OPEN ACCESS

Kashf Journal of Multidisciplinary Research
Vol: 02 - Issue 3 (2025)
P-ISSN: 3007-1992 E-ISSN: 3007-200X
https://kjmr.com.pk

Empowering Youth Minds: Enhancing Educational Strategies for Students with Dyslexia at Higher Education

Mehwish Zahra
Elementary & Secondary Education Department, Khyber Pakhtunkhwa, Pakistan
Shoukat Ullah*
Department of Computer Science, Higher Education, Archives and Libraries Department, Khyber Pakhtunkhwa, Pakistan
Dr. Amanullah
Department of Commerce Education and Management Sciences, Higher Education, Archives and Libraries Department, Khyber Pakhtunkhwa, Pakistan
Sarhad Ullah Khan
Department of Statistics Government Post Graduate College Bannu, Higher Education Department Khyber Pakhtunkhwa, Pakistan
****Corresponding author: Shoukat Ullah (**shoukatscholar@yahoo.com***)*

Article Info

Abstract

This study examines the impact of natural settings on the academic performance and learning experiences of dyslexic students at higher education in Pakistan. It explores whether exposure to nature enhances focus, engagement, and overall learning outcomes. This research gathers data from parents, teachers, and educational administrators regarding the implementation of nature-based educational programs. A structured questionnaire and the Kruskal-Wallis H test analyzed statistical data to determine present dyslexia support system deficiencies and potential intervention solutions. The research findings reveal that all stakeholders endorse student-specific dyslexia support, yet institutions and teachers lack ample resources and qualified professionals, and there is insufficient awareness regarding dyslexia. Educational institutions lack proper tools and training solutions despite parent and teacher agreement about specialized intervention benefits for dyslexic students. Stakeholders shared similar challenges based on the Kruskal-Wallis test results, although they disagreed on implementing solutions.

Keywords:

Dyslexia, Higher Education, Inclusive Education

Introduction

Background of the study

Dyslexia is one of the most common learning difficulties that make students face challenges in reading, writing, and spelling despite their usual intellectual abilities. Students with Dyslexia attending higher education institutions need early intervention and specialized teaching methods which enable them to excel academically along with social development. Dyslexic students in higher education institutions (HEIs) in Pakistan suffer from the lack of necessary support services because learning disabilities remain largely unknown in these institutions. When HEIs apply inclusive approaches alongside assistive tools under trained educational staff, there is a substantial impact on student learning achievement and enhanced opportunities for development for every student. Without proper corrective measures, dyslexic students cannot improve their academic achievements, thus losing interest in further education.

Dyslexic student requirements receive little attention from HEIs throughout Pakistan, which results in administrative deficiencies. Standardized evaluation methods and educational methods function only through rote memorization but cannot offer support for students with learning difficulties. Most faculty staff lacks appropriate training to discover dyslexic students and help them with suitable accommodations. Students' educational progress dwindles because of unconcerned educational practices that diminish their self-confidence, leading them to abandon academic activities. The absence of intervention from local agencies would subject dyslexic students to major limitations, which halts their career progression and strengthens disability stereotypes across communities.

Higher education institutions must build superior structured support platforms that enable dyslexic students to access vital academic resources. They should develop distinct teacher training that instructs inclusive teaching methods and different educational approaches, including multi-component learning methods and speech-to-text technology solutions. Resource centres must create an assistive tool program and flexible assessment methods to help dyslexic students effectively cope with their learning barriers. HEIs must launch awareness programs against discrimination and help-seeking programs that encourage students to request support without facing discrimination from their classmates. They can build inclusive learning areas for dyslexic students by implementing proposed solutions.

The research examined current teaching approaches developed precisely for dyslexic students studying at HEIs in Pakistan. The study evaluated how environments based on nature affect learning progress, student activity levels, and psychological development of dyslexic students. Studies demonstrate that contact with nature leads students to achieve better concentration along with minimal stress while creating classrooms that seem friendly through active learning. A basic education curriculum which includes these components offers schools a chance to develop teaching methods that better support dyslexic students both intellectually and effectively. Understandable and lasting interventions require determining the perspective of key stakeholders, including educators, parents, and school administrators. This research evaluates stakeholder opinions about nature-based teaching to identify obstacles and assistance opportunities while seeking policy adjustments.

Problem statement

Dyslexia is a substantial educational challenge in HEIs because it hinders students from conducting effective reading and writing within traditional academic environments. HEIs in Pakistan fail to establish distinctive strategies for supporting students who have dyslexia, although international progress in dyslexia interventions exists. The study identified inadequate trainer preparation as a primary issue

because of suitable educational assets and administrative staff is not adequately informed about the condition. The low percentage of nature-based interventions comes from institutional limitations and policy barriers.

