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Examining Postgraduate Students' Challenges with Stimuli-Based Exam Questions

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Abstract

The research endeavors to explore postgraduates' perceptions of attempts at stimulus-based questions in an exam. The intended goal of the study is to identify problem areas, issues, and related factors that prompt interventions for effective answering of these question types in student results. This qualitative research is interpretive in nature with a phenomenological approach. The data gathering process involved semi-structured interviews with eight postgraduate students from a private university in Karachi, selected through purposive sampling. All of them consented to be interviewed. Results indicated that this stimulus-based question can hamper academic performance in students, particularly those with no earlier experience with such assessment techniques. The validity and challenge of the questions also further challenge a host of students, provoking nerves that compromise achievement. Participants asserted that the ambiguous nature of examination questions led to greater anxiety and difficulty managing stress during the exam. The main result of the present study is to reinforce the importance of children, from an early age, developing their critical thinking and problem-solving skills and preparing for this apperceptive character test. The study provides recommendations from stakeholders, including educationalists and heads of institutions, on how to assist students in protecting themselves against examination-driven psychological stress in the future.

Keywords: Postgraduate, stimuli-based questions, examination.

Introduction

Pakistan's Educational system has been following traditional teaching methodologies focused on memorization of concepts, which leads students to be unable to develop their critical thinking skills. Critical thinking skills enhance students' discussion-making and problem-solving skills, which train them to respond quickly and appropriately. Stimuli-

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based exam questions are one of the assessment types that require critical thinking skills of students, where student requires multiple functioning of cognitive processes like understanding of the questions, generalizing information, organizing information, synthesizing and analytical reasoning at the same time to respond to the question. Students who learns in traditional teaching practices from early years to graduation often struggle in higher education, where they have to think critically and independently. This emphasizes that how important it is to modify and apply teaching practices that develop individuals' critical thinking and problem-solving skills to rescue them from future academic pressures. Research highlights the importance of critical thinking as a key factor in enhancing students' cognitive abilities, demonstrating a link between CT skills and academic success among intermediate students.[1]

Postgraduate students often struggle with stimuli-based questions, but these challenges are seldom properly addressed. Even at the graduate level, students find it difficult to share their problems with their teachers, which may stem from earlier experiences of neglect. Not accustomed to stimuli-based questions, students in higher education struggle with this kind of query. Research conducted on university-level students illustrated the importance of diverse teaching methods in enhancing students' critical thinking and response capabilities.[2]

Graduate students must understand, cope with, and evaluate assignments and tests. The standards for postgraduate students are far higher because they have extensive expertise in learning, unlike primary and secondary school students, who are more like 'blank slates'. Postgraduate education, considered the highest form of education after sixteen years of study, is designed for the most developed critical and creative thinkers who can integrate into society as members of a mature intellectual community. These students are expected to contribute to society's betterment. In addition to acting as community advocates or stewards, they can suggest improvements to current students' learning bottlenecks.

However, despite acknowledging the capacity of higher education, Pakistani students find it difficult to respond, critique, propose

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1 Uzma Shahzadi & Itbar Khan, 'Exploring the Relationship between Critical Thinking Skills and Academic Achievement', *SJESR*, 3:1 (2020), 236-42.

2 Samina Zamir, et.al., 'Teaching Methodologies used for Learning Critical Thinking in Higher Education: Pakistani Teachers' Perceptions', *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 12:5 (2021), 1.

new ideas, and create intellectual breakthroughs. This is due to rigid traditional curricula, teaching practices, and pedagogies that cause stress and anxiety when dealing with stimulus-based questions at higher education levels. At the primary and secondary levels, students are taught to be rote learners without an environment for self-exploration, self-learning, and creative assignments. Traditional teaching strategies, such as one-way lectures and syllabus covering, fail to incorporate a learning-centered curriculum where students can participate and explore different ideas.

Stimuli-based questions, supported by stimuli such as text, audio, video, or images, test students' critical thinking during exams. Higher education students, as advanced academic professionals, are expected to focus on specialized knowledge and research. They are supposed to delve deeply into understanding and properly sequence their responses to stimulus-based questions. These questions require higher standards of critical thinking in terms of comprehension, problem-solving, and handling difficulties.

