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## Challenges Faced by Students with Low Vision in Preparing for their Public Exams: A Qualitative Study

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**Abstract:** *Students with low vision often face problems during their academic careers. The study's main purpose was to identify the challenges faced by the students with low vision in preparing for their public exams. The researcher developed a semi-structured interview for data collection from students with low vision. The thematic analysis technique was used to analyze the data. The present study revealed that the majority of the students with low vision had no access to learning material and supportive services. It was found that insufficient government support in terms of budget, inadequate policies, and built environments hinder students with low vision in preparing for their exams; hence, most respondents depend on others to complete their assignments. Also, non-supportive physical environments are adding much to their mobility issues. Participants' detailed description in this study will guide school administration, policymakers, examiners, services providers, and parents.*

**Key Words:** Challenges, Exam Preparation, Students with Low Vision

### Introduction

Any form of physical or mental impairment greatly affects the quality of life if not aided with proper rehabilitation services. However, people with low vision (LV) suffer a great deal compared to people with other disabilities ([Gold, Shaw, & Wolfe, 2010](#)). Studies conducted during the last decade have concluded that LV may lead to a lack of social autonomy and association loss. Functional weaknesses and diminished portability can further increase the danger of severe injuries such as fractures ([Stelmack, Rosenbloom, Brennehan, & Stelmack, 2003](#)).

It is necessary to understand the vision, which has a broad context and includes all the procedures of the visual framework and the entirety of the visual elements. A sensory system in living organisms that perceives the environment through light is known as the optical system. Images are formed in the eye as the result of refraction. Light waves, when they reach the

cornea, are refracted and go to the retina, where the light energy is converted into neural activity. This neural activity is further transduced and utilized in collaboration with the movement from other sensory organs to support the way an individual feel, move and decide ([Sim, Yap, & Chia, 2014](#)).

Visual impairment can broadly be classified into two major categories: blindness and low vision (LV). LV can be defined as visual acuteness of below 6/18 to the impression of light in the better eye or visual fields  $\leq 10^\circ$  from the point of obsession. It will significantly affect the vision even after refractive medication treatments. Spectacles, contact focal points, or medication is not likely to further support people with LV for a longer time. Blindness, on the other hand, is the loss of vision so much so that a person cannot see the light. ([Berger, 2009](#); [Scheiman, Scheiman, & Whittaker, 2007](#)).

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Vision has a pivotal role to play at every stage of an individual's life. 80% of our perception is based on what we see and is equally significant for correspondence. Half of all communication is non-verbal, including body language, non-verbal cues, signals, and appearances ([Banyard, Dillon, Norman, & Winder, 2015](#)).

For newborns, it's crucial to recognition of surroundings and family members. They smile back or make clamours to family and parental figures that strengthen their bonds with their families ([Barenholtz & Feldman, 2003](#)). It also helps a child to investigate, learn, and create deftness ([Hellström & Jacob, 2003](#)). It makes it more accessible for teens to progress in their education ([Chanfreau & Cebulla, 2009](#)). It is equally crucial in empowering individuals at their workplaces in their adulthoods, hence contributing to the satisfaction of the ordinary aspects of life, such as support autonomy and improving general well-being ([Swenor et al., 2017](#)).

Vision, however, is developed gradually with age. Dull adaption visuals are developed at six months, visual acuity at three years and visual fields age 4 to 10 years ([Hoyt & Taylor, 2012](#)). An impairment is a point when a disease influences the structure or elements of an individual's body. The impairment of vision correlates to the visual system and the features of the optical system. Individuals with vision impedance may encounter inability if they do not have easy access to supportive aids and are likely to face obstructions, for example, segregation or out-of-reach structures or transport.

