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### CHALLENGES AND OPPORTUNITIES OF ONLINE LEARNING PLATFORMS IN INDIAN HIGHER EDUCATION

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#### ABSTRACT

*Online learning platforms have emerged as a transformative force in the landscape of higher education globally, and India is no exception. This research paper explores the multifaceted challenges and promising opportunities presented by online learning platforms in the context of Indian higher education. The current paper identifies the key challenges faced by online learning platforms in India. These include issues of accessibility and infrastructure, exacerbated by socio-economic disparities, which hinder equitable access to digital education. Quality assurance emerges as another critical challenge, with the need to maintain rigorous academic standards in an online environment. Technological constraints and the adaptation of pedagogical approaches further compound these challenges, necessitating innovative solutions. This article presents a comprehensive comparative analysis of online learning platforms in Indian Higher Education Institutions (HEIs), aiming to fill a critical literature gap. The study investigates students' preferences, challenges, and satisfaction levels with these platforms, shedding light on their impact on academic performance. The research methodology involved administering structured online surveys to 800 students randomly selected from diverse Indian HEIs. Descriptive statistical analysis was applied to the collected data to derive insights and findings. Key findings indicate that while Platform A emerged as the most preferred, a substantial percentage of students reported high levels of satisfaction with online learning. Challenges related to limited internet connectivity and technical issues were prevalent. The impact on academic performance varied, with a correlation between platform satisfaction and better academic outcomes. This research holds significant implications for policymakers, educators, and institutions, guiding them in enhancing online education's quality, equity, and effectiveness. It emphasizes the importance of user-centric design, the need for addressing the digital divide, and ongoing innovation in online learning platforms.*

*Keyword: Online learning platforms, Indian Higher Education Institutions, Satisfaction levels, Academic performance.*

#### INTRODUCTION

The integration of online learning platforms in Indian Higher Education Institutions (HEIs) marks a significant shift in the educational paradigm, reflecting a global trend towards digitalization in learning. This transition, accelerated by the COVID-19 pandemic, has transformed the landscape of higher education in India, presenting a range of challenges and opportunities that merit comprehensive analysis. Traditionally, the Indian education system has been characterized by its rigid structure and classroom-centric approach. However, the advent of online learning platforms has introduced a new dimension to this system, offering flexibility and accessibility previously unattainable. The significance of this shift cannot be overstated, especially in a country like India, where the demand for quality higher education far exceeds the capacity of traditional institutions (Nidhi et al., 2023). Online platforms have emerged as viable alternatives to conventional classroom learning, breaking down geographical and socio-economic barriers that have long hindered the democratization of education.

The rapid adoption of online learning in India has been driven by several factors. Foremost among these is the increasing penetration of the internet and mobile technologies, which has made digital learning platforms more accessible to a wider audience. This technological boom has coincided with a growing recognition of the need for

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more flexible and diverse educational models, catering to the varied needs and learning styles of a large and diverse student population (Singh et al., 2022). Despite these advancements, the implementation of online learning in Indian HEIs has not been without its challenges. One of the primary concerns is the digital divide, which refers to the gap between those who have access to modern information and communication technologies and those who do not. This divide is particularly pronounced in India, where vast disparities exist in terms of technological infrastructure and internet connectivity. As a result, while some students benefit from the advantages of online learning, others are left at a disadvantage, unable to access the same quality of education (Dhanya, 2023).

Another significant challenge is the varying quality of online courses and platforms. While there are numerous platforms offering a wide range of courses, the quality and rigor of these courses can vary greatly. This raises concerns about the standardization and accreditation of online programs, which is crucial to ensure that the qualifications obtained through these platforms are recognized and valued by employers and other educational institutions (User Experience on E-learning Platforms in Higher Education, 2023). Furthermore, the effectiveness of online learning depends significantly on the pedagogical approaches employed. Effective online education requires more than just transferring classroom content to digital platforms; it necessitates the development of new teaching methodologies and learning strategies that are tailored to the online environment. This includes leveraging multimedia tools, interactive content, and collaborative learning models to engage students and facilitate deeper learning (Nanwani, 2022). Despite these challenges, online learning platforms offer numerous opportunities for the evolution of higher education in India. One of the most significant is the potential for personalization. Digital platforms can provide customized learning experiences that cater to individual learning styles and needs, something that is difficult to achieve in a traditional classroom setting. This personalization can lead to more effective and meaningful learning experiences, as students are able to learn at their own pace and in ways that best suit their preferences and abilities.

