

Problems Experienced by Undergraduate Students in Conducting Research in Online Distance Learning

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ABSTRACT

The objective of this study was to analyze challenges faced by undergraduate students while conducting their research work in online distance learning environment. This study employed descriptive research design and was based on quantitative approach. The sample size of 400 students were selected through multistage sampling methods involving cluster and simple random sampling technique. Questionnaire was modified to obtain data which was five-point Likert scale. After the questionnaire was modified, it was pilot tested from a number of respondents in order to examine the reliability of the instrument. To condense the data, descriptive statistics such as mean, frequency, and standard deviation were used. The data were processed using the Statistics Package for Social Sciences (SPSS). The result indicated a number of significant difficulties encountered by undergraduate students in distance learning environment. These were challenges with time management, motivation and availability of research resources. The students also faced challenges with understanding methodologies and getting timely supervisory support. Institutional factors like limited access to electronic libraries and poor academic support also slowed progress. In total, all these aspects had a negative effect on students' capacity to carry out effective research. According to the discovery the recommendations are institutions ought to formulate ways of increasing student motivation and participation in online learning, for instance, interactive learning and peer support groups. Digital libraries and other resources for research must be made available to support students in conducting quality research.

Keywords: Online, Distance learning, Environment, Problems, Research, Undergraduate, Students

INTRODUCTION

The transition towards online distance learning (ODL) has fundamentally transformed higher education, especially between and after the COVID-19 pandemic. Though ODL is flexible, accessible, and provides room for self-paced learning, it presents unique challenges to learners who are engaged in research-oriented academic activities (Aboagye et al., 2023). Independent investigation, critical examination, and structured study required in undergraduate research become

more challenging in an online setup where face-to-face guidance, access to resources, and peer collaboration are constraints (Rahiem, 2022).

In conventional learning environments, learners enjoy immediate academic guidance, access to physical libraries, and frequent interactions with peers and supervisors. Yet, this environment can diminish such opportunities in the online environment, causing enhanced feelings of loneliness, time management problems, and lack of access to research resources (Almahasees & Qassem, 2023). Additionally, technology-related obstacles—such as poor internet connectivity and low digital literacy—may also widen these challenges, particularly for learners from low-resource areas (Ali et al., 2024).

Studies have established that students in online mode tend to lack motivation, self-discipline, and research methodology clarity as a result of the absence of immediate academic interaction and feedback (Sá & Serpa, 2022). Furthermore, institutional constraints, including poor digital library services, sparse virtual research workshops, and poor supervisor-student dialogue, restrict the conduct of good-quality research work (Mtebe & Raphael, 2023).

Recognizing the types of difficulties undergraduate students have when conducting research within this educational system is necessary given the increasing usage of online distance learning at the collegiate level. Understanding these problems can help organizations develop targeted solutions that can raise student satisfaction, increase research output, and preserve academic quality in distant learning programs. Therefore, with an emphasis on academic, technological, motivational, and institutional variables, this study investigates the various difficulties undergraduate students have when conducting research in an ODL context.

LITERATURE REVIEW

Developing the Idea of Online Distance Learning (ODL)

The term "online distance learning" (ODL) describes the provision of education when instruction, learning, and evaluation take place mostly online, frequently without in-person contact (Anderson, 2022). It gets beyond time and location limitations by utilizing information and communication technologies (ICTs).

Transactional Distance Theory as the theoretical underpinning

According to Moore's Transactional Distance Theory (1993), "distance" in education refers to both psychological and pedagogical factors in addition to physical isolation. Three main factors affect it: the teacher-student conversation, the course structure, and the learner's autonomy. High transactional distance in research settings can lead to imprecise methodological advice, poor supervisor communication, and decreased motivation (Garrison, 2023).