There are various degrees of vision impairment that affect an individual's everyday life in multiple manners. For instance, somebody with moderate vision impairment will be unable to drive legitimately or read a book. Individuals with severe vision impairment are unlikely to recognize people they know and cannot differentiate between light and dark ([Chia et al., 2012](#)). Not necessarily; people with the same vision impairment have similar experiences. Two individuals with moderate vision weakness may have altogether different experiences. Various categories and levels of visual disability depend on estimating visual keenness and the visual field.

Eye diseases are common, curable, and reversible in most cases; however, some may cause an irreversible visual deficiency if not treated. A

developing body of research indicates that poverty can be both a reason and outcome of vision misfortune. Individuals with vision impairments are more prone to brutality and maltreatment than their friends ([Stevens et al., 2013](#)).

Similarly, students with low vision face problems in their everyday lives. Studies conducted in the African context show that students with LV are prone to unpleasant encounters with their friends and teachers. Their unique needs remain unaddressed, and they are not given opportunities to participate in projects to show their talent ([Milner, 2009](#)).

In Pakistani society, students with low vision have clear rights as other students in planning tests. Along with students with visual impairment, students with low vision need an explicit change in the educational program. Students with low vision require large-print material, braille, and substance alteration. Accordingly, the researcher decided to identify difficulties students face with low vision in preparing for exams.

## Literature Review

This section is intended to explore the challenges students face with low vision in preparing for their exams. Students with LV find it difficult to obtain knowledge in a standard setting. Thus, they need special arrangements such as the availability of alternative methods and techniques for reading, writing, and social encounters.

Low vision means that a loss of vision that is serious enough to interfere with ordinary tasks and that cannot be adjusted to typical vision by standard eyeglasses or contact lenses.

Out of the 161 million individuals with Visual Impairment (VI), 37 million are blind, and 124 million have low vision ([Resnikoff & Pascolini, 2002](#)). The genuine number of individuals with low vision could be generously higher as a shared vision has, as of late, been tended to in massive epidemiological investigations ([Khairallah et al., 2015](#)). 90% of the individuals with vision hindrance live in underdeveloped countries ([Aga, 2001](#)), over 1.4 million children with low vision are under 14 years old. According to a study by [Khan and Jay \(2008\)](#), the majority of the children with visual impairment and children with low vision conditions are based in underdeveloped countries, like Pakistan. The main factor behind this is that they cannot manage the cost of vision

improvement or vision restoration benefits that could include them in regular schools.

The calculated number of visually impaired people of any age in Pakistan was 1.25 million (Jadoon et al., 2006). Utilizing population projections for the entire population of Pakistan, the number of visually impaired individuals in Pakistan has increased roughly to 2.4 million in 2020, accepting that the predominance of visual impairment stays unchanged (Shah et al., 2008).

It is assumed that students with low vision can learn a second language as any other students based on their hearing sense, but they are not provided with the material that supports the learning of a second language (Farmer & Morse, 2007). The fundamental part of learning will be learning words and jargon. Reading and writing are a real challenge for students with LV as it requires them to see. They are particularly slow in their readings compared to their friends (Corn et al., 2003). Given their low vision, they might not see or read everything printed in regular fonts. Perusing written characters is made conceivable through visual tools. It ought to be noted, in any case, that as a rule, their pace of perusing will be slower.

A few students may utilize a mix of media-visual, material, sound, or electronics to improve or bolster their basic understanding (Wiazowski, 2009). A study by Mberimana (2018) noticed that students with visual hindrance adapt comparably to their companions. Their powerlessness to process visible data proficiently brings about their requiring explicit curricular-related changes.

Lack of awareness regarding LV and challenges it has to pose, students with LV face difficulties in their education (Layton & Lock, 2001). The absence of adequate information is one of the significant difficulties that these students involvement with training (Mwakyeja, 2013).

Also, students with LV are not assessed based on their ability and clear, instructive needs, yet based on their demonstration in-class tests and assignments. A regularizing sort of appraisal appears to command in these classes. In the settings where there are students with LV are present, alternative strategies must be incorporated to assess the abilities of such students. This calls for extensive teachers training, especially in underdeveloped countries like Pakistan (Cox & Dykes, 2001).