Objectives of the study

The main objectives of this study are following:

1. To evaluate nature-based educational settings to improve academic achievement among higher education students with dyslexia.

2. To know stakeholder opinions about implementing nature-based approaches to help dyslexic students will be assessed among parents, teachers, and administrators.

3. Existing institutional resources for dyslexic students need evaluation because educators need training, and there is a lack of available resources.

Research questions

1. How do natural learning environments influence the academic performance and engagement of dyslexic students?

2. What are the perspectives of parents, teachers, and administrators regarding the implementation of nature-based interventions for dyslexia?

3. What challenges exist in providing adequate institutional support for dyslexic students in higher education?

Hypothesis of the research study

H_0: All key stakeholders, including parents, administrators, and teachers show equivalent perspectives about implementing nature-based dyslexia interventions.

H_1: All key stakeholders, including parents, administrators, and teachers do not show equivalent perspectives about implementing nature-based dyslexia interventions.

Significance of the study

The research evaluates the effects of natural settings on academic performance to create new teaching methods for dyslexic students in KPK Pakistan. According to statistical data, nature-based educational interventions help students participate more inclusively and achieve fairness in their learning activities. The study demonstrates to educational staff and administrators which sustainable practices to adopt by analyzing stakeholder input. This research contributes to universal discussions about the education of neurodiverse children through an approach to inclusive instruction, which teachers can apply across KPK and the broader population of dyslexic students. The research aims to develop research-backed inclusive educational policies to support dyslexic students at Pakistani higher educational institutions while providing leadership for other locations through active problem-solving efforts. The study provides critical findings that show how to develop an educational system focused on equality, student development potential, and universal access to learning for all students to thrive. The study also has explored unique teaching strategies designed for dyslexic students enrolled in higher education institutions of KPK

province in Pakistan. This initiative works to improve performance and well-being through creative educational methods, possibly leading to future regional policy transformations.

Review of related literature

Dyslexia affects students in higher education because it is a specific learning disability that impairs reading and writing and makes spelling challenging. Most dyslexic students learn adaptive skills during their early years of education but these skills might fail to protect them from previously unnoticed educational hurdles in university. The identification of these students enables educators to provide them with adequate support through different kinds of technological assistance, modified assessment procedures, and customized instruction. When dyslexic students lack proper intervention, their potential and intelligence do not guarantee academic success. University classes benefit from inclusive learning when faculty members maintain awareness and the institution provides necessary support which helps create equal learning opportunities for all students. High education institutions need to perform extensive testing with both cognitive tests and literacy evaluations to discover learners with dyslexia. Timely identification allows for proper interventions that feature assistive technology coupled with extended testing durations to produce better academic results. Dyslexic students need faculty members who possess an understanding of dyslexia along with appropriate inclusive teaching approaches to reach their educational potential[1]. The number of students with learning disabilities in post-secondary institutions has increased significantly, with dyslexia being the most common. In author[2] analyzes the educational coping methods of 30 students enrolled at two-year institutions. The students' dyslexic traits did not prevent their success because they learned compensatory techniques instead of managing phonological difficulties. Internal resources, along with adaptive skills, significantly contributed to the success of their learning processes. According to the latest research findings, higher education requires specific strategies to properly assist students who have dyslexia.

Existing research about dyslexia in higher education institutions disclosed student difficulties which included problems with reading interpretation along with note organization and timing issues. Dyslexia identification should occur early while specific support measures such as technology aids and organized interventions are required. Research indicates that dyslexic students benefit from academic outcomes when institutions implement better awareness about dyslexia and teach their faculty about supporting such students. Research proves that educational policies that welcome diversity along with nontraditional evaluation approaches boost students' educational achievements and total achievement rates. The authors[3] systematically reviews research on the inclusion of dyslexic students in higher education, highlighting gaps in evidence and exploring key themes like coping strategies, academic interactions, accessibility, and assistive technologies. The findings emphasize the need for improved support, accommodations, and further research to enhance inclusive learning experiences. In[4] author examines the implementation of inclusive policies for students with dyslexia in higher education, using Fuller’s stage model to assess institutional progress. Findings reveal both inclusive practices and systemic gaps, highlighting the need for stronger links between policy, management, and teaching staff. Addressing inconsistencies can help eliminate exclusionary practices and promote a fully inclusive learning environment. Authors[5] explore how dyslexia influences degree choices, particularly in the visual and creative arts, where dyslexic students are overrepresented. Findings from interviews with 13 arts students reveal that many actively pursued art due to passion and talent, while others felt academically limited by past experiences. Three key themes emerged: the influence of school and family, dyslexia as strength, and a passion for art. Overall, higher education in the arts helped students develop a positive personal identity and achieve their potential.