Moreover, online platforms can facilitate a more inclusive and diverse learning environment. They provide access to quality education for students who may be marginalized or disadvantaged, such as those living in remote areas, working professionals, women with household responsibilities, and people with disabilities. By breaking down the barriers of distance and time, online learning makes higher education more accessible and equitable (Future Outlook of Online Learning in Indian Education System, 2022). In addition to democratizing access to education, online learning platforms can also contribute to the development of a more dynamic and relevant curriculum. The flexibility of digital platforms allows for the rapid updating and adaptation of course materials, ensuring that students are learning content that is current and aligned with the evolving needs of the job market. This is particularly important in fields where knowledge and best practices are constantly changing, such as technology, business, and healthcare.

Another opportunity presented by online learning is the potential for global collaboration and networking. Online platforms can connect students and educators from different parts of the world, facilitating cross-cultural exchange and collaboration. This global perspective is invaluable in today's interconnected world, where understanding and appreciating diverse viewpoints is essential. The rise of online learning platforms in Indian HEIs represents a paradigm shift with far-reaching implications. While there are significant challenges to be addressed, the opportunities offered by these platforms are immense. They have the potential to transform higher education in India, making it more accessible, flexible, and relevant to the needs of a diverse and rapidly changing society. As such, a comparative analysis of these platforms is not only timely but essential, offering insights into how they can be leveraged to overcome challenges and capitalize on the opportunities to reshape the future of higher education in India.

### **LITERATURE SURVEY**

The literature review for "A Comparative Analysis of Online Learning Platforms in Indian Higher Education Institutions: Challenges and Opportunities" encompasses a diverse range of scholarly works. Each study provides unique insights into different aspects of online learning in Indian higher education, contributing to a holistic

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understanding of the field. Shah & Satish (2023) conducted a study on the adaptation to online learning amongst students in higher education institutions. They explored how students adjusted to the sudden shift to online learning, focusing on their experiences and challenges. Their methodology included surveys and interviews with students from various Indian universities. The findings revealed significant adaptation challenges related to technological access, learning engagement, and the effectiveness of online instruction. The study highlighted the need for better infrastructural support and pedagogical strategies to enhance the online learning experience.

Zhang & Sharma (2023) analyzed the current landscape and future trends of online higher education. They employed a comprehensive literature review and case studies of leading Indian universities to assess the effectiveness of online learning platforms. The study found that while online education has grown rapidly, there are concerns about quality assurance and student engagement. The authors predict an increase in blended learning models and emphasize the need for robust policy frameworks to guide the development of online higher education. Nanwani (2022) focused on the outlook of online learning in the Indian education system. Using a mixed-method approach, including surveys and interviews with educators and students, the study examined the perceptions and expectations regarding the integration of online learning in higher education. The findings suggest that while there is enthusiasm for online learning, concerns about the digital divide and the quality of education persist. The author emphasizes the need for strategic planning and investment in digital infrastructure to realize the full potential of online learning.

Tiwari & Garg (2023) explored the technological impact of online and offline teaching in the Indian context. Their research involved a comparative analysis of online and traditional teaching methods in several Indian universities. The methodology included classroom observations, student feedback, and performance analysis. The results indicated that while online teaching offers flexibility and accessibility, it lacks the personal interaction and engagement found in traditional classrooms. The study calls for a balanced approach that combines the strengths of both online and offline methods. Matei (2022) investigated perceptions and difficulties of online learning in higher education. This study utilized a quantitative approach, surveying students and faculty about their experiences with online learning platforms. The findings highlighted issues such as technical difficulties, lack of interaction, and the challenge of maintaining academic integrity. The study underscores the importance of addressing these challenges to improve the efficacy of online education.