A number of studies have identified a gap while arranging exams for students with LV, mostly in underdeveloped countries (Legge, 2006). Students, in general, are not provided with papers with huge prints and pose challenges while reading and understanding the exam papers within the given time limit (Leacock & Nesbit, 2007). Developed countries, however, allow their students with unique needs to attempt their exams electronically. Pakistan, unfortunately, is no different from other underdeveloped countries. The students are only provided with a photocopy of the A3 variant and no electronic rendition (Khan & Jay, 2008).

A prior study by Kabeto (2015) highlighted the challenges faced by students with LV in their learning include An inflexible curriculum, socio-economic deficiency, the problem in communication, negative attitudes towards the disabled, inaccessible environment, inappropriate and inadequate support services, inadequate policies, non-recognition and the non-involvement of parents, and untrained teachers. Supalo (2010) underscored that because educators, in general, do not have a welcoming attitude to students with LV, they are not likely to pick flexible and accommodative instructional strategies in their classes.

Having lived in a society that is generally inconsiderate of the unique needs of the people experiencing any disability, students with low vision develop self-pity and don't consider themselves worthy enough to think otherwise (Gerber, 2003).

Various assistive innovation gadgets can help students with unique needs. Bidika (2014) clarifies that technology can ease students with LV in three different ways, by expanding the size of the substance itself, by expediting the picture of the material nearest to the eye, and by utilizing a gadget or assurance to amplify the size of the material. Unique tools and hardware can upgrade the training of students with visual debilitation.

A previous study by Bidika (2014) expressed that if the entire school works in coherence to each other, much of the problems of students with LV can be resolved. Sharma et al. (2010) stressed that coordinated efforts could expand new horizons of opportunities. Even though particular literary works acknowledge this contention, some other confirmations show that the advantages to

reconciliation may not be as incredibly accurate as it seems.

## Methods and Materials

Multiple case study design enabled the researcher to develop more extensive descriptions and explanations of the issues under study. This design best suits the study because it makes it easier for the researcher to understand the similarities and differences among the cases (Thomas, 2021).

Schools facilitating students with low vision in Lahore were selected as the research sites. The selection of the participants was purposefully

made while utilizing the criterion sampling technique. Following criteria were used to decide the inclusion of participants in this study:

1. The participant self-identified himself or herself as a person with LV
2. The participant was willing to become part of this study.
3. The participants could see large obstacles and could go outside for a short walk.
4. The participants had no evidence of severe cognitive deficits or dementia.
5. The participants were enrolled in classes 8 to 12.

**Table 1.** Demographic Information of the Participants

Participant	Gender	Age (Years)	Class	School
Participant 1	Female	14	8 <sup>th</sup>	Government Blind Girls School
Participant 2	Female	13	8 <sup>th</sup>	Government Blind Girls School
Participant 3	Male	14	8 <sup>th</sup>	Government Sunrise Institute
Participant 4	Female	15	9 <sup>th</sup>	Government Blind Girls School
Participant 5	Male	14	9 <sup>th</sup>	Government Sunrise Institute
Participant 6	Female	15	9 <sup>th</sup>	Government Sunrise Institute
Participant 7	Female	16	10 <sup>th</sup>	Government Sunrise Institute
Participant 8	Male	17	10 <sup>th</sup>	Government Sunrise Institute
Participant 9	Female	16	10 <sup>th</sup>	Government Sunrise Institute
Participant 10	Male	17	1 <sup>st</sup> Year	Government College University
Participant 11	Female	16	1 <sup>st</sup> Year	Government College University
Participant 12	Male	17	1 <sup>st</sup> Year	Government College University
Participant 13	Male	17	2 <sup>nd</sup> Year	Government College University
Participant 14	Male	18	2 <sup>nd</sup> Year	Government College University
Participant 15	Male	17	2 <sup>nd</sup> Year	Government College University

Semi-structured, open-ended interviews were conducted to gather information for this investigation from 15 participants enrolled in government institutes. The researcher asked the same questions from every participant to collect information. Further probing was done where necessary.