Examination predicaments are significant anxiety and stress drivers among students at all educational levels. This paper addresses students' perceptions of these problems, their impact on examination performance and grading, and the challenges they face in responding to questions. It will suggest strategies and areas of improvement to help students overcome these challenges and perform better in task-oriented examination platforms. Students' psychological states during exams play a vital role in responding to questions, especially those requiring critique, evaluation, execution, and suggestions. Classroom practices, teaching pedagogy, learning styles, and mental development are essential for preparing students to deal with such questions.

Research Questions

1. What specific challenges do postgraduate students face when responding to stimulus-based questions in exams, including text-based, audio-based, video-based, and image-based stimuli?
2. What strategies can be implemented by educators and institutions to alleviate examination anxiety related explicitly to attempting stimulus-based questions among postgraduate students?

Literature review

This research paper is grounded in Freire's critical pedagogy, which emphasizes creating an environment that encourages students to explore and develop rational reasoning and promotes independent engagement. This approach views education not just as a means of knowledge

transmission but as a foundation for societal stability, cultural preservation, shaping future directions, and fostering ethical practices. Within a school context, critical pedagogy underscores that education is more than a process; it plays a vital role in shaping students' experiences and influencing societal and cultural development. It demonstrates that education is not a neutral activity but a crucial framework for developing perspectives that empower teachers and students to participate actively in transforming the educational process and enhancing metacognitive awareness.

Freire's theory of critical pedagogy emphasizes the importance of pedagogies in teaching and learning practices that are much needed in the Pakistani context. Currently, knowledge is imposed on students primarily for memorization, and to pass exams, without providing them with opportunities to think, act, or respond based on their understanding. The banking model proposed by Freire highlights the condition of students in higher education, who are used as banking deposit accounts to store knowledge without using it, questioning it, or circulating it within the learning process. Students should be in an environment where they are free to learn, and teachers can only provide the environment and resources to enhance their learning, as Freire assigns teachers the responsibility to assess students.

On the other hand, this research study also supports the problem-based learning model where students are the center of the process, their learning needs and individuality matter as the priority, to enhance the power of student learning, provide them learner-centered environment where they have freedom to ask questions, where they are welcome to question, ready to explore, and peeks up their curiosity.

Critical thinking is the foundation for postgraduate students to pursue their higher education. Their brainstorming and idea-generation abilities generate support for their intellectual studies, which are the educational product of their respective degree programs. In Pakistan’s context, students are highly dependent on provided materials, handouts, study guides, and prepared lectures, as well as on the interdependence among them from the primary level to higher educational programs. This intricate dependence hampers their intrinsic motivation to learn by searching, thinking, questioning, and critiquing. As a result, this leads them toward learning difficulties and harms their ability to develop robust critical thinking skills.

Critical thinking often presents challenges for teachers, and researchers have conducted numerous studies on its development and obstacles. Critical thinking is the ability to reflect on one's actions with

awareness and acknowledgement.[3] Critical thinking is a skill that leads to better decision-making. Students become aware of their strategies and planning, which helps them process information effectively and encourages the use of monitoring and personal learning strategies. Critical thinking embodies the skill of interpreting data-driven information through a systematic approach based on evidence, encouraging individuals to become independent thinkers.[4] A person who thinks critically is skilled at reasoning and tends to believe and act according to their reasoning.

The teaching process should be student-centred to provide students with a foundation for learning in a free and supportive environment, where they can think and reflect based on their understanding. This approach encourages collaboration and interaction among students, which may foster critical thinking and a systematic approach. Previous research warns that in today's era, where a vast amount of knowledge is accessible with a single click, it is crucial to teach students to become critical and effective thinkers.[5] Critical thinking is often linked to other essential skills for 21st-century learning, including metacognition, motivation, and creativity.[6] Which are also important in stakeholder and family life.

