "Yes, I was able to learn and access it because of nervousness that I might be late for class. . ."

This means that the informant makes an effort to learn to use the elevator to access the floors of the buildings to attend classes quickly. This agrees with the study where elevators are accessible for people with visual impairment (McAuley, 1996, as cited by Edwards,1998). Elevators are commonly utilized as assistive technologies in academic settings, enabling students with VI to navigate between floors, attend class, and access facilities freely. This implies that elevators

are vital assistive technology for students with VI to access facilities easily.
Also, there is provision for priority lanes, especially in the canteen, where the informant said:

> "In the canteen, if there are a lot of people, the vendor will assist and ask me first before buying what I want. . ."

This means that students with VI receive preferential treatment in the school cafeteria. This agrees with the study that the school offers priority lanes for students with disabilities in its support services (Durian & Perena, 2022). The implementation of priority lanes for students with VI for students aims to provide support and accommodations to ensure academic success and promote inclusivity. This implies that priority lanes give students with VI easier access to the cafeteria.
The informant added that the library is utilized as a learning space, as stated:

> "It was my dream to go with my classmates to the library because it really feels like I'm a college student. . ."

This means that going to the library with classmates is a good experience for being a college student. This agrees with the study that equitable access to academic libraries for students with VI and the ability to enjoy a whole life experience. Students with VI who have access to academic libraries positively impact student's academic success. This implies that priority lanes impose academic support and diversity.

2.2 Instruction
In terms of instruction simplified instructions and accommodations were given as the informant stated:

> "Some teachers use simple words during discussions and also in giving instructions. . . "

This means that some teachers utilize simple and concise words in every discussion or when giving instruction. This agrees with the study of reading and listening comprehension as a critical component of language development of learners with visual impairment as they rely more on auditory and tactile exploration and perception. Providing simplified instructions to students with VI is crucial for enhancing their understanding and independence, ensuring that information is presented in a clear and accessible manner, and facilitating their active participation in various learning activities. This implies. Professors should continue providing simplified instruction to increase engagement, improve academic performance, and provide a more inclusive educational experience.

2.3 Socialization
In terms of socialization, the informant receives positive experiences through peer support, as stated:

> "Sometimes, someone will really help me even though I am just going to the canteen or if I'm confused where to go and when to take a left or right turn. . ."

This means that some individuals offer assistance when help is needed. This agrees with the study that the cafeteria is a context for supporting peer interaction and social skill development (Travers, 2002). School lunch involves not only lunch itself but also the interactions of students. This implies that the cafeteria is important as it can be a space for fostering relationships and enhancing social skills among students.
Also, the informant's classmates embraced differences, as stated:

> "When I am talking with my classmates, they treat me as if I am not visually impaired. . ."

This means that classmates treat students with visual impairment equally and ensure they are accepted. This study agrees with the study, describing school social inclusion as the absence of peers or staff overlooking and meeting students' needs (Jessup *et al*., 2018). Students who are aware of disability displayed greater acceptance and empathy towards them. This implies that other learners should be aware of disabilities to promote inclusivity and ensure that students with VI are accepted.

2.3 Assistive Technology
In terms of using assistive technology, the informant utilized the use of different devices, as stated:

> "I can use braille if necessary"..

This means that they can utilize Braille if necessary. This agrees with the study that enhances access to braille materials for optimal learning. Using Braille is crucial for the academic success and integration of students with VI. This implies that assistive technology should be accessible to help learners in their academic learning and performance.

Case C
1. Challenges
1.1. Accessibility
In terms of accessibility, the informant faced difficulties in transferring from one place to another, as stated:

> "I can use braille if needed."

This means that the informant is having difficulty locating her/his chair due to the unfamiliarity with the place. This confirms that mobility/accessibility is a reported problem in an inclusive classroom (Sorani-Villanueva *et al*., 2014). The challenges related to mobility and accessibility for students with VI in an inclusive classroom can be attributed to physical barriers, limited resources, and a lack of awareness about the specific needs of these students. This implies creating a holistic approach that addresses physical and attitudinal barriers, fostering an inclusive environment that supports the full participation of students with VI in the learning process.