In this study authors[6] highlight the critical role of university teachers' beliefs, knowledge, and practices in shaping the experiences of dyslexic students, emphasizing the need for institutional support and training. Teachers generally have positive attitudes toward dyslexic students but recognize dyslexia as a "gray area" and feel unprepared to fully support them. Practical training can enhance teachers' self-efficacy, improving inclusivity and overall well-being for both educators and students. In this[7] review examines the challenges dyslexic students face in higher education, particularly in reading, writing, and time management. It emphasizes the need for educator support, inclusive practices, and institutional awareness to enhance academic success. The study provides insights for policymakers and educators to foster a more inclusive learning environment. In[8] authors explore how dyslexic university students develop coping strategies to overcome writing challenges in both their first language (French) and second language (English). It provides valuable insights into the complex writing processes of compensated dyslexics, highlighting successful and ineffective strategies. By using innovative methods like screen casting and keystroke logging, the study offers a detailed analysis of how dyslexic students navigate academic writing. The findings emphasize the need for strategic support, better tool familiarity, and tailored interventions to enhance writing outcomes for dyslexic learners in higher education.

Research Methodology

Researchers conducted a study to determine effective educational methods that help dyslexic students succeed in higher education through an organized scientific process. The research specialized in discovering existing areas of weakness between typical instructional approaches alongside different intervention approaches assessment results. The research instruments underwent expert evaluations to achieve validity and reliability standards. The researchers protected respondent confidentiality and ensured free and voluntary participation as their primary ethical concerns. The research design allowed investigators to understand dyslexia difficulties faced by students alongside potential solution approaches in higher education settings—the defined methodology served as a basis for generating significant insights and developing applicable future works.

Research Design

Research methods in this study combined descriptive and co-relational designs to evaluate student dyslexic experiences in HEIs. The descriptive approach described current educational conditions, teaching practices, and support services for students with dyslexia. The research design used the descriptive approach to reveal current teaching methods, while the co-relational approach examined systematic relationships such as teaching interventions and student academic success rates. This research used both quantitative and qualitative experimental interventions alongside each other to conduct a detailed analysis. The research used quantitative data to measure the effects of educational strategy and qualitative data to document student dyslexic experiences and their challenges. The research design combination allowed researchers to understand better which teaching approaches result in improved academic outcomes. The research examined how well teaching staff understood dyslexia and how educational institutions handled this learning disability. The study validated its findings by combining findings from both research designs to establish result accuracy.

Population of the Study

The research obtained multiple viewpoints about learning support systems from parents, teachers, and educational administrators with dyslexia students. This study gathered information about home-based support systems and family challenges from parents who had dyslexic children. The survey measured teacher knowledge regarding dyslexic students through assessments of their training levels and classroom

teaching practices. Through their research, educational administrators assessed the institutional policies that impact learning disabilities with department heads and policymakers. The research included diverse participants to grasp all aspects of academic support and obstacles affecting dyslexic school students. The research initiative has identified current teaching deficiencies through stakeholder inclusion so it can propose evidence-based teaching improvements. Research results became fundamental for developing new policies and strategies that support dyslexic students studying at HEIs.

Sample of the Study

Representative sampling required implementing a random sampling technique for selecting participants from multiple HEIs. Each stakeholder category included 50 participants selected from the groups of parents, teachers, and administrators. The well distributed sample achieved a balance between different perspectives through the random selection process. Random sampling techniques helped decrease selection bias and make the research findings more dependable. The number of participants served the requirements of statistical significance tests and practical collection and analysis methods. The established sampling approach produced precise data collection of the educational challenges and practical solutions for dyslexic students.

Instruments of the study

The researchers developed this questionnaire through an extensive literature review and expert consensus to guarantee its applicability and precision. The instrument evaluated various aspects, including academic achievements and educational techniques, institutional backing, and different teaching approaches for students affected by dyslexia. The research distributed its questionnaire independently to parents, teachers, and academic administrators through 40 separate responses in each category. The questionnaire used Likert-scale questions, enabling quantitative evaluation of participant answers to create objective systemized data analysis. The instrument evaluated three essential domains, including teachers' inclusive education preparedness alongside institutional dyslexia policy aspects and alternative treatment beliefs. The instrument's validation process allowed researchers to collect data about educational difficulties systematically and suggested enhancements for dyslexic students.

Data Analysis

The data acquired through questionnaire assessments underwent inferential statistical analyses with descriptive statistics for generating significant findings. Frequency distributions and means and standard deviations served as descriptive statistics to present respondent data while showing emerging patterns. Inferential statistics allowed researchers to apply correlation analysis. Researchers used current research literature as a basis to interpret the findings while identifying patterns which directed suggestions for all-inclusive educational methods.