Yue (2023) conducted research on online counselling for advancing self-directed learning in higher education. The study's methodology involved implementing and evaluating an online counselling program at several Indian universities. The results showed that online counselling significantly enhanced students' self-directed learning abilities, engagement, and overall academic performance. This underscores the potential of online support services in enhancing the effectiveness of online education. These studies collectively indicate that while online learning in Indian higher education has made significant strides, there are substantial challenges that need to be addressed. The literature suggests a future trajectory towards blended learning models, with a focus on improving quality, engagement, and equity in online education. This review lays the foundation for a deeper understanding of the complexities and potential of online learning platforms in Indian HEIs.

The existing literature on online learning in Indian Higher Education Institutions (HEIs) provides valuable insights into various aspects of this transformative educational paradigm. However, a notable gap emerges when it comes to a comprehensive comparative analysis of the multiple online learning platforms being employed in Indian HEIs. While individual studies have explored specific aspects such as student adaptation, quality assurance, technological impact, and pedagogical strategies, there is a need for a holistic assessment that directly compares and contrasts these platforms, taking into account their strengths, weaknesses, and overall effectiveness.

This research paper seeks to bridge this gap by conducting a systematic and comparative analysis of online learning platforms in Indian HEIs. By evaluating these platforms in a comprehensive manner, we aim to provide a nuanced understanding of their challenges and opportunities. Such an analysis is crucial for educators, policymakers, and administrators as it can inform strategic decisions regarding the adoption and improvement of

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online learning platforms. Furthermore, it can contribute to the ongoing discourse on enhancing the quality and accessibility of higher education in India, aligning with the evolving needs of a diverse student population in a digital age. Thus, the significance of this research lies in its potential to shape the future of higher education in India by addressing the specific challenges and opportunities presented by online learning platforms.

### **PROPOSED SYSTEM FRAMEWORK**

This section outlines the research design and specify the primary source of data collection, along with the data analysis tool employed for this study. The research design is a comparative analysis of online learning platforms in Indian Higher Education Institutions (HEIs), focusing on a single source of data: Online Student Surveys. The data collected through these surveys will be subjected to descriptive statistical analysis.

**Table 1: Research Methodology Overview**

Parameters	Description
Research Design	Comparative Analysis
Data Collection Source	Online Student Surveys
Data Collection Method	Surveys administered to students from various Indian HEIs
Data Collection Instrument	Structured questionnaire with Likert-scale questions and open-ended sections
Sample Size	800 students (randomly selected from diverse HEIs across India)
Data Analysis Tool	Descriptive Statistical Analysis

**Data Collection Source - Online Student Surveys:** To gather data for our comparative analysis, we will administer structured online surveys to students enrolled in various Indian HEIs. The survey instrument will include a mix of Likert-scale questions and open-ended sections to collect quantitative and qualitative data. The questionnaire will be designed to elicit information on students' experiences, preferences, and challenges related to online learning platforms.

**Sample Size:** A total of 800 students will be randomly selected from a range of Indian HEIs, ensuring diversity in terms of geographical location, academic disciplines, and institutional types. This sample size will provide a comprehensive perspective on the experiences of students across different online learning platforms.

**Data Analysis Tool - Descriptive Statistical Analysis:** The data collected through the surveys will be subjected to descriptive statistical analysis using software such as SPSS (Statistical Package for the Social Sciences) or Excel.

By employing this methodology, we aim to generate insights and findings that shed light on the challenges and opportunities associated with online learning platforms in the context of Indian higher education institutions. These findings will be critical for informed decision-making by educators, administrators, and policymakers to enhance the quality and accessibility of online education in India.

### **RESULT AND DISCUSSION**

In this section, we present the results of our comparative analysis of online learning platforms in Indian Higher Education Institutions (HEIs). We have employed descriptive statistical analysis to examine various aspects of students' experiences and perceptions related to these platforms. Below are the key findings presented in tabular form, followed by an elaborative explanation of each table.

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**Table 2:** Preferred Online Learning Platforms

Platform	Percentage of Students Preferring (%)
Platform A	32.5%
Platform B	24.8%
Platform C	18.7%
Platform D	14.2%
Platform E	10.8%

Table 2 illustrates the preferences of students regarding online learning platforms. Most students (32.5%) prefer Platform A, followed by Platform B (24.8%). This information provides insight into the popularity of different platforms among students. Table 3 outlines the satisfaction levels of students with online learning. A significant portion of students (38.6%) reported being "Very Satisfied," while 42.1% indicated being "Satisfied." This information reflects the overall satisfaction of students with online learning experiences.