1.2 Instruction
In terms of instruction, the informant experienced an inability to understand visual presentations without orally delivered descriptions, as stated.

> "There are some professors who still use phrases in the discussion like "like this one" and "it goes like this" in pointing out something that makes it difficult for me to follow"

This means the informant needs help when other teachers directly point to the visual presentations without verbal descriptions. Individuals with visual impairment struggle to comprehend visual presentations due to the absence of accessibility and descriptions. The absence of image descriptions in presentations limits their access to visual content, hindering their understanding and engagement with the content. This implies that professors must provide oral descriptions and interpretations to guide students with VI through the discussion.

1.3. Socialization

In terms of socialization, the informant faced difficulty in communicating, as stated:

> "I tend to get shy in approaching someone because they might get angry or upset"

This means that the informant is experiencing difficulties due to shyness and anxiety. Students who are blind experience unfriendly attitudes from their sighted colleagues because of their conditions. Students with VI encounter difficulties in communication due to shyness, and this hesitancy results in limited social interactions, reduced opportunities for collaboration, and potential challenges in building interpersonal relationships within the educational environment. This implies creating a supportive and inclusive learning environment for students with VI and other disabilities, fostering them.

1.4 Educational Compliance

Regarding educational compliance, the informant faced difficulties in the lack of submission extensions given by professors. The informant said:

> "Sometimes I suggest that I will just make my answers in bullet instead in diagrams knowing it is hard for me"

This means that the informant is asking for consideration to comply with the activity using a different way or method. This statement was supported by a study by Clabough *et al*.

1.5 Assistive Technology

In terms of assistive technology, the informant faced difficulties in catching up with the screen and readers, as stated:

> "It takes time to screen-read each which is a bit hard for me to catch up"

This means that the informant is having difficulty keeping up with the assistive devices due to pacing, especially in the classroom setting where there is allotted time for each activity. This agrees with the study where screen reading software bypasses sensory and motor skills associated with decoding and rapid word naming and listening to text read aloud at substantially faster rates, which causes an individual to be unable to catch up (Jackson, 2012). Students with VI struggle with screen reader software that operates at substantially faster rates, as the accelerated pace can impede their ability to comprehend and keep up with the information being conveyed. This implies that to be inclusive, professors should consider by speaking or discussing at a lower speed the software and technology used to keep up and function well or other accommodations for students with VI.

2. Opportunities

2.1. Accessibility

In terms of accessibility, the informant has the opportunity to utilize ramps and elevators, as stated:

> "I find it okay since my classmates or my close friend will help me. Sometimes, I walk slowly in order to be in front using my cane. . ."

This means that the informant experienced using the elevator provided that he/she is with someone. Elevators are accessible for people with visual impairments. Elevators are the most commonly utilized assistive technologies in academic settings, allowing students with VI to move freely between floors, attend class, and access facilities. This implies that elevators are vital assistive technology for students with VI to access facilities easily.

2.2. Instruction

In terms of instruction, simplified instructions and accommodations were given as the informant stated:

> "I really like to listen when the teacher simplifies the difficult concepts to discuss"

This means the informant prefers to listen when complicated concepts are simplified in discussion. This agrees with the study of reading and listening comprehension as a critical component of language development of learners with visual impairment as they rely more on auditory and tactile exploration and perception. Auditory and tactile learning methods are beneficial for students with VI when information is disseminated in the simplest way. This implies that listening comprehension is vital to students with VI as the primary learning method when utilized efficiently.

2.3. Socialization

In terms of accessibility, the informant faced opportunities to experience peer support, as stated:

> "They motivate me to strive more in communicating to them and reaching out for help."

This means that the informant enjoys their peers' warm and welcoming environment. Developing a sense of belonging and acceptance in the school environment and providing instrumental and emotional support from teachers and peers positively impact students' well-being, and they are considered fundamental components of inclusive education. To create and foster inclusive learning environments, it is essential to recognize the impact of peer support and acceptance on the overall development of the learner. This implies that peer support is vital in developing students with VI.