Challenges in Conducting Undergraduate Research in ODL

Student-Related Factors

Students in ODL often face self-regulation, motivation, and time management difficulties because of the absence of structured classroom environments (Rahiem, 2022). Research tasks require sustained engagement, which can be challenging in an isolated online setting. The Self-Determination Theory (Deci & Ryan, 1985) states that autonomy, competence, and relatedness are crucial for motivation. In ODL, these needs are often unmet, leading to procrastination and lower performance (Khalid et al., 2023).

Methodology-Related Factors

Developing an appropriate research methodology requires access to resources, methodological training, and expert guidance. Students in ODL frequently encounter challenges such as limited access to research tools and software, difficulty learning complex methods without in-person workshops, and constraints in remote data collection. These issues may lead to flawed designs or ethical concerns (Ali et al., 2024). Constructivist Learning Theory (Vygotsky, 1978) highlights the importance of guided learning, which can be limited in online contexts.

Supervisor-Related Factors

Effective supervision is essential for quality research. In ODL, delays in feedback, reduced supervisor availability, and lack of real-time discussions are common (Sahu & Sinha, 2022). Weakness in any of these areas can hinder research success (Mtebe & Raphael, 2023).

Institutional-Related Factors

Institutional infrastructure plays a crucial role in enabling research. In many ODL settings, students experience limited digital library access, insufficient online workshops, and a weak research culture. When institutions fail to provide effective platforms, research engagement decreases (Ahmad et al., 2024).

Technological Barriers and Digital Literacy

Digital literacy is fundamental for tasks such as literature searches, statistical analysis, and referencing (Almahasees & Qassem, 2023). Students lacking skills in using academic software, reference managers, and plagiarism detection tools may struggle to meet research requirements. Poor internet connectivity and outdated devices, particularly in rural or low-income settings, further contribute to these challenges (Aboagye et al., 2023).

Summary of Literature Gap

Although research has addressed general challenges in online learning, few studies have specifically examined the problems undergraduate students face when conducting research in ODL environments, particularly in Pakistan. Existing literature often focuses on online learning as a whole rather than on the unique academic, methodological, supervisory, and institutional hurdles of research-based programs. This study addresses this gap by investigating these challenges in detail.

Objectives of the Study

1. To identify the issues faced by undergraduate students in carrying out research in an online distance learning university in Lahore related to student-related factors.
2. To determine the issues faced by undergraduate students in conducting research in an online distance learning university in Lahore related to methodology-related factors.
3. To identify the issues faced by undergraduate students in supervisor-related factors to carry out research in an online distance learning university in Lahore.
4. To explore the issues encountered by undergraduate students in carrying out research from an institutional-related perspective in online distance learning universities in Lahore.

Research Questions

1. What are the issues encountered by undergraduate students in carrying out research in an online distance learning university in Lahore from a student-related perspective?
2. What are the issues encountered by undergraduate students in carrying out research in an online distance learning university in Lahore from a methodology-related perspective?
3. What are undergraduate students' challenges in terms of supervisor-related aspects in undertaking research at an online distance learning university in Lahore?
4. What are undergraduate students' challenges in undertaking research in terms of institutional-related aspects in online distance learning universities in Lahore?

METHODOLOGY

This study adopted a quantitative research approach. A descriptive survey design was employed to collect numerical data regarding students' challenges and analyze it statistically. Descriptive surveys, as noted by Robson (2011), are effective for gathering systematic information about people's attitudes, opinions, and behaviors. This method was suitable for the present study as it aligned with the research objectives and allowed for a structured and detailed understanding of the difficulties students encounter when undertaking research in an ODL context.

Undergraduate students enrolled in the 16 public universities in the Lahore district, as listed by the Higher Education Commission (2023), made up the study population. To guarantee representation, a multistage sampling procedure was used to choose a sample of 400 students. In the first round, stratified sampling was utilized to choose four public colleges. In the second round, four departments were chosen from each chosen university using basic random selection. The target sample was obtained in the last stage by randomly selecting 50 students from each department. There were 180 men and 220 women among the participants, offering a diverse viewpoint on the research challenges faced by students in various academic fields.

