

Digital Pathways to Education: Websites Accessibility of Allama Iqbal Open University and Virtual University

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<https://doi.org/10.62345/jads.2024.13.4.85>

Abstract

This research has revealed the underlying educational philosophies of non-formal education delivered through e-platforms at Allama Iqbal Open University (AIOU) and Virtual University (VU). The nature and content of AIOU and VU websites were examined through a thematic analysis. AIOU's website is designed to be inclusive and adaptable, catering to all types of learners. On the other hand, VU's website is specifically tailored to meet the needs of digitally inclined students. AIOU offers various courses, including computer science and IT, while VU focuses primarily on these areas. This study delves into the different approaches to content delivery in the two universities, as AIOU offers physical and online courses. At the same time, VU relies solely on its Learning Management System (LMS). Student portals are crucial in fostering effective communication between students and institutions. With VU's comprehensive learning management system, students can access course materials and assignments and interact with their instructors. Comparatively, AIOU's website serves as a platform for students to connect with their institution.

Keywords: Learning Management System (LMS), Student Portals in Pakistan, Websites Accessibility.

Introduction

There have been extensive transformations in modern education, considering the rapid technological advancement and digital innovation that mark this era. The emergence of educational institutional websites has dramatically changed how we learn. Muñoz et al. (2019) However, the digital revolution has made Pakistan a nation committed to inclusivity and adaptation in education. The institutions are making notable strides by offering quality non-formal education using online platforms.

The present research engages in an extensive analysis of AIOU's and VU's digital interfaces. The connection between their websites vis-à-vis the institution's philosophy, programme options, course works, admission process, assessment materials, and the pivotal function of students' web pages. Pakistan focuses on non-formal education to ensure it reaches as many people as possible. Understanding what these sites mean against their objectives has become imperative in modern settings.

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Context: The Process of Digitizing and Modernizing Education

Today, education is undergoing transformational change in digitization. Due to the advent of the Internet, e-learning, and online education, traditional education has become much broader. These days, learners do not necessarily need to be in a brick-and-mortar classroom building to access a reservoir of information that far exceeds what is on hand in any building ever built.

Similarly, many other countries, including Pakistan, have already started the process of digital transformation with all the opportunities that online education brings. Offering educational opportunities for different populations is achievable through non-formal education. Utilizing Internet platforms especially caters to learners who do not have access to traditional learning institutions. This goal has been embraced by both AIOU and VU, which, through their strong online presence, offer students friendly and easy-to-use online learning platforms.

The Importance of AIOU and VU Websites: Non-Formal Education Catalysts

In the education sector, AIOU leads as a non-formal provider in the Pakistani context. This commitment to ensuring that learning is available to learners whose educational pathways differ is commendable. These institutions use their websites as primary sources of information for learners, providing course material, enrollment processes, exam dates, and a platform for networking with academia. Thus, such digital facilities are instrumental in realizing the goals or objectives associated with non-formal education.

The article seeks to explore both learning platforms comprehensively. For instance, it will assess how these two learning platforms can incorporate the principles of inclusive education, flexibility, and accessibility in the case of AIOU, as well as digital or virtual learning in VU. Presenting different programs such as conventional degrees, vocational training, and specialized ICT courses on the websites will meet the needs of all users. This study aims to comprehensively look at the educational websites that shape, change, and influence the future of education in Pakistan, where there is a digital revolution and improvement of education systems. AIOU and VU spearhead non-formal education in the country. This study examines how digital platforms have been tested and uniquely contributed to non-formal education.

Problem Statement

Institutes are learning hubs for nations worldwide. Higher education institutes lead the generation towards purposeful citizens. Regarding Pakistan, there are two types of higher education institutes: regular and distance-based. VU and AIOU work for distance learners in their specific domains, and various researchers show their mechanisms, purposes, and benefits for students in their studies. With differences, it is noted that both universities depend on official websites for announcements, lectures /classes, and even for delivering learning materials to students. The current study focused on comparing VU and AIOU websites. Research on website comparison is a trend in many countries, but in Pakistan, it is only limited to comparisons of graphics and visual representations. This article compared the content of VU and AIOU websites via an educationist lens, highlighting the feasibility of students booting both websites. Further, it explains which content, information and details are provided on websites and which need to be added for students, which may help them in their study and enrollment period.