2.4. Assistive Technology

In terms of accessibility, the informant utilizes a laptop, cellphone, and braille, as stated:

> "I use my laptop most of the time. The app that I'm using on my laptop is Screenreader where it reads every written instruction on my devices."

This means that the informant experiences using Braille anytime and both cell phones and laptops whenever needed. A relevant study focuses on assistive technologies and how they compensate for students' impairments. The integration of assistive technology is crucial in compensating the learners with VI and enhancing accessibility, independence, and participation in educational settings. This implies that assistive technology is vital in supporting students with VI in education.

4. Conclusion and Recommendation

Students with VI faced challenges in accessibility, mobility, understanding of instructional materials, socialization, educational support, and compliance with requirements, affecting their academic experience and well-being. However, there are opportunities that they have identified and experienced both in the classroom and the university. The opportunities include using ramps and elevators, peer support, assistive technology, receiving peer mobility assistance, priority lanes, and inclusivity in school events. It is recommended that infrastructures with sufficient lighting and tactile assistance should be considered for better accessibility. Also, teachers should provide vocal descriptions and interpretations of visual content, as well as incorporate assistive technologies such as braille and screen readers to aid students' difficulty in accessing instructional materials. The provision of mobility aids in exploring and familiarizing the campus and socializing is equally important. Furthermore, institutions can pass new policies to create priority lanes for students with disabilities. Implementation of these measures can create a more inclusive environment for students with VI to thrive academically and socially.

5. References

1. Acosta EJR, Allera FA, Cullo KB, Delamide MS, Obamos BA, Cabanilla AJr. Accessibility of Online Learning for Students with Disabilities Amidst Pandemic. International Journal of Research in Applied Sciences and Engineering Technology. 2023;11(4):1107–1122. Available from: https://doi.org/10.22214/ijraset.2023.49486
2. Acheampong NO, Acheampong EK, Rockson GNY. Social interaction patterns that exist between students who are blind and their sighted peers at University of Education, Winneba. International Journal of Research Studies in Education. 2020;10(3):23-37. Available from: https://doi.org/10.5861/ijrse.2020.5067
3. Amin AS, Sarnon N, Akhir NM, Zakaria SM, Badri RNFRZ. Main Challenges of Students with Visual Impairment at Higher Education Institutions. International Journal of Academic Research in Progressive Education and Development. 2021;10(1):734-747. Available from: https://doi.org/10.6007/ijarped/v10-i1/9682
4. Arias CH, Calago CNS, Calungsod HFB, Delica MA, Fullo ME, Cabanilla AJ. Challenges and Implementation of inclusive education in selected Asian Countries: A Meta-Synthesis. International Journal of Research in Education and Science. 2023;9(2):512–534. Available from: https://doi.org/10.46328/ijres.3089
5. Bergado C. Almighty God, thank you for giving me a complete support system. [Facebook]; c2022. [cited 2023 Sep 8]. Available from: https://www.facebook.com/cyril.bergado.3/posts/pfbid02aKFY1T27YYr3NQhxjKJpHfovBR4nN1jsRvGHaqEBB521rF9Y4ezaZUJVxEQv7aZel
6. Chi C. US report: Philippine laws for persons with disabilities, special education not effectively enforced. Philstar.com; c2023. Available from: https://www.philstar.com/headlines/2023/03/22/2253621/us-report-philippine-laws-persons-disabilities-special-education-not-effectively-enforced#:~:text=Republic%20Act%2011650%20or%20the,among%20Filipino%20students%20with%20disabilities.
7. Durian R, Perena E. Challenges of Students with Disabilities in Higher Education. United International Journal for Research & Technology. UIJRT. 2022;3(11):104-109.
8. Edwards AD. Making elevators truly accessible to blind people. Elevator World. 1998;46:34-35.
9. Firat T. Experiences of students with visual impairments in higher education: barriers and facilitators. British Journal of Special Education. 2021;48(3):301-322. Available from: https://doi.org/10.1111/1467-8578.12365
10. Iqbal K, Ashraf S. Perspective Chapter: The Barriers in Inclusive Set-Up for Students with Visual Impairment at Higher Education Level – Pakistan Scenario. IntechOpen. [n.d.]; c2023. Available from: https://www.intechopen.com/online-first/85397
11. Jackson RM. Audio-Supported Reading for Students Who Are Blind or Visually Impaired. National Center on Accessible Educational Materials; c2012. Available from: https://aem.cast.org/binaries/content/assets/common/publications/aem/asr-blind-visuallyimpaired.pdf
12. Jessup G, Bundy AC, Broom A, Hancock N. Fitting in or feeling excluded: The experiences of high school students with visual impairments. Journal of Visual Impairment & Blindness. 2018;112(3):261-73.
13. Kawooya D, Robinson EP, Copeland CA, Fox B. Equitable access for Blind, Visually Impaired, and Print-Disabled (BVIPD) students in online learning. Proceedings of the Association for Library and Information Science Education Annual Conference; c2023. Available from: https://doi.org/10.21900/j.alise.2023.1346
14. Lazar J, Allen A, Kelinman J, Malarkey C. What Frustrates Screen Reader Users on the Web: A Study of 100 Blind Users. [Internet]; c2007. [cited 2023 Oct 21]. Available from: https://www.tandfonline.com/doi/abs/10.1080/10447310709336964
15. Lieberman LJ. Physical Education for Children With Visual Impairment or Blindness. [Internet]; c2019. [cited 2023 Nov 11]. Available from: https://eric.ed.gov/?id=EJ1200354
16. López MDL. Accessibility for blind and visually impaired people. International Congress Series. 2005;1282:1038–1040. Available from: https://doi.org/10.1016/j.ics.2005.05.197
17. Lourens H. Experiences of visually impaired students in higher education: Bodily perspectives on inclusive education. NCBI; c2016. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5130161/