A modified version of Haleem and Asghar's (2023) Online Distance Learning (ODL) scale was used to collect data. The questionnaire covered three domains: issues connected to students, supervisors, and institutions. It had 22 statements that were assessed on a five-point Likert scale that went from "strongly disagree" to "strongly agree." To verify the validity and reliability of the instrument, a pilot test was carried out using 10% of the target sample, chosen from people who shared traits with the research population. The final instrument's Cronbach's alpha coefficient was 0.78, suggesting satisfactory internal consistency, after minor adjustments were made in response to the input received.

With prior approval from the relevant institution administrations, the researchers personally conducted the poll. The chosen students received all 400 surveys directly, along with comprehensive instructions and enough time to do them. To guarantee clarity, the study's goal was described and any queries from participants were answered. The Statistical Package for the Social Sciences (SPSS) was used to analyze the data, and descriptive statistics like mean, standard deviation, and frequency were used to compile the results. This analysis made it possible to identify important contributing elements by shedding light on the type and scope of the issues students encounter when conducting research in online distance learning environments.

RESULTS AND ANALYSIS

Table 1

Demographic Characteristics of Graduate Students (N = 400)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	180	45.0
	Female	220	55.0
Age Group (in years)	21–25	150	37.5
	26–30	180	45.0
	31–35	50	12.5
	36 and above	20	5.0
Field of Study	Education	120	30.0
	Social Sciences	100	25.0
	Management Sciences	80	20.0
	Natural Sciences	60	15.0
	Others	40	10.0

The sample included slightly more female students (55%) than male students (45%). Most respondents were between 26 and 30 years old (45%), with Education (30%) and Social Sciences (25%) being the most common fields of study.

Table 2

Problems Experienced by Undergraduate Students in Conducting Research (N = 400)

Category	Statement	Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree (1)	Mean	Std. Deviation
Student-Related Problems	Lack of motivation and commitment	50	100	50	120	80	3.10	1.20
	Lack of time for research	80	120	50	100	50	3.45	1.00
	Conflicts between work/family and study schedule	60	100	80	120	40	3.20	1.15

Category	Statement	Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree (1)	Mean	Std. Deviation
Methodology-Related Problems	Lack of time for assigned tasks	90	110	40	120	40	3.35	1.10
	Problem in writing and reporting the results	60	120	90	80	50	3.35	1.10
	Problem in tool/questionnaire selection	70	110	90	80	50	3.40	1.00
	Problems with accessing resources	100	90	80	70	60	3.60	1.05
	Language problems with foreign resources/articles	90	110	70	80	50	3.50	1.05
	Problems getting permission from institute	50	120	90	90	50	3.10	1.15
	Problem of unwillingness of participants	80	110	70	90	50	3.35	1.10
Supervisor-Related Problems	Selection of topic	60	110	90	80	60	3.35	1.10
	Gives direction to students properly	70	100	90	90	50	3.45	1.00
	Provided information about sources of literature	100	90	80	70	60	3.60	1.05
	Proper guidance from supervisor	80	120	70	90	50	3.45	1.10
	Lack of discussion with supervisor	70	110	90	80	50	3.40	1.05
	Delayed/ineffective feedback on marked assignments	90	100	60	90	60	3.45	1.15
	Assisted the student	60	110	90	80	60	3.30	1.10

Category	Statement	Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree (1)	Mean	Std. Deviation
Institutional-Related Problems	in data analysis							
	Assisted the student in report writing	80	100	90	80	50	3.45	1.05
	Adequate resources (faculties, IT lab, library, fund)	100	120	70	80	30	3.65	1.00
	Formats and sample of thesis writing	80	100	90	90	50	3.35	1.05
	Lack of digital library resources	120	100	70	70	40	3.70	1.05
	Insufficient content and lack of direction	90	110	70	90	50	3.45	1.10

The results show that students in online distance learning face major challenges, with time management—especially lack of time for research (Mean = 3.45) and tasks (Mean = 3.35)—being the most pressing. Methodology-related issues include difficulty accessing research resources (Mean = 3.60) and language barriers (Mean = 3.50). Supervisor-related problems focus on inadequate information about literature sources (Mean = 3.60) and delays in guidance (Mean = 3.45), while institutional challenges are the most critical, led by lack of digital library resources (Mean = 3.70) and inadequate infrastructure (Mean = 3.65), highlighting the need for both academic and structural support.