Purpose of the Study

This study aims to conduct a thematic analysis of AIOU's and VU's websites to understand how these institutions convey their educational philosophies and support informal adult learners.

Research Questions

1. How accurate are the respective websites of AIOU and VU regarding their distinct educational philosophy in terms of design and content?
2. In the variety of courses, what is the difference between the programme offered on AIOU's website and the one displayed on VU's website?
3. What is the difference between the interfaces of the two websites for easy availability of learning resources in relation to AIOU and VU?
4. What are the affordability and accessibility of these processes for non-formal learners on these two sites?
5. How is examination-related information distributed on AIOU's and VU's websites, with respect to methods used and ease of accessibility?
6. How does AIOU's student portal differ from VU's Learning Management systems (LMS) regarding their functional abilities, ability to facilitate academic exchanges, and ability to provide user records?

Literature Review

Today, many institutions utilize their websites as prime avenues for disseminating information, delivering content, and offering online studies (Metcalf & Blanco, 2019). The importance of being online for non-formal educational institutions such as Allama Iqbal Open University and Virtual University Pakistan has been realized. This is a literature review that highlights some critical aspects of non-formal learning, which are underscored by website design and functioning. It offers essential observations on a comparative review of the AIOU and VU websites.

Due to the current information dominating the world, the World Wide Web and the Internet are key aspects of creating knowledge. This platform allows people to share information, ignoring the boundaries of time, place, and politics. Additionally, the Internet has enhanced how data is collected, stored, evaluated, and disseminated within information-based organizations and agencies. With the help of the Internet, global social and cultural contacts have led to opportunities for improving the number and quality of such relationships (Muñoz, Li, Pehlivan, et al., 2019).

It is a different way of acquiring information and knowledge from the regular formal education program. One aspect of this program involves offering education opportunities for certain segments of people who cannot engage in conventional full-time studies, such as employed adults and people living in rural areas. The emergence of informal education in the form of online learning has made learning more accessible and also provides excellent flexibility.

Concerning this, university websites represent an efficient means for educational institutions to communicate their objectives and policies. Universities mostly use their sites as a core tool in communication and advertisement, targeting prospective students (Lažetić, 2019). The user experience is also affected by the design and usability of educational websites. A well-made site facilitates user exchange, makes navigation more manageable, and provides accessibility. On the other hand, a poorly designed website can get into the process of getting information, may disappoint consumers, and dissuade people from thinking about studying. As a result, the effectiveness of non-formal education institutions is significantly driven by website design (Saputra, 2021).

Accessibility is a key ingredient for online learning. Such educational websites should, therefore, offer user-specific services to learners and people with various disabilities (Chelloug, 2023). They lay the groundwork for Web Content Accessibility Guidelines (WCAG), which should be strictly adhered to ensure true inclusion/fairness in non-formal education.

Efficient online learning platforms enhance collaboration among students, tutors, and technical support. Discussion boards, chat tools, and collaborative spaces should be incorporated to generate a sense of community and allow information sharing. These traits need to be present and effective to enhance the online educational experience (Aizpura et al., 2016).

In education research, comparative studies are valuable for assessing the pros and cons of any particular institution(s), programme(s), and platform. The evaluations provide a meaningful insight into the best approaches and those that need improvement. In addition, Singla and Aggarwal (2018) assessed the effectiveness of Indian university websites from their user's perspective. The participants' demographics included gender, age, schooling level and status. Quantitative research was applied in this study, and the primary data was collected from 75 respondents who had filled out a pre-tested questionnaire. Further, other research methods, such as quantitative research, were used, including the think-aloud approach. In this article, Olaleye, Sanusi, Ukpabi, and Okunoye (2018) studied the performance and financial audit of 141 universities in Nigeria comprising public, private, and federal institutions. The researchers used an extensive evaluative and analytical research approach involving multiple paradigms that assessed university websites.

Prior Research on AIOU and VU: Previous studies on AIOU and VU confirm that both are pioneers of informal education in Pakistan. Their technological approach has enabled the two institutions to offer education services across the country, addressing issues of affordability and access. The study conducted by Sodhar et al. (2019) analyses a specific engineering university's website in Pakistan, looking at formal education institutions.