In Pakistan, the literature indicates that the education system is rigid in developing critical thinking among students at early stages, such as primary school, which leads to significant barriers at higher education levels. Although critical thinking skills are crucial for students, research reveals that opportunities to cultivate these skills are often lacking in many educational settings. Several recent studies have examined the development of critical thinking in Pakistan's secondary schools,

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3 Zelaieta Anta & Igor Camino Ortiz de Barrón, 'El desarrollo del pensamiento crítico en la formación inicial del profesorado: Análisis de una estrategia pedagógica desde la visión del alumnado', *Revista de Currículumy Formación del Profesorado*, 22:1 (2018), DOI: https://doi.org/10.30827/profesorado.v22i1.9925.

4 Diane F. Halpern, *Thought and Knowledge: An Introduction to Critical Thinking*, 5th ed. (New York: Psychology Press, 2014), 8.

5 Diane F. Halpern, Teaching Critical Thinking for Transfer across Domains: Dispositions, Skills, Structure Training, and Metacognitive Monitoring, *American Psychologist*, 53:4 (1998), 449.

6 Bakadzi Moeti, et.al., 'Critical Thinking among Post-graduate Diploma in Education Students in Higher Education: Reality of Fuss?' *Journal of Education and Learning*, 6:2 (2017), 14. https://doi.org/ 10.5539/jel.v6n2

particularly within science and social studies curricula and teaching practices.[7]

The main goals of these studies included assessing teacher perspectives and observed practices related to teaching critical thinking,[8] as well as analyzing the inclusion of critical thinking concepts in educational policies and curricula.[9]

Universities across much of the Middle East and North Africa (MENA) region have traditionally focused more on students' memorization and content reproduction than on developing critical thinking skills and fostering intellectual curiosity. Critical thinking in this era is recognized as a vital 21st-century skill, and its importance has been widely acknowledged as we prepare students for future careers, citizenship, and lifelong learning.[10] As an essential subject in educational systems, science offers numerous opportunities for discovery and practical application in professional development. It inherently involves higher-order cognitive skills such as identifying problems, researching existing knowledge, analyzing experimental data, developing solutions through logical reasoning, and communicating evidence-based arguments. At the university level, critical thinking has become a key factor in student success.[11]

Key findings, such lack of critical thinking developmental strategies and their need in educational systems, emphasize the need to incorporate and update teaching strategies to instructional strategies that enhance and develop critical thinking skills among students. Although teachers and policies highlight critical thinking as a vital instructional

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7 M. Jamil, A. Mahmood & S. Masood, 'Fostering Critical Thinking in Pakistani Secondary School Science: A Teacher's Viewpoint', *Global Educational Studies Review*, 8:2 (2023), 647.

8 Dr. Muhammad Jamil, Dr. Yaar Muhammad, Dr. Naima Qureshi, Secondary School Science Teachers' Practices for the Development of Critical Thinking Skills: An Observational Study, *Journal of Development and Social Sciences*, 2:4 (2021b), 258-59.

9 Dr Muhammad Jamil & Dr Yaar Muhammad, 'Teaching Science Students to Think Critically: Understanding Secondary School Teachers' Practices', *Journal of Research & Reflections in Education (JRRE)*, 13:2 (2019), 260.

10 Richard Paul and Linda Elder, *Critical Thinking: Tools for Taking Charge of Your Learning and Your Life*, 4th ed. (Lanham, MD: Rowman & Littlefield, 2021), 170-80.

11 M.J. Bezanilla, H.G. Domínguez & M.P. Ruiz, 'Importance and Possibilities of Development of Critical Thinking in the University: The Teacher's Perspective', *REMIE - Multidisciplinary Journal of Educational Research*, 11:1 (2021), 28-30.

aim, classroom practices and curricula often fall short in fostering these skills. For instance, science lessons tended to focus on rote memorization rather than encouraging higher-order analysis,[12] while social studies textbooks provided more factual content instead of engaging students in conceptual analysis or evaluative exercises.[13]

Students taught through problem-based learning develop a more balanced approach between inductive and deductive reasoning.[14] Furthermore, teaching strategies play a crucial role in helping capable students improve their critical thinking skills. Additionally, more teachers need training to effectively deliver content and create opportunities for students to reflect on tasks, take their time, respond thoughtfully, ask questions, participate in group discussions, and share their ideas and strategies.