Data Analysis and interpretations

A structured questionnaire was designed for parents, teachers, and administrators that can easily be analyzed using the Kruskal-Wallis H Test for comparison between the three groups[9]. This questionnaire was focused on understanding the effectiveness of educational strategies for students with dyslexia.

Table 1 shows parents responses regarding dyslexia in students at higher education

Questions	S.D.A	D.A	N	A	S.A
I believe that students with dyslexia should receive individualized educational support.	9 18%	11 22%	10 20%	9 18%	11 22%
Schools provide adequate resources to support students with dyslexia.	11 22%	12 24%	10 20%	8 16%	9 18%
I have observed a positive change in students with dyslexia when they receive additional support	6 12%	6 12%	10 20%	14 28%	14 28%
Teachers are well-trained in supporting students with dyslexia.	16 32%	15 30%	8 16%	6 12%	5 10%
There is effective communication between parents and teachers regarding dyslexia-related educational strategies.	12 24%	13 26%	11 22%	7 14%	7 14%
The current curriculum accommodates the learning needs of students with dyslexia	14 28%	15 30%	9 18%	5 10%	7 14%
I believe that dyslexia is taken seriously by the educational system.	14 28%	14 28%	9 18%	5 10%	8 16%
Teachers and staff are knowledgeable about dyslexia and its impact on learning.	7 14%	10 20%	9 18%	13 26%	11 22%
There is sufficient collaboration between educators and special education professionals to support children with dyslexia.	8 16%	11 22%	12 24%	9 18%	10 20%

There is enough awareness among parents about the importance of early detection and intervention for dyslexia	10 20%	11 22%	14 28%	9 18%	6 12%
The school provides adequate tools (e.g., technology, specialized materials) for students with dyslexia.	10 20%	13 26%	10 20%	9 18%	8 16%
I believe that the involvement of educational psychologists in assessing dyslexia is crucial.	6 12%	8 16%	10 20%	13 26%	13 26%
The school provides enough professional development opportunities for teachers to learn about dyslexia.	13 26%	11 22%	15 30%	6 12%	5 10%
Parents are encouraged to participate in dyslexia-related workshops and seminars.	8 16%	8 16%	9 18%	15 30%	10 20%
There are adequate support staffs (e.g., special education assistants) to help students with dyslexia.	8 16%	8 16%	17 34%	10 20%	7 14%
I have received training or information on how to support students with dyslexia	8 16%	13 26%	12 24%	9 18%	8 16%
The school regularly updates parents on the progress of students with dyslexia.	7 14%	9 18%	12 24%	14 28%	8 16%
There is a clear plan for the ongoing support of students with dyslexia throughout their education.	14 28%	15 30%	8 16%	7 14%	6 12%
I feel confident in identifying early signs of dyslexia in children.	7 14%	14 28%	15 30%	9 18%	5 10%

The education system should provide more attention to the specific needs of students with dyslexia.	**6** **12%**	**6** **12%**	**7** **14%**	**15** **30%**	**16** **32%**

Table 1 indicates 40% parents strongly agreed that dyslexic students should need tailored support, 34% parents strongly agreed that schools provide dyslexia support resources, 56% parents strongly agreed that dyslexic students thrive with extra support, 62% parents strongly disagreed that teachers are well trained to support dyslexic students, 50% parents strongly disagreed that parents and teachers collaborate on dyslexia, 58% parents strongly disagreed that curriculum meets dyslexic students needs, 56% parents strongly disagreed that educational system takes dyslexia seriously, 48%parents strongly agreed that teachers are knowledgeable about dyslexia impacts, 38% parents strongly agreed that educators collaborate to support dyslexic students while 38% strongly disagreed, 42% parents strongly disagreed that parents are aware of dyslexia importance, 46% parents strongly disagreed that schools provide necessary tools for dyslexia, 52% parents strongly agreed that psychologists play a crucial role in evaluating dyslexia, 48% parents strongly disagreed that teachers receive adequate dyslexia training, 50% parents agreed that parents are encouraged to attend dyslexia workshops and seminars, 34% parents strongly agreed that staff support for dyslexia is sufficient while 32% strongly disagreed, 42% parents strongly disagreed that i have received dyslexia support training, 44% parents strongly agreed that schools update parents on students dyslexia progress, 58% parents strongly disagreed that dyslexia support plan is well established, 42% parents strongly disagreed that they feel confident to recognize early dyslexia warning signs, and 62% parents strongly agreed that dyslexic students need more system support.