In conclusion, this article will highlight the background and importance of comparing the AIOU and VU sites under the umbrella of non-formal education. This statement indicates that website design/usability, accessibility, and support for online learning and collaboration are vital to shaping the online educational experience (Saputra, 2021).

Therefore, the contribution will provide vital leads on improving the websites of these two renowned learning institutions, as previous studies have done.

Significance of the Study

This study is essential as it can stimulate improvement in the informal education field in Pakistan. These findings could contribute significantly toward enhancing institutional websites' quality and quantity in the era of electronic information. More precisely, the study has the capacity to:

1. **Identify Areas for Improvement:** The main areas of weakness for educational institutional websites identified in the study include accessibility improvements, real-time collaboration abilities, and user-oriented design. It also provides a route map for improving the functionality and convenience of these sites through enhanced designs. This can lead to wholesome and comprehensive education experiences.
2. **Enhance Inclusivity and Accessibility:** These findings may benefit some academic institutions, such as AIOU and VU, where students with different needs and expectations also require quality learning. Thus, they can help reduce education disparities.
3. **Improve User-Centered Design:** To customize the online learning experience, it is critical to understand how these sites accommodate the needs and preferences of non-formal learners. This research can encourage the adoption of user-oriented design concepts, increasing the customized and receptive educational experience for student particularities.

4. **Enhance Educational Research:** The study helps us understand how websites work as non-formal educational platforms. This information may assist in further studies and innovations in education in Pakistan and across the globe.

This study may have positive implications for non-formal education in terms of developing better websites. It will take into consideration the varying needs and preferences of learners in Pakistan and perhaps other parts of the world as well.

Research Methodology

This study chose the qualitative thematic analysis method. Data was collected from AIOU and VU, including areas of educational philosophy, programmes/courses, course materials, admissions data, exam information, and the student portal.

Data Collection

In Pakistan, two higher educational institutes work in distance mode, so the websites of both institutes were framed as samples for this study. Data was gathered via the AIOU (<https://www.aiou.edu.pk/>) and VU (<https://www.vu.edu.pk/>) websites.

Data Analysis

The analysis involved a systematic examination of the content and design elements of these constituent parts.

Educational Philosophy

- Allama Iqbal Open University's ideology is to provide open and distance education and training for all. This commitment is demonstrated on the website, which is designed with easy access and flexible courses for learners that include people without formal schooling opportunities.
- As its name suggests, Virtual University Pakistan is designed to operate entirely on the Internet for online-based education. The site emphasizes the institution's focus on quality education delivery strictly using online means for those learners who put a premium on mobile/flexible learning approaches.

Programmes and Courses

- AIOU offers programs such as regular degree courses, diplomas, certifications and technical skills training. The site contains comprehensive details on diverse services essential for countless informal learners.
- VU is mainly concerned with computer science and IT-oriented studies; hence, it is a hub of dedicated students. It highlights the delivery of virtual undergraduate, graduate, and postgraduate programs.

Course Materials

- AIOU recognizes the diverse needs of its students and offers a convenient array of physical and digital course materials. Students can access textbooks, assignments, and other study resources through the user-friendly website.
- VU delivers all course materials solely through its Learning Management System (LMS). The website is a central hub for students to retrieve lectures, assignments, and quizzes, crucial components of informal education.

Admissions

- AIOU's informative and user-friendly website streamlines the admission process for non-traditional learners. Prospective students can access comprehensive details on admission procedures and eligibility requirements and even submit their admission forms online.
- Virtual University's website also plays a vital role in the admissions process by providing all necessary information and resources through its user-friendly platform."

Examination Information

- Get all the necessary information about your exams, including schedules, data sheets, and examination centres, from the reliable AIOU website. It is a valuable resource for students to prepare for their exams.
- VU's website ensures easy availability of important exam-related information, such as date sheets and guidelines for online exams, making the exam process more convenient.

Student Portals

- Connect with your institution through the AIOU website, which acts as a bridge between you and your academic data. This platform allows you to check your results, submit assignments electronically, and access various learning resources.
- Experience a seamless learning journey with VU's student portals, which go above and beyond by providing a comprehensive experience. From accessing academic data to submitting assignments, these portals make learning easier and more efficient.