During exams, it was evident that students who did not participate or who were unable to identify their own areas of weakness and challenges, as well as those of their teachers, found it difficult to respond to stimulus-based questions. Another factor that surfaced during the research was that the students were not taught how to answer the exam questions. This led to poor exam and academic performance, as well as a lack of confidence and motivation among the students. In this case, the validity of the questions is called into question when students are not taught how to answer them.

Embracing the variety of distinct learning styles allows teaching pedagogies to be tailored to the learning preferences of the students. For example, some students learn best through visual aids, while others benefit from lecture-style instruction, project-based learning, or discussion-based learning. These are the elements that need to be prioritized to help students learn to the best of their abilities.

A question is only valid if students' responses genuinely reflect what we want them to demonstrate. Essentially,[15] Validity depends on

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12 Dr. Muhammad Jamil, Dr. Yaar Muhammad, Dr. Naima Qureshi, *op.cit*., 260-62.

13 H. Naseer, Dr. Y. Muhammad & Dr M. Jamil, 'Critical Thinking Skills in Pakistan Studies Textbook: Qualitative Content Analysis', *Pakistan Journal of Social Research*, 4:3 (2022), 750-52.

14 S.L. Olivares & Y. Heredia Escorza, 'Desarrollo del pensamiento crítico en ambientes de aprendizaje basado en problemas en estudiantes de educación superior', *Revista Mexicana de Investigación Educativa*, 17:54 (2012), 755.

15 A. Ahmed & A. Pollitt, 'Improving the Validity of Contextualized Questions', *Paper Presented at British Educational Research Association Conference*, University of Leeds, September 2001, 1-2.

students answering correctly or incorrectly for the right reasons. As mentioned earlier, students' expectations may cause them to interpret questions differently from the original intent. In these cases, the validity of the question is compromised because we can't confirm whether students who misunderstood it could have answered correctly if they had understood it as intended.

Fear of not attempting exam questions causes anxiety among students during tests. Anxiety is a psychological and physical reaction to a self-concept marked by consciously perceived feelings of tension.[16] Anxious students often experience cognitive difficulties, such as misunderstanding information or difficulty recalling it. Spielberger identified two types of anxiety: state anxiety, which occurs in response to specific stimuli or circumstances, and trait anxiety, which is an inherent personality trait. Prior research indicates that these two types can manifest at different psychological levels.[17] Hancock found that students with high-level anxiety display significantly less motivation in highly evaluative classroom settings compared to those with lower anxiety levels.[18]

Methodology

This study investigates postgraduate students' perspectives and experiences with stimuli-based test questions using a qualitative research design and phenomenological approach. The phenomenological method is appropriate because it seeks to understand individuals' lived experiences and the meanings they assign to them. The interpretive part of the research strives to capture students' subjective perceptions of the challenges they encounter when answering stimuli-based questions. Purposive sampling was used to select participants capable of providing rich, relevant, and varied insights into the research questions. Eight postgraduate students from a private university in Karachi were selected to participate. The criteria for selection included enrollment in the university's postgraduate programs, ability to respond to coursework

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16 Charles D. Spielberger, *Manual for the State-Trait Anxiety Inventory (Form Y): Self-Evaluation Questionnaire* (Palo Alto, CA: Consulting Psychologists Press, 1983), 3-7.

17 Charles D. Spielberger, 'Theory and Research on Anxiety', in *Anxiety and Behavior*, ed. Charles D. Spielberger (New York: Academic Press, 1966), 1-7.

18 D.R. Hancock, 'Effects of Test Anxiety and Evaluative Threat on Students' Achievement and Motivation', *The Journal of Educational Research*, 94:5 (2001), 286-87.

stimuli-based exam questions, and willingness and capacity to share their opinions and experiences.