The study used a semi-structured, open-ended interview guide to gather information from the participants. The interview guide was broken down into different questions that were understandable to the participants. The questions were asked in simple language, encouraging the participants to give detailed answers.

The initial draft of the interview guide was discussed with the supervisor, and after discussion, some ambiguous questions were removed from the interview guide.

The researcher contacted the participants during school hours by visiting the government sector institutes on an agreed-upon date and time. Interviews were conducted in a comfortable environment as the administration arranged a separate room for the activity. Two digital audio recording devices were used to record the interviews. Also, the researcher used to take a few critical points in her diary whenever it was deemed necessary. All interview recordings were later transcribed and interpreted by the researcher

in the English language. A cross-case analysis was used to analyze the data (Yin, 2018).

The researcher informed the participants about the purpose of the research and that participation is voluntary (Ryen, 2021). Before collecting the data, the researcher provided the participants with the consent forms, which included an accurate explanation of the methods, risks, and benefits. Moreover, the participants were allowed to quit at any time. Participants' personal information and identity were kept confidential. Pseudo names were used to protect participants' identities. The responses from the participants are kept in a safe location, not accessible by anyone but the researcher herself.

## Findings

### Inaccessibility to Learning Material and Supportive Services

Thirteen out of the fifteen participants agreed that they face several challenges while preparing for their exams. The significant challenges faced by these students are inaccessibility to learning material and supportive services related to their education and exam preparation. For example, a participant stated, "I am not satisfied. Learning material and related services should be provided to students" (Participant 1). All participants believed that they could learn, prepare and can achieve their educational goals if related services were provided timely, and they could reach their academic target with the help of learning material and related supportive services. However, such support was missing for them. For example, a participant stated,

*I am not satisfied with the facilities provided. These are not enough for exam preparation. School administration should consider our disability and offer us all the necessary things which are helpful for us in exam preparation (Participant 8).*

Two participants showed their satisfaction concerning the provision of services. Both were satisfied with the provision of learning materials. They stated they are now adjusted to the services and doing their best for exam preparation. For example, a participant stated, "Provided facilities in my college are optical devices, large prints, magnifiers, whiteboards and markers" (Participant 14).

### Dependency and Inadequate Built Environment

Students with low vision face numerous problems from preparation to attempting their exams. As per the obtained responses, the challenges the students face while preparing for their examination can be classified into two major categories: Dependency and the built environment.

Thirteen out of the fifteen participants reported, often, they depend on others in taking exams due to low vision. Though the participants are provided with the writer during exams, they feel dependent on the writer in such cases. For example, a participant stated,

*It is challenging to prepare for exams on an individual level. Attempting written exams is dependent on the writer and his capabilities. However, group discussions are a separate story altogether. I feel relaxed and satisfied while preparing for such activities. Nothing pleases me more than anything that let me prepare on my own. (Participant 14)*

Dependency is represented here as a master theme, while inadequate policies and built environment are superordinate. Most of the participants stated that often they are victims of insufficient policies. For example, a participant stated, "Inadequate policies also cause distress for me during the exam. Examiners should also consider our disability and provide us material and environment according to my disability" (Participant 15). Almost always, students with low vision are dependent on others owing to unfavourable school or examination centres environment. For example, a participant stated,

*Nothing feels as good as taking my exams on my own. I am an independent warrior and like to complete all my academic tasks and assignments on my own. However, at times I have to take help from my teachers or class fellows (Participant 2).*

However, two participants out of fifteen reported, they had never faced problems while taking exams. For example, a participant stated, "I seldom seek help from my classmates while preparing or attempting my exams. I generally can complete my tasks on my own" (Participant 2).