Through a comprehensive thematic analysis, this study sought to understand how the AIOU and VU websites portray their educational philosophies, showcase their academic programs, deliver course materials, streamline admissions processes, disseminate exam information, and support students through interactive online portals.

Findings

The findings of this study may have significant implications in continuously improving the accessibility of quality education for non-traditional learners in Pakistan.

- **Ethical Philosophies:** Examining these websites revealed several noteworthy findings, such as AIOU's strong focus on inclusion and flexibility and VU's emphasis on providing a supportive learning environment.
- **Programme Offerings:** AIOU boasts an extensive array of programmes, from degree courses to diplomas, certifications, and vocational training. Meanwhile, VU primarily focuses on computer science and IT courses, aligning perfectly with its digital and virtual approach.
- **Course Materials:** Furthermore, AIOU offers the flexibility of physical and digital course materials, catering to diverse learning styles. On the other hand, VU streamlines content distribution by relying solely on its Learning Management System (LMS) for material dissemination, ensuring a seamless digital educational experience.
- **Admission Procedures:** The admission procedures for both AIOU and VU are clearly delineated on their respective websites, highlighting the eligibility requirements and the convenience of online application submissions. These methods are deliberate in providing a user-friendly experience for prospective students.

- Examination Information: AIOU is committed to delivering students timetables, data sheets, and examination centres. On the other hand, VU's website offers instructions on online examinations, simplifying the testing process in electronic times.
- Student Portals: Students can access their academic details, such as results, and submit their work through the student portal on AIOU's website. However, VU has a different path: through the learning management system, which incorporates course materials, assignments, and assessments, as well as opportunities to consult with tutors directly within one online platform.

Discussion

The findings indicate that AIOU and VU have managed to develop web-based learning environments that are simple and easy to use. In particular, these platforms have enabled non-formal education in Pakistan. Nevertheless, more issues still need to be addressed. The recommendation would be to widen accessibility standards, amplify real-time collaborative functions and refine the features to enhance user's online learning experience on both platforms (Aizpurua, Harper and Vigo, 2016).

Moreover, employing an inclusive user-driven design method would be appropriate since it can target each user specifically. This is especially important in non-formal education, where accessibility and flexibility are the key. This comparative analysis delves deep into the websites of two acclaimed non-formal educational institutions in Pakistan: AIOU and VU. It comprehensively addresses significant issues such as the educational philosophy of the establishments, courses of studies, textbook provision, admission procedures, and student portal efficiency.

Website comparison is in trend for their user-friendly and graphical representation level for computer scientists, but as technology evolves, the educational system with digital platforms. The requirements for comparison of instructive institutes' websites have expanded. Kuppusamy and Balaji (2023) and Sodhar, Bhanbhro, and Amur (2019) emphasize the significance of assessing web openness through observational and specialized focal points. These works outline how availability impacts students' encounters and inclusivity, emphasizing that compelling, instructive websites must suit differing learner needs, counting those with incapacities. Moreover, the comparative examination by Lawal and Viatonu (2017) sheds light on how diverse institutions' websites shift in convenience and asset accessibility, uncovering the incongruities between open and private colleges and their suggestions for understudy engagement and learning. Besides, hypothetical bits of knowledge in the user-centred plans, as talked about by Al-Fayez and Al-Tawriy (2021), highlight the need for planning websites that prioritize client needs and behaviours to improve usefulness and engagement. This theoretical point of view is pivotal for understanding how well-designed instructive websites can bolster learning goals and encourage viable communication.

The philosophy of AIOU is that education should be made available to everyone. This sentiment is reflected in the site design, which effectively represents the hospitable nature of the group. This is a very accessible and flexible university that demonstrates a commitment to its student population, which is quite diversified (Afzal, 2024). However, as its name represents, VU only deals with virtual, online learning. Its website boasts high-quality online education dedicated to learners who consider digital as modern and flexible. Various programs, such as degree courses, vocational training, diplomas and certificates, are available at AIOU. The many pages of information cover many aspects ranging from different types of informal learners with different aims. However, VU mainly focuses on computer science and IT so that it may serve as a home for

like-minded fellows. It is online and presents a range of undergraduates, graduates, and postgraduates (Muñoz et al., 2019).