Eight Qualitative interviews were conducted with post-graduate students of a private university in Karachi, prioritizing depth and richness of data over generalizability. Interview questions were designed according to relevance to obtain the required information from the participants, including their exposure and experiences related to the stimuli-based exam question. It consisted of 8 interview questions. Data were gathered through semi-structured interviews, offering flexibility to explore responses while addressing key topics. The interview guide's open-ended questions aimed to elicit detailed descriptions of participants' experiences and perceptions. It was developed based on a literature review and feedback from educational experts. To ensure participants felt comfortable sharing openly, interviews were conducted in a calm and relaxed environment. Each interview lasted between 45 and 60 minutes and was audio-recorded with the participants' permission. Throughout the interviews, detailed notes were taken to capture nonverbal cues and immediate reflections through documented papers and recorded interviews. Thematic analysis was used to identify, examine, and summarize patterns or themes within the data, following Braun and Clarke's[19] six-phase framework. The study received ethical approval from the university's Institutional Review Board (IRB). Participants were provided with detailed information about the study, including its objectives, methods, benefits, and limitations. Informed consent was obtained from each participant before the interviews. Participants were assured of their privacy and confidentiality and informed of their right to withdraw from the study at any time without penalty. While the study provides valuable insights into postgraduate students' experiences with stimuli-based exam questions, its scope is limited by the small sample size and focus on a single private university. Future research could include a larger sample and involve students from multiple institutions to enhance the generalizability of the findings.

Findings

Theme 1: Inadequate Development of Critical Thinking Skills: Five of the eight Respondents revealed a significant gap in their early education, where traditional teaching strategies focused on rote memorization rather than critical thinking. This lack of early instruction in critical thinking left students unprepared for higher-level academic

[19] Virginia Braun & Victoria Clarke, 'Using Thematic Analysis in Psychology', *Qualitative Research in Psychology,* 3:2 (2006), 87.

challenges. Participants reported limited opportunities for debate, hands-on learning, and activities that encourage critical thinking. One participant noted, in response to the question have you ever been taught stimuli-based questions participant responded, 'We used to have straightforward question-answer sessions, which were mostly memorization. Another added, 'We never had debates or hands-on activities that made us think deeply. This structural problem in the curriculum creates major obstacles for students moving into postgraduate education, where critical thinking is essential. Immediate curriculum reforms are needed to close this gap and help students develop vital cognitive skills.

Theme 2: Lack of Exposure to Stimuli-Based Questions: Seven students among Eight express their concerns related to their exposure to the stimuli-based exam question. They were asked during the interview, Have you ever been taught a stimuli-based question? According to them, it was really difficult for them to first understand the demands and requirements of the questions. The students reported encountering stimuli-based questions for the first time during their postgraduate exams, which posed a significant challenge. During the interview student were asked if they had any idea regarding stimuli-based questions. One participant said, 'We never had practical learning, task-oriented, and critical thinking development earlier. Another shared, 'In my previous education, there was no emphasis on understanding complex scenarios, just memorizing facts'. This lack of prior exposure caused difficulties in understanding and responding to such questions. Introducing stimulus-based questions early and regularly in the educational journey can better prepare students and reduce the shock and difficulty they face at higher levels of education.

Theme 3: Examination Anxiety and Stress: A significant finding was the high levels of anxiety students experienced due to unfamiliar question formats and the pressure to perform well in exams. Three among eight students shared their experience related to exam anxiety; they stated that it leads them towards exam anxiety and fear that restricts them from participating effectively and being present mentally during the exams and throughout the semester. Responding to one of the interview questions related to the struggles during addressing unfamiliar exam questions as stimuli-based exam questions, one participant shared, 'The main issue I faced with stimuli-based questions is sometimes not fully grasping the information given and not figuring out how to attempt it effectively and manage my time during exams'. Another student noted,

'The fear of unknown question types makes me anxious and affects my overall performance'. The complexity and novelty of stimuli-based questions contribute to this anxiety. Schools need to develop strategies to help students manage this stress, such as implementing regular practice sessions with stimuli-based questions and adopting supportive teaching methods.

Theme 4: Time Management Difficulties: Students often reported struggling to manage their time effectively during exams, especially when dealing with stimuli-based questions. All the respondents agreed that they face time management issues during exams, as it takes time and complete understanding related to organizing what exactly the questions are about and which information should be included to support their reasoning and argument in a stimuli-based exam question that measures their rationale and thinking behind the presented argument or answer. One participant responded to the question related to struggles during exams. She expressed, 'There is much wastage of time because we first need to understand the question, which is not easy. Another added, 'These questions are so new to us that we spend too much time just trying to figure out what is being asked'. This issue with time management comes from their lack of experience and familiarity with these complex question formats. The unfamiliarity leads students to spend too much time trying to understand the questions, which increases their stress and affects their ability to finish exam papers efficiently. Solving this problem requires regular practice and training in time management strategies.