Table 2 shows teachers responses regarding dyslexia in students at higher education

Questions	S.D.A	D.A	N	A	S.A
I believe that students with dyslexia should receive individualized educational support.	**5** **10%**	**5** **10%**	**10** **20%**	**16** **32%**	**14** **28%**
Schools provide adequate resources to support students with dyslexia.	**5** **10%**	**10** **20%**	**13** **26%**	**13** **26%**	**9** **18%**
I have observed a positive change in students with dyslexia when they receive additional support	**5** **10%**	**5** **10%**	**9** **18%**	**15** **30%**	**16** **32%**
Teachers are well-trained in supporting students with dyslexia.	**15** **30%**	**16** **32%**	**11** **22%**	**4** **8%**	**4** **8%**

There is effective communication between parents and teachers regarding dyslexia-related educational strategies.	5 10%	12 24%	13 26%	14 28%	6 12%
The current curriculum accommodates the learning needs of students with dyslexia	5 10%	17 34%	14 28%	12 24%	2 4%
I believe that dyslexia is taken seriously by the educational system.	11 22%	13 26%	11 22%	10 20%	5 10%
Teachers and staff are knowledgeable about dyslexia and its impact on learning.	7 14%	16 32%	13 26%	10 20%	4 8%
There is sufficient collaboration between educators and special education professionals to support students with dyslexia.	13 26%	15 30%	13 26%	6 12%	3 6%
There is enough awareness among parents about the importance of early detection and intervention for dyslexia	16 32%	18 36%	11 22%	3 6%	2 4%
The school provides adequate tools (e.g., technology, specialized materials) for students with dyslexia.	13 26%	14 28%	11 22%	7 14%	5 10%
I believe that the involvement of educational psychologists in assessing dyslexia is crucial.	4 8%	5 10%	10 20%	16 32%	15 30%
The school provides enough professional development opportunities for teachers to learn about dyslexia.	15 30%	19 38%	9 18%	5 10%	2 4%
Parents are encouraged to participate in dyslexia-related workshops and seminars.	4 8%	5 10%	13 26%	16 32%	12 24%

There are adequate support staffs (e.g., special education assistants) to help students with dyslexia.	**14** **28%**	**17** **34%**	**11** **22%**	**5** **10%**	**3** **6%**
I have received training or information on how to support children with dyslexia.	**17** **34%**	**16** **32%**	**11** **22%**	**4** **8%**	**2** **4%**
The school regularly updates parents on the progress of students with dyslexia.	**15** **30%**	**17** **34%**	**10** **20%**	**5** **10%**	**3** **6%**
There is a clear plan for the ongoing support of students with dyslexia throughout their education.	**17** **34%**	**16** **32%**	**10** **20%**	**4** **8%**	**3** **6%**
I feel confident in identifying early signs of dyslexia in children.	**14** **28%**	**17** **34%**	**9** **18%**	**6** **12%**	**4** **8%**
The education system should provide more attention to the specific needs of students with dyslexia.	**1** **2%**	**5** **10%**	**13** **26%**	**16** **32%**	**15** **30%**

Table 2 indicates that 60% teachers strongly agreed that dyslexic students should need tailored support, 44% teachers strongly agreed that schools provide dyslexia support resources, 62% teachers strongly agreed that dyslexic students thrive with extra support, 62% teachers strongly disagreed that teachers are well trained to support dyslexic students, 40% teachers strongly agreed that parents and teachers collaborate on dyslexia, 44% teachers strongly disagreed that curriculum meets dyslexic students needs, 48% teachers strongly disagreed that educational system takes dyslexia seriously, 46% teachers strongly disagreed that teachers are knowledgeable about dyslexia impacts, 56% teachers strongly disagreed that educators collaborate to support dyslexic students while 38% strongly disagreed, 68% teachers strongly disagreed that parents are aware of dyslexia importance, 54% teachers strongly disagreed that schools provide necessary tools for dyslexia, 62% teachers strongly agreed that psychologists play a crucial role in evaluating dyslexia, 68% teachers strongly disagreed that teachers receive adequate dyslexia training, 56% teachers agreed that parents are encouraged to attend dyslexia workshops and seminars, 62% teachers strongly agreed that staff support for dyslexia is sufficient while 32% strongly disagreed, 66% teachers strongly disagreed that i have received dyslexia support training, 64% teachers strongly disagreed that schools update parents on students dyslexia progress, 66% teachers strongly disagreed that dyslexia support plan is well established, 62% teachers strongly agreed that they feel confident to recognize early dyslexia warning signs, and 62% teachers strongly agreed that dyslexic students need more system support.