The site is beneficial when providing students with books, assignments, and study guidance, as they can choose their preferred learning mode. In sharp contrast, VU, an all-digital university, only presents all its courses through an intriguing online platform. This aligns with Saputra's (2021) vision, which indicates that a website is also an entry point to vital aspects of web-based informal learning like lectures, assignments, and quizzes.

The AIOU website is superbly structured with a clean and easy-to-navigate interface that contains detailed information regarding admission procedures, qualification requirements, and online application forms. This careful arrangement is meant to cover the need for accessibility and convenience that all students involved in non-formal education are expected to have. Similarly, the Virtual University's homepage has an admissions page containing in-depth details regarding all application procedures, subjects to be examined, and simple submission of the forms online.

Students looking for detailed information about test schedules, data sheets, and exam centres need not travel anywhere else but AIOU's highly credible website, which is convenient during exam preparations. The VU website gives simple access to essential elements of computerized tests involving timetables and procedures.

Moreover, the student platform of the AIOU serves as an integrative element between students and the organization where academic information is easily accessible, results are verifiable online, and electronic assignment submission takes place, thus establishing a close connection between learners and the institutional structure. On the other hand, VU utilizes its own Learning Management System as an ultimate portal that enables students to engage themselves in obtaining course materials, submitting their completed tasks, participating in quizzes, and communicating with instructors.

In the process, we get to understand comprehensively how the AIOU and the VU sites express their educational philosophies, present their programmes, offer course materials, make admissions easy, disclose exam details, and provide support to students through the Internet. Exploring organizations' websites can give us an idea of their individual approaches and strategies (Giannoumi et al., 2017).

The realm of non-formal education in Pakistan is constantly evolving, and two institutions stand out as leaders in this field: Virtual University Pakistan and Allama Iqbal Open University. These institutes provide flexibility and alternate options for learning. However, they differ in offering easy and readily available information and resources via their websites. AIOU has a holistic perspective, offering various programmes that target many students. However, VU excels at providing e-learning materials for those who prefer digital and virtual education. In summary, it all narrows down to one's educational goals and preferred studying methods.

Conclusion

Currently, educational institution websites have become essential sources of information for many people in the fast-changing world of education. VU and AIOU are leading learning institutions in Pakistan that offer tailored courses with maximum flexibility. These institutions have websites that serve the educational requirements of the non-traditional. This study examined the thematic components of the AIOU and VU websites and their relation to academic philosophy and programmes. In this way, it aimed to unveil what goes into constructing such websites and their ability to provide a good learning environment.

This research report aimed to explore and intensively scrutinize the institution's website on both VU and AIOU. The report provides a detailed picture of the strengths of each institution by looking at how they reveal their educational philosophy, display programs, offer resources, streamline admission procedures, supply test information, and support students via web portals. AIOU is known for its wide array of courses and huge student pool. In contrast, VU specializes in online education, catering to those who prefer e-learning and other alternative study modes. Ultimately, it depends on a person's education objectives, preference for studying, and intentions. Finally, either AIOU or VU is equally helpful in offering relevant materials and opportunities to its students.

Recommendations

Investing in AIOU's and VU's websites is essential to improve accessibility. This will facilitate easy access to learning materials and active participation by learners with disabilities. This entails complying strictly with the Web Content Accessibility Guidelines (WCAG). Collaboration is key in online education, which makes it pertinent for institutions to investigate incorporating real-time communication mechanisms such as live chat, video conferencing, and instant messaging. AIOU can also integrate some aspects of the modern online learning approach to improve it even more. The second issue is that material delivery and interactive features also need improvement at VU. This will be achieved by conducting user surveys that will be beneficial in identifying the users' wants and making adjustments accordingly.

Limitations

The study investigates the effect that the AIOU and VU websites have had on non-formal education in Pakistan. It is essential to note some limitations in this study. Such limitations included a small sample size with only two Universities, AIOU and VU. However, it is unclear whether these Universities fully represent all institutions within and beyond Pakistan. Secondly, all research data were derived only from internet scans and public material, excluding sound views of critical respondents like pupils and teachers (Aizpurua et al., 2016). Hence, the research is limited and might not offer an all-around knowledge of the abovementioned topics. However, since the study was carried out in a specific time frame, some changes to the website might be left out. Moreover, due to the fast-changing characteristics of web pages, the results can merely indicate a website at any moment. These limitations may have hampered the generalizability of this research.