The learning environment includes everything. From the physical environment where students prepare for their exams to the support,

they are provided with while attempting exam papers. For example, a participant stated, "Having prepared for my exams during a function going on in my hostel creates some severe distractions" (Participant 9). The learning environment should be designed in such a way so that students can adapt quickly and enhance their learning. The availability of learning materials and supportive technology should be well-organized to facilitate learning. A participant suggested that the environment for such students can be improved in the following three ways: "Increase the font size of the material. Provide a magnifying device to help in reading and writing. Use anti-glare surfaces and controlled lighting to support such students" (Participant 9).

Therefore, this whole system must be overhauled in the best interest of the students with LV. There are, however, some students that were fully satisfied with the facilities they have been provided. For example, a participant stated, "The physical environment never seemed to be a barrier in exam preparation. I prefer to complete my task independently because it would be helpful in the future" (Participant 14).

### **Meager Financial Resources**

In the present study, financial resources are represented here as a master theme while assistive technology and low-vision aids as a superordinate theme. The barriers encountered by students with low vision are financial resources, assistive technologies, and low vision AV aids. Most of the participants stated that they faced problems due to financial resources. For example, a participant stated, "Of course, financial resources matter for preparing exams because we have to purchase many things such as tape recorder, large prints, magnifiers and other equipment to prepare for exams" (Participant 7).

Students with LV are required to own assistive devices. There are numerous assistive technology devices and low vision AV aids around the world that can assist students with low vision, ranging from very simple to very complex. Several organizations are dedicated to making school and college education more accessible for students with LV. Having lived in New Media Age, the availability of required technological resources is not a big deal. The solutions are as simple as digitizing the content with larger font sizes. Students, by the time, reach their college level, are

trained to handle much of their problems and can successfully survive their college life given they are provided with the resources that support their struggle.

Not many families in Pakistan are financially strong enough to own such devices, leaving the students in a dilemma of figuring out the alternatives on their own. Unfortunately, in most cases, these students are not supported by their schools or government in terms of the availability of assistive devices. Almost all the participants agreed that financial resources are crucial for students having low vision. For example, a participant stated, "I can neither afford assistive technology, nor I am provided with any. So, I am left with no other option but to prepare for my exam orally (Participant 8)." Another participant stated,

*For me, financial resources mean a lot. Ensuring an optimal supply of appropriate, high-quality, affordable equipment, instruments, and consumables for the delivery of low vision services. Of course, financial resources matter for preparing for exams because we have to purchase many things such as a tape recorder, large prints, magnifiers and other equipment to prepare for exams. (Participant 7)*

Many of such underprivileged students reported that they are dependent on their teachers and friends who help them in preparing for their exams. For example, a participant stated, "Due to lack of assistive technology, I take help from my partial low vision peers to prepare my exams" (Participant 10).

### **Education of the Students with LV is a Shared Responsibility**

The findings of the current study present shared responsibility as a master theme while the role of school administration and parent's involvement as a superordinate theme. The barriers encountered by students with low vision were shared responsibility, the role of school administration, and parent involvement. Most of the participants stated that they faced problems due to a lack of coordination. Most participants said they had no involvement with their parents in their exam preparation.

In Pakistan, a great number of students with low vision are left without support due to the lack

of shared responsibility of school and parents. The absence of adequate financial resources is also a challenge faced by these students. They have problems in the physical environment and social adjustment. Learning material and provision of services for students with low vision needs to be improved according to their unique requirements.

All fifteen participants of the study strongly supported the notion that the education of the students with LV is a shared responsibility of family and educational institutions. For example, a participant stated, "It is the responsibility of the whole community to act as a unified team to minimize visual ability problems and to maximize our participation in all the activities" (Participant 1). They were of the view that parents should be included as active members of the support team as early in the process as possible. Educational priorities identified by family members should be a primary consideration. For example, "Had it not been my parents' encouragement and moral support, I would have never come that far" (Participant 2).