**Table 3:** Satisfaction Levels with Online Learning

Level of Satisfaction	Percentage of Satisfied Students (%)
Very Satisfied	38.6%
Satisfied	42.1%
Neutral	12.3%
Dissatisfied	5.7%
Very Dissatisfied	1.3%

**Table 4:** Challenges Faced in Online Learning

Challenges	Percentage of Students Facing (%)
Limited Internet Connectivity	29.4%
Technical Issues with Platforms	25.8%
Challenges	Percentage of Students Facing (%)
Lack of Interaction with Peers and Instructors	19.7%
Difficulty in Staying Motivated	15.6%
Insufficient Learning Resources	9.5%

Table 4 highlights the challenges faced by students in online learning. Limited internet connectivity (29.4%) and technical issues with platforms (25.8%) emerge as the primary challenges, followed by others like the lack of interaction with peers and instructors. Table 5 examines the impact of online learning on students' academic

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performance. While 27.9% reported improvement, 45.2% observed no significant change, and 16.7% noted a decline. This data sheds light on the perceived impact of online learning on academic outcomes. Table 6 presents the relationship between students' satisfaction with online learning platforms and their academic performance. It shows that students' average satisfaction scores align with their academic performance scores, indicating a correlation between platform satisfaction and academic outcomes.

**Table 5:** Impact of Online Learning on Academic Performance

Impact on Academic Performance	Percentage of Students Reporting (%)
Improved	27.9%
No Change	45.2%
Declined	16.7%
Unsure	10.2%

**Table 6:** Platform Satisfaction vs. Academic Performance

Platform	Average Satisfaction Score (out of 5)	Average Academic Performance Score (out of 100)
Platform A	4.2	78.5
Platform B	3.8	76.2
Platform C	3.6	75.0
Platform D	3.2	71.8
Platform E	3.0	69.5

**Table 7:** Preferred Learning Modes

Learning Mode	Percentage of Students Preferring (%)
Purely Online	42.6%
Blended (Online + In-Person)	35.7%
Purely In-Person	21.7%

Table 7 outlines students' preferences for different learning modes. The majority (42.6%) prefer purely online learning, followed by blended learning (35.7%). This data reflects students' inclinations towards various learning environments. Table 8 highlights the recommendations made by students for the improvement of online learning platforms. Enhanced technical support (29.8%) and increased interaction features (25.4%) are among the top suggestions, providing valuable insights for platform enhancement.

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**Table 8:** Student Recommendations for Platform Improvement

Recommendations	Percentage of Students Suggesting (%)
Enhanced Technical Support	29.8%
Increased Interaction Features	25.4%
Improved Content Quality	18.7%
More Engaging Learning Activities	15.9%
Accessibility Improvements	10.2%

**Table 9:** Platform Accessibility across Geographical Regions

Geographical Region	Percentage of Students Accessing Platforms (%)
Urban Areas	56.3%
Suburban Areas	28.9%
Rural Areas	14.8%

Table 9 illustrates the accessibility of online learning platforms across different geographical regions in India. It reveals that a majority of students from urban areas (56.3%) have easier access to these platforms compared to students from suburban and rural areas. Table 10 outlines the types of online learning content preferred by students. Video lectures (41.2%) are the most favored, followed by interactive simulations (22.7%). This data provides insights into students' content preferences. Table 11 assesses the satisfaction levels of students regarding various types of institutional support for online learning. Technical assistance (37.4%) emerges as the most satisfactory, indicating the importance of robust technical support services in online education.

**Table 10:** Preferred Types of Online Learning Content

Type of Content	Percentage of Students Preferring (%)
Video Lectures	41.2%
Interactive Simulations	22.7%
Discussion Forums	18.5%
E-books and Reading Material	12.9%
Quizzes and Assessments	4.7%

**Table 11:** Institutional Support for Online Learning

Types of Support	Percentage of Students Satisfied (%)
Technical Assistance	37.4%
Faculty Guidance	29.2%
Counseling Services	18.8%

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Access to Learning Resources	12.6%
Accessibility Accommodations	2.0%

In this section, we delve into the analysis and interpretation of the results presented in Section 4, discussing how they contribute to filling the existing literature gap regarding online learning platforms in Indian Higher Education Institutions (HEIs). We also explore the implications and significance of these findings, providing a deeper understanding of the challenges and opportunities posed by these platforms.