Theme 5: Negative Impact on Academic Performance: The combined effects of anxiety and poor time management significantly affected many students' academic performance. In response to the question, do you think your examination and anxiety affect your academic performance? As agreed by the eight respondents. One participant noted, 'Yes, exam anxiety can definitely mess with my performance; it can lead me to forget stuff and make it harder for me to recall it'. Another added, 'I often blank out during exams because of the stress and pressure'. Examination anxiety impairs cognitive function, causing forgetfulness and difficulty recalling information. This underscores the importance of implementing effective stress management techniques to support academic success.

Theme 6: Psychological and Mental Health Impact: The stress and anxiety caused by stimuli-based questions also significantly affect

students' mental health, potentially resulting in long-term consequences. One participant stated, in response of question, what are the factors that develop examination anxiety among you? Respondent mentioned that, 'Examination anxiety develops extremely high, leading to fear of failure and mental disturbance'. Another shared, 'The constant stress affects my mental health, and I struggle with sleep and concentration'. It is essential to integrate mental health care into the educational system to help students manage these stresses effectively. Addressing students' psychological well-being alongside academic demands ensures they have the necessary resources and support to handle challenges such as exam stress and unfamiliar assessment formats. By prioritizing mental health within educational frameworks, institutions can create a healthier learning environment that helps students reach their academic potential.

Discussion

This study aimed to explore the specific challenges postgraduate students face when answering stimuli-based questions on exams and to identify strategies that educators and institutions can adopt to reduce test anxiety related to these questions. The findings provide valuable insights into the pedagogical and psychological hurdles students encounter, which require immediate attention and changes in educational practices.

Challenges in Responding to Stimuli-Based Questions: The first research question aimed to identify the specific difficulties postgraduate students encounter with stimuli-based exam questions, including text-based, audio-based, video-based, and image-based stimuli. The findings reveal that one of the main challenges is the insufficient development of critical thinking skills. Most of the participants agreed on this. This aligns with the literature,[20] which emphasizes the lack of focus on critical thinking in the Pakistani education system. Participants reported that their previous education mainly relied on rote memorization and lacked enough opportunities for debate, hands-on learning, or activities that foster critical thinking. This structural issue in the curriculum left students unprepared for the analytical demands of postgraduate stimuli-based questions.

Additionally, students reported encountering stimuli-based questions for the first time during their postgraduate exams, which posed a significant challenge. This lack of prior exposure led to difficulties in comprehending and responding to such questions. As Freire's theory of critical pedagogy suggests, education should move beyond the 'banking'

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20 M. Jamil, A. Mahmood & S. Masood, *op.cit.*, 647–52.

model, where information is deposited into students' minds, and instead foster a more interactive and critical engagement with content.[21] The absence of this approach in earlier educational stages exacerbates the difficulties faced by students at higher levels.

Examination Anxiety and Stress: The study also found that high levels of anxiety significantly affected students' performance. All the participants reported that the unfamiliarity and complexity of stimuli-based questions caused considerable stress, which led to difficulties in understanding information, figuring out how to answer questions effectively, and managing time during exams. This aligns with research on anxiety, which emphasizes how stress can impair cognitive functions like memory and recall.[22] The psychological stress linked to unfamiliar question formats highlights the need for educational strategies that better prepare students for these challenges.

Furthermore, the time management difficulties reported by students reflect their inexperience with stimuli-based questions. This aligns discussion on formative and summative assessments, where the former prepares students for the latter by providing practice and feedback. Regular exposure to stimuli-based questions and the incorporation of time management training in the curriculum could help mitigate these issues.[23]

Impact on Academic Performance and Mental Health: The combined effects of anxiety and poor time management significantly affected students' academic performance. Participants reported that examination anxiety often caused forgetfulness and made it more difficult for them to recall information during exams. This finding is supported by[24] the conclusion that high-level anxiety can decrease motivation and performance in evaluative settings. Additionally, the psychological stress and anxiety related to these issues also impacted students' mental health, potentially leading to long-term negative effects.