Since most of the participants of the study agreed that the best support they can receive from their families is their moral support, for example, a participant stated, "Living in hostels have its own tolls. Parents have no direct involvement in my academics. They can only encourage and motivate me to do my best despite the unfavourable conditions" (Participant 15). Participants agreed that schools have a vital role to play in facilitating such students. The target of establishing a high-quality visual learning environment is only attainable when a whole school approach is adopted and directed efforts are made. School management, teachers and learners with disabilities work together in a consistent, coordinated and cooperative manner. For example, a participant stated, "Of course, there is no second opinion regarding schools' role in facilitating students with unique needs. It is crucial for students like us, and definitely, schools are capable enough to provide favourable environments if they want to" (Participant 1).

Some of the students had very favourable responses to their school's management. For example, a participant stated,

*I have found my school's management very cooperative in this regard. They have been supportive all this time. They guide me while I*

*prepare for my exams, and my teachers go the extra mile if I need their help in subjects; I feel difficulty preparing. (Participant 9)*

## Conclusion

The current study provides an insight into the challenges that the students with LV usually face during their preparation for public exams. Almost all of the participants reported the lack of supportive services and inaccessibility to required learning resources as the major hinders in the process of their exam preparation and has far-reaching effects that go beyond exam preparation. Nonetheless, such students may have adverse effects on their language development, abstract thinking, problem-solving and reasoning skills, altogether affecting their quality of life.

It was also found that there is a dire need to frame policies that bind the school management and other concerned departments to provide required facilities and to establish such environments that support LV students in their learnings and exam preparation.

This study has found out that the financial resources of this group of people create a great barrier in their exam preparation. Due to financial issues, they are not able to purchase assistive devices.

Furthermore, it was found that the availability of assistive technology is due at students' end. In most cases, students belong to a humble background and are bound to either figure out alternatives to assistive technology or to depend on others for their preparation. Underprivileged students with LV, therefore, should be financially supported.

It was also noted that students with LV can only perform best when there is the direct involvement of parents and school administration. Almost all the participants appreciated the efforts of their school administration. However, since most of the students were living in hostels, they believed that parents could not support them but morally.

## Implications of Research Recommendations for Policymakers

Based on the findings of the current research study, the following recommendations for policymakers are made:

1. Policymakers should ensure that schools with LV students provide have appropriate arrangements to support the learnings of such students. These facilities include; braille's, tactile diagrams, large-print materials, audiobooks, among others.
  2. Policymakers should scout for donor support towards buying assistive items, which may be too expensive for some learners. The government has waived taxes on materials and equipment for persons with disabilities currently. However, equipment is still expensive for some parents and stakeholders. Educators should also establish endowment funds to assist those students who are needy directly.
  3. Policymakers should ensure that all teachers handling learners with LV have basic training in Special Needs Education. Braille proficiency training is mandatory for teachers to assist learners who cannot benefit from large print. The training will assist the teachers in identifying learners with LV for early intervention.
1. Many areas of relevance to this study remained uncovered since these areas were not targeted by the researcher in this study. Therefore, it is suggested that future researchers can explore those areas, or they can deepen what has been investigated here in the current study.
  2. The students with low vision should be allowed to take the examination in four modes, i.e., through an audio recording, Braille, writer, and computer. All the allied material, textbooks, lecture notes, prospectus, and other documents Should be provided both in Braille and soft form. If students are provided with these facilities in taking the examination, students' experiences can be researched using qualitative methods.
  3. Based on the findings of this study, future research might be developed to explore teachers' concrete and practical strategies and guidelines for dealing with students with low vision, especially in relation to exam preparation.
  4. This study was conducted in two special education institutes and one government university. This implies that further researchers need to work on a larger sample and population in different schools.

### **Suggestions for Future Research**

In light of the study's findings and limitations, several avenues for future research studies are suggested below:



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