However, more significant research involving other universities and data can produce more wide-ranging findings. Nevertheless, because of scarce resources, only a narrower way was possible. However, evaluating website content and design includes a threat of subjectivity. Objectivity can be compromised by the personal outlook of the researcher, which affects how data are interpreted and conclusions drawn. Therefore, different analysts can end up with diverged findings. This brings out the fact that when making sense of the results of this research, these aspects need to be considered.

Despite considering such limitations, the study revealed that AIOU and VU websites could serve as the basis for informal education in Pakistan, thus laying grounds for additional studies.

References

- Aizpurua, A., Harper, S., & Vigo, M. (2016). Exploring the relationship between web accessibility and user experience. *International Journal of Human-Computer Studies*, 91, 13-23.
- Alfayez, Z., & Al-Tawriy, H. (2021). Usability evaluation of educational websites: A case study of the University of Basrah website. *Solid State Technology*, 63, 9865-9886.
- Afzal, M. T., Ashfaq, M. S., & Mushtaq, M. S. (2024). Revolutionizing Distance Learning through Technology: A Case Study of Allama Iqbal Open University. *Pakistan Journal of Society, Education and Language (PJSEL)*, 10(2), 139-157.
- Chelloug, S. A., Ashfaq, H., Alsuhibany, S. A., Shorfuzzaman, M., Alsufyani, A., Jalal, A., & Park, J. (2023). Real Objects Understanding Using 3D Haptic Virtual Reality for E-Learning Education. *Computers, Materials & Continua*, 75(1).
- Giannoumis, G. A., Land, M., Beyene, W. M., & Blanck, P. (2017). Web accessibility and technology protection measures: Harmonizing the rights of persons with cognitive disabilities and copyright protections on the web. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 11(1).
- Kuppusamy, K. S., & Balaji, V. (2023). Evaluating web accessibility of educational institutions websites using a variable magnitude approach. *Universal Access in the Information Society*, 22(1), 241–250. <https://doi.org/10.1007/s10209-021-00812-4>
- Lawal, B. O., & Viatonu, O. (2017). A comparative study of students' access to and utilization of learning resources in selected public and private universities in Southwest, Nigeria. *Journal of Education and Practice*, 8(3), 71-79.
- Lažetić, P. (2019). Studying similarities and differences in higher education organizations based on their websites – comparative methodological approaches and research potential. *International Journal of Social Research Methodology*, 23, 75 - 90.
- Metcalfe, A. S., & Blanco, G. L. (2019). Visual research methods for the study of higher education organizations. In M. B. Paulsen & L. W. Perna (Eds.), *Higher education: Handbook of theory and research*, 34, 153–202. Cham: Springer International Publishing.
- Munoz, A. E., Li, X., Pehlivan, B. A., Harris Jr, F. C., & Dascalu, S. (2019, September). Comparison of University Course Search Interfaces. In *Proceedings of 28th International Conference*, 64, 1-10.
- Olaleye, S.A., Sanusi, I.T., Ukpabi, D. & Okunoye, A. (2018), "Evaluation of Nigeria universities websites quality: a comparative analysis", *Library Philosophy and Practice*, 2(3), 1-14.
- Singla, B.S. & Aggarwal, H. (2018), "Evaluation of Indian universities' websites in terms of information quality: Differences in the perspectives of end users' segments based on their sociodemographic characteristics", *International Journal of Business Information Systems*, 27(2), 135-176.
- Saputra, J., Satrianansyah, S., Wijaya, H. O. L., & Rahman, T. (2021). Analisis Kualitas Website Institut XYZ Menggunakan Metode Webqual dan IPA. *J-SAKTI (Jurnal Sains Komputer dan Informatika)*, 5(1), 318-327.
- Sodhar, I. N., Bhanbhro, H., & Amur, Z. H. (2019). "Evaluation of web accessibility of engineering university websites of Pakistan through online tools", *International Journal of Computer Science and Network Security*, 19(12), 85-90.
- Yesilada, Y., Brajnik, G., Vigo, M., & Harper, S. (2012). *Understanding web accessibility and its drivers*. In Proceedings of the international cross-disciplinary conference on web accessibility, 1-9.