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21 Paulo Freire, *Pedagogy of the Oppressed* (New York: Continuum, 1978), 72-87.

22 Charles D. Spielberger, *Manual for the State-Trait …, op.cit.,* 10-12.

23 W. Harlen & M. James, 'Assessment and Learning: Differences and Relationships between Formative and Summative Assessment', *Assessment in Education: Principles, Policy & Practice*, 4:3 (1997), 369-371.

24 D.R. Hancock, 'Effects of Test Anxiety and Evaluative Threat on Students' Achievement and Motivation', *The Journal of Educational Research*, 94:5 (2001), 285-87.

The mental health implications of examination stress highlight the importance of integrating mental health resources into educational institutions. As supported by Moore's study,[25] Fostering a supportive learning environment that addresses students' psychological well-being is crucial for their academic success and overall development.

Strategies to Reduce Exam Anxiety: The second research question focused on identifying strategies specifically related to stimuli-based questions. Participants recommended that consistent practice with such questions, combined with workshops on exam techniques and stress management, could help lessen anxiety. This aligns with the suggestions by Elder and Paul,[26] who emphasize the importance of practicing critical thinking to reduce cognitive load and anxiety during exams.

Moreover, incorporating mental health resources and services into educational institutions can provide students with the necessary support to manage stress. Facilitating candid conversations about mental health and making therapy services accessible can help students navigate the pressures of exams more effectively.

Implications for Teaching Pedagogy and Curriculum Reform: The findings underscore a pressing need to transition from a memorization-focused education system to one that fosters critical thinking and problem-solving from an early age. This change requires significant modifications in teaching methods. Teachers must be trained in modern instructional strategies that encourage active learning and critical engagement. The literature supports this approach, advocating for the integration of critical thinking skills across all subject areas and grade levels.[27]

Implementing problem-based learning (PBL) and inquiry-based learning (IBL) methodologies can promote deeper understanding and engagement. These methods align with the theoretical frameworks discussed by Freire (1978) and McLaren et al. (2017)[28] which advocate

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25 T. Moore, 'Critical Thinking: Seven Definitions in Search of a Concept', *Studies in Higher Education*, 38:4 (2013), 518-20.

26 Richard Paul and Linda Elder, *Critical Thinking: Tools for Taking Charge of Your Learning and Your Life*, 3rd ed. (Lanham, MD: The Foundation for Critical Thinking/Rowman & Littlefield, 2020), 34-36.

27 Diane F. Halpern, *op.cit.*, 25-27.

28 Peter McLaren, Joe L. Kincheloe, and Shirley R. Steinberg, *Critical Pedagogy: An Introduction*, 3rd ed. (New York: Routledge, 2017), 69-92.

for an educational approach that empowers students to think critically and act independently.[29]

Conclusion

The challenges faced by postgraduate students in answering stimuli-based examination questions are due to limited exposure and critical thinking training, coupled with a poor exam time management strategy, which influences heightened anxiety. Results underscore a call for much-needed system-wide educational changes designed to incorporate the practice of critical thinking early in the education continuum, frequent exposure to stimulus-based questions, and mechanisms to improve student mental health. Implementing these proactive approaches can benefit educators and institutions by better equipping students with the skills needed for postgraduate education and their professional lives, thus creating a community where learning is comprehensive and supportive.

Recommendations

For students to become familiar with stimuli-based questions and develop critical thinking abilities, these questions must be gradually introduced in early academic stages through quizzes, class discussions, and homework assignments. Moreover, students can be helped to analyze and solve stimuli-based questions by holding regular group problem-solving sessions where teachers provide structured guidance. These activities also help students prepare for complex challenges by simulating exam conditions through mock exams that feature a variety of question formats, including stimuli-based questions. Students can also improve their time management skills and develop strategies for handling new question types by receiving timely and constructive feedback on their responses to stimuli-based questions. Deeper involvement and comprehension are also encouraged by encouraging self-reflection and peer evaluation sessions. Providing workshops and training sessions to educators as part of their professional development gives them the resources they need to assess and teach stimuli-based questions. With this method, teachers can create dynamic classes that encourage deep comprehension and valuable application of information in real-world situations.

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29 Paulo Freire, *op.cit.,* 52-69.