Table 3 shows administrators responses regarding dyslexia in students at higher education

Questions	S.D.A	D.A	N	A	S.A
I believe that students with dyslexia should receive individualized educational support.	9 18%	10 20%	6 12%	14 28%	11 22%
Schools provide adequate resources to support students with dyslexia.	10 20%	11 22%	10 20%	10 20%	9 18%
I have observed a positive change in students with dyslexia when they receive additional support	10 20%	12 24%	9 18%	12 24%	7 14%
Teachers are well-trained in supporting students with dyslexia.	8 16%	9 18%	8 16%	13 26%	12 24%
There is effective communication between parents and teachers regarding dyslexia-related educational strategies.	7 14%	9 18%	9 18%	14 28%	11 22%
The current curriculum accommodates the learning needs of students with dyslexia	7 14%	10 20%	15 30%	11 22%	7 14%
I believe that dyslexia is taken seriously by the educational system.	6 12%	8 16%	12 24%	13 26%	11 22%
Teachers and staff are knowledgeable about dyslexia and its impact on learning.	7 14%	13 26%	10 20%	11 22%	9 18%
There is sufficient collaboration between educators and special education professionals to support students with dyslexia.	6 12%	7 14%	10 20%	15 30%	12 24%

There is enough awareness among parents about the importance of early detection and intervention for dyslexia.	15 30%	15 30%	7 14%	7 14%	6 12%
The school provides adequate tools (e.g., technology, specialized materials) for students with dyslexia.	5 10%	5 10%	10 20%	16 32%	14 28%
I believe that the involvement of educational psychologists in assessing dyslexia is crucial.	5 10%	5 10%	6 12%	18 36%	16 32%
The school provides enough professional development opportunities for teachers to learn about dyslexia.	6 12%	6 12%	9 18%	15 30%	14 28%
Parents are encouraged to participate in dyslexia-related workshops and seminars.	5 10%	6 12%	8 16%	16 32%	15 30%
There are adequate support staffs (e.g., special education assistants) to help students with dyslexia.	5 10%	7 14%	8 16%	16 32%	14 28%
I have received training or information on how to support children with dyslexia.	5 10%	5 10%	9 18%	16 32%	15 30%
The school regularly updates parents on the progress of students with dyslexia.	3 6%	7 14%	6 12%	17 34%	17 34%
There is a clear plan for the ongoing support of students with dyslexia throughout their education.	5 10%	5 10%	8 16%	15 30%	17 34%
I feel confident in identifying early signs of dyslexia in children.	6 12%	9 18%	10 20%	13 26%	12 24%

The education system should provide more attention to the specific needs of students with dyslexia.	**6** **12%**	**8** **16%**	**8** **16%**	**15** **30%**	**13** **26%**

Table 3 indicates that 50% administrators strongly agreed that dyslexic students should need tailored support, 42% administrators strongly disagreed that schools provide dyslexia support resources, 44% administrators strongly disagreed that dyslexic students thrive with extra support, 50% administrators strongly agreed that teachers are well trained to support dyslexic students, 50% administrators strongly agreed that parents and teachers collaborate on dyslexia, 36% administrators strongly agreed that curriculum meets dyslexic students needs, 48% administrators strongly agreed that educational system takes dyslexia seriously, 40% administrators strongly agreed that teachers are knowledgeable about dyslexia impacts while 40% strongly disagreed, 54% administrators strongly agreed that educators collaborate to support dyslexic students while 38% strongly disagreed, 60% administrators strongly disagreed that parents are aware of dyslexia importance, 60% administrators strongly agreed that schools provide necessary tools for dyslexia, 68% administrators strongly agreed that psychologists play a crucial role in evaluating dyslexia, 58% administrators strongly agreed that teachers receive adequate dyslexia training, 62% administrators strongly agreed that parents are encouraged to attend dyslexia workshops and seminars, 60% administrators strongly agreed that staff support for dyslexia is sufficient while 32% strongly disagreed, 62% administrators strongly agreed that I have received dyslexia support training, 68% administrators strongly agreed that schools update parents on students dyslexia progress, 64% administrators strongly agreed that dyslexia support plan is well established, 50% administrators strongly agreed that they feel confident to recognize early dyslexia warning signs, and 56% administrators strongly agreed that dyslexic students need more system support.