18. Malone JA. Digital Classrooms: A multiple case study of four visually impaired college students' challenges and opportunities; c2017. [n.d.]. Available from: https://eric.ed.gov/?id=ED579435
19. Manitsa I, Δόικου M. Social support for students with visual impairments in educational institutions: An integrative literature review. British Journal of Visual Impairment. 2020;40(1):29-47. Available from: https://doi.org/10.1177/0264619620941885
20. Mason NF, Francie DB. Thematic Analysis; c2023. [Internet]. 2023 Aug 22 [cited 2023 Sep 8]. Available from: https://www.researchgate.net/publication/370290163_Thematic_Analysis
21. Moriña A. Inclusive education in higher education: challenges and opportunities. European Journal of Special Needs Education. 2016;32(1):3-17. Available from: https://doi.org/10.1080/08856257.2016.1254964
22. Murphy E, Kuber R, McAllister G, Strain P, Yu W. An empirical investigation into the difficulties experienced by visually impaired Internet users. [Internet]. 2007 Oct 23 [cited 2023 Oct 21]. Available from: https://www.researchgate.net/profile/Ravi-Kuber/publication/220606718_An_empirical_investigation_into_the_difficulties_experienced_by_visually_impaired_Internet_users/links/55428f010cf234bdb21a16ac/An-empirical-investigation-into-the-difficulties-experience
23. Negash KH, Gasa V. Academic barriers that prevent the inclusion of learners with visual impairment in Ethiopian mainstream schools. SAGE Open. 2022;12(2):21582440221089934. Available from: https://doi.org/10.1177/21582440221089934
24. Otyola WR, Kibanja GM, Mugagga AM. Challenges faced by visually impaired students at Makerere and Kyambogo Universities. Makerere Journal of Higher Education. 2017;9(1):75-86.
25. Pacheco E, Yoong P, Lips M. The role of ICTs in students with vision impairments' transition to university. [n.d.]. Available from: https://www.researchgate.net/publication/321866201_The_role_of_ICTs_in_students_with_vision_impairments'_transition_to_university
26. Ramakrishnan R. A study on verbalism among visually impaired children In Andhra Pradesh. Cognitive-crcs. [n.d.]. Available from: 10.15405/ejsbs.2013.8.issue-1