DISCUSSION

The results of this study show that performing research is extremely difficult for undergraduate students at public universities, especially when it comes to institutional limitations, a lack of supervisory guidance, and poor research abilities. These findings are in line with those of Alam et al. (2020), who discovered that a lack of exposure and training causes undergraduate students in Pakistan to frequently struggle with research technique, data analysis, and academic writing. According to a study by Khan and Ahmad (2021), one of the biggest obstacles to successful student research participation is the absence of organized research support in institutions. These parallels imply that the problems found in the present study are not unique to one school but rather represent more general difficulties in the higher education system in emerging nations.

The findings also show that respondents frequently expressed concerns about supervisor-related issues, such as insufficient feedback and unavailability. This supports the findings of Owusu-Agyeman and Fourie (2021), who highlighted that a student's success in their research is greatly influenced by the caliber of their supervision. Their study demonstrated that a lack of connection between students and supervisors results in lower-quality and delayed research completion. The significance of improving supervisory methods in public universities is further supported by Akpan et al.'s (2019) finding that students who receive regular and constructive feedback from supervisors are more likely to grow confident in their research abilities.

Research challenges were also shown to be significantly influenced by institutional constraints, as students reported restricted research infrastructure, insufficient financing, and poor access to academic resources. This is in line with the findings of Ahmed and Shah's (2022) study, which showed that resource constraints severely reduce research productivity in Pakistani universities. According to Osei and Mensah (2020), students' capacity to carry out high-quality research is further hampered by the lack of well-equipped libraries, digital resources, and research labs. The results of the current study support the notion that enhancing research outcomes requires institutional investment in research infrastructure.

Another particularly interesting feature of the results is the influence of student-related variables, including time management problems, lack of motivation, and inadequate research experience in the past. These issues are consistent with the conclusions reached by Dube and Maphosa (2021), who noted that constraints that affect individuals personally, such as poor time planning and poor self-confidence, tend to deter students from completing their research successfully. Further, Yusuf and Bello (2022) contended that student motivation is also heavily associated with institutional and supervisory support, where resolving these systemic problems can indirectly enhance students' own research capabilities.

In total, the findings of the current study are in line with past studies in emphasizing the interrelated patterns of student-related, supervisor-related, and institution-related problems in undergraduate research. Consistent with Amponsah and Onuoha (2019) observations, this research asserts that enhancing research capacity in higher learning involves a multi-faceted approach, with specific training, enhanced supervisory practice, and increased institutional support. By tackling these inter-related factors, Lahore universities and the like can foster a more favorable environment for student research, enhancing academic quality as well as research productivity.

CONCLUSION

The current study examined the difficulties students encounter when conducting research and discovered that a mix of supervisory, personal, and institutional issues seriously impede research advancement. The results are consistent with other research showing that common obstacles in higher education settings include a lack of research expertise, time constraints, restricted access to resources, and insufficient supervision. By emphasizing that these problems are not unique but rather are a component of larger systemic difficulties that impact students' capacity to do high-quality research, this study adds to the expanding corpus of literature. In the end, removing these obstacles is critical to developing a research culture that improves student achievement, academic quality, and innovation.

RECOMMENDATIONS

According to the research, institutions of higher learning need to enhance research training programs to prepare students with necessary skills and self-confidence. Supervisors must be supported with capacity-building to give quality guidance and mentorship, while the institutions need to provide fair access to resources like libraries, research equipment, and resources. Collaborative research, having organized timelines, and adopting periodic monitoring can also guide students to stay on track and be motivated. In addition, incorporating research methods courses earlier in the course of studies can help better equip students for the final-year project or thesis.

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