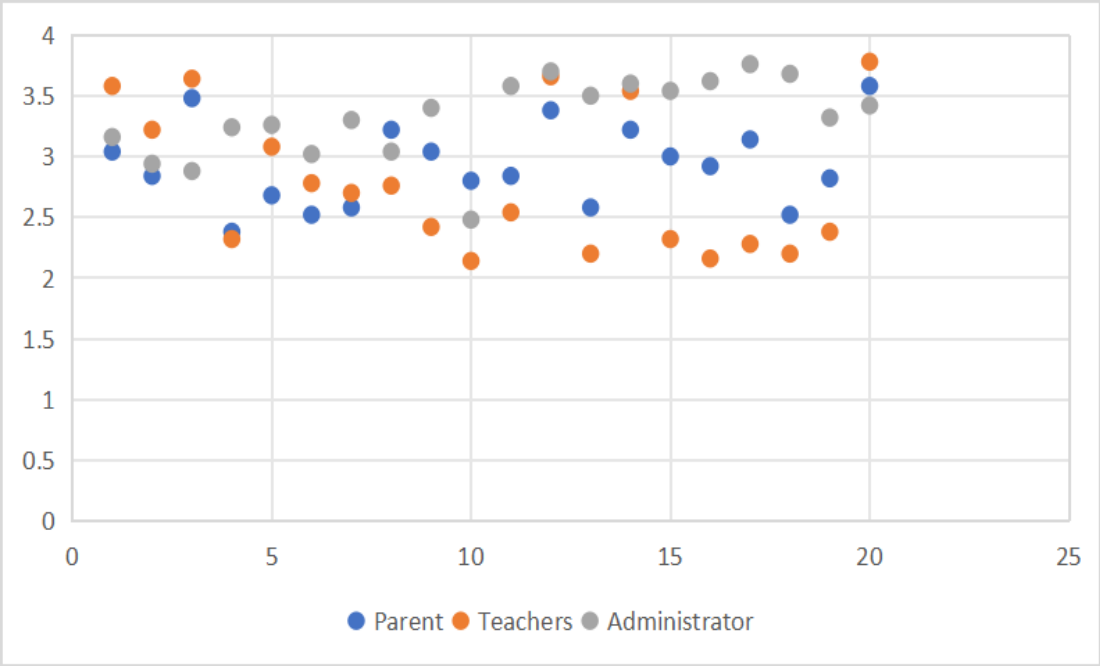


Figure 1 shows parents, teachers, and administrators' responses

Kruskal-Wallis-Test

The Kruskal-Wallis H test indicated that there is a non-significant difference in the dependent variable between the different groups, $\chi 2(19) = 22.05$, $p = 0.282$, with a mean rank score of 39 for Q2, 29.17 for Q3, 42 for Q4, 18 for Q5, 30 for Q6, 20.5 for Q7, 24.83 for Q8, 29 for Q9, 28.33 for Q10, 11 for Q11, 29.5 for Q12, 52.33 for Q13, 22 for Q14, 46.17 for Q15, 27.67 for Q16, 27.33 for Q17, 32.67 for Q18, 24.33 for Q19, 24.17 for Q20.

Hypothesis

Since the p-value > α, H0 cannot be rejected. All key stakeholders, including parents, administrators, and teachers show equivalent perspectives about implementing nature-based dyslexia interventions. In other words, the difference between the mean ranks of all groups is not big enough to be statistically significant. A non-significance result cannot prove that H0 is correct; only the null assumption cannot be rejected. When selecting a value from each group, there is an equal probability of any group containing the highest value.

P-value

The p-value equals 0.2818 ($P(x \leq 22.0504) = 0.7182$). This means that the chance of a type I error rejecting a correct H0 is too high: 0.2818 (28.18%). The more significant the p-value, the more it supports H0.

Test statistic

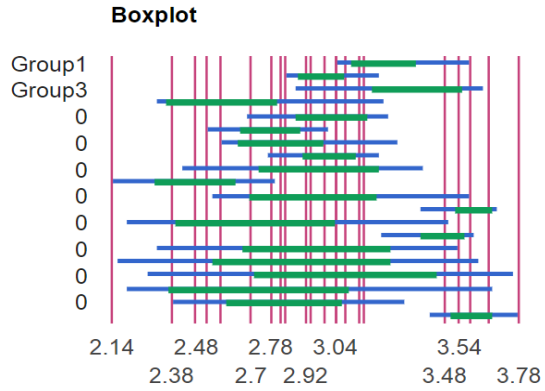
The test statistic H equals 22.0504, in the 95% acceptance region: [0, 30.1435].

Effect size

The observed effect size η2 is medium, 0.076. This indicates that the magnitude of the difference between the average is medium.

Multiple comparisons

There is no significant difference between the mean ranks of any pair.