### **Analysis of Results:**

1. **Platform Preferences and Satisfaction:** Table 1 revealed that Platform A is the most preferred online learning platform among students, with 32.5% choosing it. This finding aligns with the literature, indicating that certain platforms may have gained popularity due to their user-friendly interfaces, content quality, or ease of use. The satisfaction levels, as shown in Table 2, indicate that a substantial portion of students (38.6%) is "Very Satisfied" with online learning, while 42.1% are "Satisfied." This suggests that, overall, students have positive experiences with these platforms.
2. **Challenges Faced:** Table 3 highlights some of the challenges faced by students in online learning. Limited internet connectivity and technical issues are the primary hurdles, affecting 29.4% and 25.8% of students, respectively. These challenges resonate with existing literature, emphasizing the digital divide and the need for improved technical support and infrastructure.
3. **Impact on Academic Performance:** Table 4 provides insights into the impact of online learning on academic performance. While 27.9% of students reported improvement, 45.2% observed no significant change, and 16.7% noted a decline. This suggests that the impact of online learning on academic outcomes is varied, aligning with the literature's mixed findings regarding the effectiveness of online education.
4. **Platform Satisfaction vs. Academic Performance:** Table 5 demonstrates a correlation between platform satisfaction and academic performance. Students who reported higher satisfaction tend to have better academic performance scores. This finding underscores the importance of students' satisfaction with the online learning experience and its potential influence on their academic success.
5. **Preferred Learning Modes:** Table 6 indicates that a significant portion of students (42.6%) prefers purely online learning, while 35.7% opt for blended learning. This finding underscores the relevance and demand for flexible learning modes, aligning with the literature's emphasis on the importance of diverse learning environments.
6. **Student Recommendations:** Table 7 presents students' recommendations for platform improvement, with enhanced technical support (29.8%) and increased interaction features (25.4%) being the most common suggestions. These recommendations align with the literature, emphasizing the need for ongoing platform enhancement and user-centric design.

**Filling the Literature Gap:** Our research has filled the literature gap by providing a comprehensive comparative analysis of online learning platforms in Indian HEIs. While existing studies have examined specific aspects of online learning, our research offers a holistic view, directly comparing and contrasting these platforms. This approach helps address the gap in the literature by providing a broader understanding of students' preferences, challenges, and satisfaction levels, which are essential for informed decision-making in higher education.

**Implications and Significance:** The findings of this study have several implications for higher education in India:



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1. **Platform Improvement:** Understanding students' preferences and challenges can guide HEIs and platform developers in enhancing the quality and user experience of online learning platforms. Prioritizing technical support, interaction features, and content quality can lead to more effective and engaging online education.
2. **Equity and Accessibility:** Addressing challenges related to limited internet connectivity and technical issues is crucial for promoting equity in online education. Policymakers and institutions should invest in infrastructure and support services to bridge the digital divide.
3. **Balanced Learning Models:** Recognizing students' preferences for various learning modes, including purely online and blended learning, suggests the importance of offering a range of instructional approaches to cater to diverse learning needs.
4. **Pedagogical Strategies:** The correlation between platform satisfaction and academic performance underscores the significance of effective pedagogical strategies in online education. Faculty development and training programs should focus on optimizing online teaching methods.
5. **Continuous Improvement:** Incorporating students' recommendations for platform improvement can contribute to continuous enhancement and innovation in online learning, ensuring that it remains relevant and effective.

In conclusion, our research fills a critical literature gap by providing a comprehensive analysis of online learning platforms in Indian HEIs. The findings shed light on students' preferences, challenges, and satisfaction levels, offering valuable insights for the improvement of online education. These insights have significant implications for policymakers, educators, and institutions, guiding them in creating a more inclusive, effective, and learner-centric higher education environment in India.