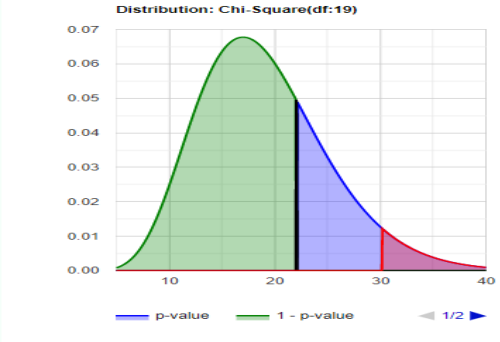


Figure 2 shows comparison of the groups

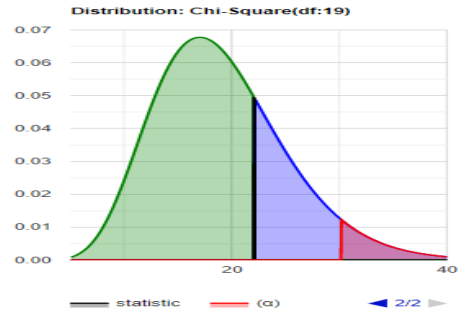


Figure 3 Significance level (α), and p-value

Conclusion

This study highlights the urgent need for enhanced support systems for dyslexic students in higher education. While nature-based learning environments are perceived as beneficial, institutional shortcomings such as inadequate teacher training, lack of specialized learning materials, and minimal policy support—hinder their effectiveness. The Kruskal-Wallis H test results suggest that stakeholders share similar views on these challenges but do not propose distinct solutions. This calls for comprehensive policy interventions, including increased investment in educator training, resource development, and structured frameworks for implementing inclusive educational strategies. Future research should explore longitudinal studies on the impact of nature-based interventions and the development of standardized dyslexia support programs tailored to higher education institutions in Pakistan.

Future Work

Healthcare technology employs sophisticated diagnosis and predictive analytics while delivering customized treatments through AI advancements. This technology extends its applications from healthcare to aid the finance industry by finding fraud, educating individuals, and producing benefits from optimized processes. It also provides crop monitoring capabilities for agricultural yield predictions[10]. The authors in[11] suggested that enhancing mobile technology integration for dyslexic students by developing adaptive AI-driven tools, improving accessibility features, and expanding teacher training. Further research should explore personalized learning strategies and curriculum adaptations to maximize student support.

Future work may focus on AI-driven interventions for dyslexic students in HEIs, particularly in resource constrained regions in Pakistan. New AI tools require development by researchers and policy makers who want to serve Urdu or Pashto speaking students because current assistive technologies primarily support English speaking users. Change-based educational tool assessments regarding how students behave with them while following educational success and interface usability must be included in future research. The wide-scale deployment of AI-powered assistive technology requires academic organizations to work together with technology companies and government agencies to build a permanent structure for classroom implementation across the nation.

Research may focus on faculty skill development and teaching material transformation to employ AI-based solutions for dyslexic students. Educators may receive specific professional training programs about using AI tools successfully because this training will influence large-scale implementation. Universities need to carefully evaluate the application of AI-based accommodations in assessments as part of their assessment redesign efforts. Research needs to examine both the psychological effects and emotional impact that AI-based educational tools deliver on dyslexic students to verify their effectiveness in performance enhancement, confidence building, and anxiety reduction.

The closing need for research examines how to make AI-learning resources equally accessible to all students irrespective of their digital capabilities. Students in rural areas and many others do not have access to the required infrastructure, which consists of fast internet and artificial intelligence-assisted equipment. National legislation should support private-public collaborations and government programs across schools by creating cost reduced assistive devices and lab opportunities with AI integration and inclusive training. When these gaps receive attention through future work, it will establish an equitable educational setting that permits dyslexic students in HEIs to excel academically and socially.

REFERENCES

W. Tops, et al., "Identifying students with dyslexia in higher education," Annals of dyslexia, vol. 62, pp. 186-203, 2012.

G. Richardson, "Dyslexia in Higher Education," Educational Research and Reviews, vol. 16, pp. 125-135, 2021.

M. Pino and L. Mortari, "The inclusion of students with dyslexia in higher education: A systematic review using narrative synthesis," Dyslexia, vol. 20, pp. 346-369, 2014.

T. Mortimore, "Dyslexia in higher education: Creating a fully inclusive institution," Journal of Research in Special Educational Needs, vol. 13, pp. 38-47, 2013.

A. M. Bacon and S. Bennett, "Dyslexia in higher education: The decision to study art," European Journal of Special Needs Education, vol. 28, pp. 19-32, 2013.

K. Černickaja and L. Sokolová, "Dyslexia in higher education–teacher's perspective: scoping review," in Frontiers in Education, 2024, p. 1372699.

R. Sarkar, "Navigating Dyslexia: Hurdles Faced by Students with Dyslexia in Higher Education," Journal of Disability Studies, vol. 10, pp. 1-3, 2024.

L. Radar and G. Gilquin, "Compensated Dyslexics in Higher Education: Examining Coping Strategies in Writing," in The 10th Biennial International Conference on the Linguistics of Contemporary English (BICLCE), 2024.

E. Ostertagova, et al., "Methodology and application of the Kruskal-Wallis test," Applied mechanics and materials, vol. 611, pp. 115-120, 2014.

S. Ullah, et al., "EVOLUTION OF SENTIMENT ANALYSIS IN REVIEWS FOR INTELLIGENT PRODUCT RECOMMENDATIONS," Kashf Journal of Multidisciplinary Research, vol. 2, pp. 142-166, 2025.

G. Reid, et al., "Expanding horizons for students with dyslexia in the 21st century: Universal design and mobile technology," Journal of Research in Special Educational Needs, vol. 13, pp. 175-181, 2013.