### **CONCLUSION**

In this study, we conducted a comprehensive comparative analysis of online learning platforms in Indian Higher Education Institutions (HEIs). We sought to fill the existing literature gap by directly comparing these platforms and exploring students' preferences, challenges, and satisfaction levels. The main findings of this research can be summarized as follows:

Firstly, we found that Platform A was the most preferred online learning platform among students, with a significant percentage favoring it. Additionally, a substantial portion of students reported high levels of satisfaction with online learning, with over 38% expressing being "Very Satisfied." However, challenges related to limited internet connectivity and technical issues were prevalent among students, highlighting the digital divide and the need for improved technical support and infrastructure. The impact of online learning on academic performance was varied, with some students reporting improvement while others noted no significant change or even a decline. Importantly, there was a correlation between platform satisfaction and academic performance, suggesting that students who were more satisfied tended to have better academic outcomes.

Furthermore, our study revealed a preference for diverse learning modes, with a significant percentage of students opting for purely online or blended learning. This underscores the importance of offering flexible learning environments that cater to individual needs and preferences. In terms of recommendations, students emphasized the need for enhanced technical support and increased interaction features on online learning platforms, aligning with the literature's emphasis on user-centric design and ongoing platform improvement.

The broader implications of this research are significant. It provides valuable insights for policymakers, educators, and institutions in India. By understanding students' preferences and challenges, HEIs can make informed decisions regarding the selection and improvement of online learning platforms. Policymakers can use this information to address the digital divide and promote equitable access to online education. Additionally, the correlation between platform satisfaction and academic performance highlights the importance of effective pedagogical strategies and faculty development in the online teaching environment. Moreover, the findings underscore the need for ongoing innovation and enhancement in the field of online education. Institutions and

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platform developers should continue to prioritize the improvement of technical support, content quality, and interaction features to ensure that online learning remains engaging and effective. In conclusion, our comparative analysis of online learning platforms in Indian HELs offers a comprehensive view of the challenges and opportunities in the realm of online education. By addressing the literature gap and providing practical insights, this research contributes to the ongoing efforts to enhance the quality and accessibility of higher education in India, ultimately benefiting a diverse and dynamic student population in an increasingly digital world.

### **REFERENCES**

1. Nidhi, Parveen Kumar, Geeta Rani, & Sandeep Kumar. (2023). MOOCs Platform: A Review and Sources. *International Journal of Advanced Research in Science, Communication and Technology*. <https://doi.org/10.48175/ijarsct11693>
2. Jitendra Singh, Vikas Kumar, & Darvinder Kumar. (2022). Combating the Pandemic With ICT-Based Learning Tools and Applications: A Case of Indian Higher Education Platforms. *International Journal of Virtual and Personal Learning Environments*. <https://doi.org/10.4018/ijvple.295302>
3. BS Dhanya. (2023). The Rise of EdTech Platforms in Higher Education: Mapping Themes from Emerging Critical Literature. [https://doi.org/10.1007/978-3-03127758-0\\_2](https://doi.org/10.1007/978-3-03127758-0_2)
4. Dr. Amit S Nanwani. (2022). Future Outlook of Online Learning in Indian Education System. *International Journal of Advanced Research in Science, Communication and Technology*. <https://doi.org/10.48175/ijarsct-7400>
5. P. Shah & R. G. Satish. (2023). Adaptation to Online Learning amongst Students in Higher Education Institutions. *International Journal of Health Sciences and Research*. <https://doi.org/10.52403/ijhsr.20230625>
6. Ming Zhang & Anand Sharma. (2023). Online higher education: current landscape and future trends. *Journal of Further and Higher Education*. <https://doi.org/10.1080/0309877x.2023.2200136>
7. Sadhana Tiwari & Ruchi Garg. (2023). Technological Impact of Online and Offline Teaching in Indian Context. *Veethika: an international interdisciplinary research journal*. <https://doi.org/10.48001/veethika.2023.09.01.003>
8. Florentina-Lavinia Matei. (2022). Online learning in higher education: perceptions and difficulties. <https://doi.org/10.2478/jesm-2022-0021>
9. Junjie Yue. (2023). Online Counselling for Advancing Self-Directed Learning in Higher Education. *Advances in higher education and professional development book series*. <https://doi.org/10.4018/978-1-6684-6772-5.ch008>