

**Opportunities in ODL Mode of Education: University-Level Students'
Perspectives**

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Abstract

This study investigates how ODL has significantly shaped the educational paradigm and enriched students' learning experiences concentrating specifically on students affiliated with Tribhuvan University. This study adopted a quantitative research approach, leveraging a cross-sectional survey design to capture comprehensive student motivation insights. The data collection involved structured Google Forms questionnaires, ensuring efficiency and reliability in gathering diverse perspectives. The research employed a census method to encompass a representative sample of respondents, enhancing the generalizability of findings. The total number of respondents was 145, taken from all students enrolled in the ODL mode of education, Mahendra Ratna campus, Tahachal, and Central Department of Education, Kirtipur. Descriptive statistics, encompassing mean and standard deviation, were computed for each Likert scale item, offering to examine the respondents' responses. One sample t-test and one-way ANOVA, were used to show the status of opportunities offered by respondents and significant differences between various demographic variables. The study's survey results reveal positive perceptions among students regarding the opportunities presented by ODL, emphasizing convenience, flexibility, and improved IT skills. The study also explores the statistically significant differences observed in perceived opportunities based on gender. The study underscores the positive impact of ODL on students' educational experiences and highlights its potential to reshape the future of learning in an interconnected world.

Keywords: University level students, cross-sectional study, opportunities, Open and Distance Learning (ODL), quantitative method

Introduction

The open and distance learning (ODL) modality has prefigured a transformative era in higher education, redefining the educational landscape and presenting many empowering opportunities for university-level students. For university-level students, the opportunities provided by the ODL modality of instruction are many and revolutionary. ODL has effectively transformed the educational environment, offering flexibility and various learning opportunities and encouraging personal development and global citizenship (Broadband Commission UNESCO, 2020; Das & Bag, 2020). ODL has the incomparable potential to democratize education and give learners control as long as technology keeps developing and society adapts to new learning styles (Jesson et al., 2018). The conventional educational environment is going through a significant transition in an era marked by fast technological innovation and the democratization of knowledge. The growth of open and distance learning (ODL) as a method of education is one of the most critical aspects of this progression. ODL was formerly seen as a substitute for people who couldn't attend conventional brick-and-mortar universities, but it has now moved past its early constraints to become a vibrant and promising option for university-level students looking for a variety of learning options. This study sets out on a quest to examine all of the opportunities that students in higher education have access to thanks to the ODL form of instruction.

Review of Literatures

Learning Dynamics Undergoing a Paradigm Shift

Beyond physical borders and time restraints, the ODL style of classrooms has organized a paradigm change in learning dynamics. Students are no longer constrained by the requirements of being there physically as colleges increasingly accept this option. Due to ODL's asynchronous design, learners may go through the course content quickly, meeting the different demands of a worldwide student body (Bordoloi et al., 2021). ODL supports various objectives, whether those of a working professional wishing to further their skills, a stay-at-home parent seeking personal development or an aspiring scholar hoping to increase their knowledge (Kihzoa et al., 2016; Rogers, 2000).

Diverse Opportunities for Learning

As varied as the disciplines of study are, so are the options provided by the ODL instruction. Students may access a wide range of courses from universities worldwide using this mode, erasing the conventional obstacles of distance and cultural disparities (Kour, 2013). An American student can study sustainable agriculture at an African institution, while a student from South Asia can enroll in a course on art history at a prestigious European university. This broadens views and encourages teamwork and cross-cultural understanding, two abilities crucial in today's linked world (Mitchell & O'Rourke, 2008; Venter, 2021).

Flexibility: Empowering the Modern Learner

One of the primary advantages of the ODL method of courses is flexibility. The capacity to smoothly incorporate schooling into one's present responsibilities is crucial at a time when multitasking and adaptability are highly valued. Higher education

students frequently balance various obligations, including part-time employment, internships, and extracurricular activities (Ndunagu et al., 2023). ODL gives these contemporary learners more control over their learning schedules, helping them to achieve a healthy balance between their academic and extracurricular activities (Ojo & Olakulehin, 2006; Sallehuddin et al., 2023).

Lifelong Learning and Professional Development

Education is no longer considered a process that culminates in a degree. Today, continuing education is necessary for both personal development and job success. By providing short-term courses, specialized seminars, and certificates that improve employability and broaden intimate knowledge, the ODL mode smoothly meets this requirement (Dey & Panda; Oladipo & Okiki, 2020). ODL is a desirable alternative for ongoing professional development since it allows professionals pursuing career growth to pick up new skills without interfering with their work (Misra, 2012).

Personalized Learning Experience

Individual learning styles and speeds are sometimes difficult for traditional classes to accommodate. ODL, on the other hand, uses technology to offer a more customized learning experience. Students will successfully understand ideas thanks to adaptive learning algorithms and engaging multimedia material that suits different learning preferences (Roberts, 2018; Tung, 2013). ODL systems also frequently include chances for peer-to-peer interaction, virtual laboratories, and simulations, strengthening the experiential component of learning (Cheng; Kop, 2011; Powell et al., 2020).

Overcoming Socioeconomic Barriers

Although financial differences have hampered this ambition, education has long been praised as the great equalizer. By easing the cost burden of visiting physical institutions, the ODL instruction style can potentially close this gap. The democratization of education allows students from all backgrounds to have access to high-quality learning resources and experiences that were previously only available to the wealthy few. This is made possible through open educational resources, online libraries, and inexpensive course substitutes (Aremu; Nayak et al., 2020; Ojo & Olakulehin, 2006).

Developing Self-Control and Time Management

Although ODL is flexible, students must exercise more self-control and time management because of this. A higher level of responsibility is required for participating in online conversations, reading course materials, and completing deadlines. These crucial life skills are developed through ODL and continue beyond the classroom, preparing students for the challenges of the working world (Adewoyin & Ebabhi, 2022; Ahmad et al., 2023; Au et al., 2019).

Open and Distance Learning (ODL) has emerged as a transformative mode of education within Tribhuvan University, Nepal's oldest and largest academic institution (Devkota, 2021). This innovative approach to learning has opened new avenues for students who seek higher education while overcoming geographical barriers, time

constraints, and other limitations. Through the ODL mode, Tribhuvan University has successfully extended its educational reach to a diverse array of learners, enriching their lives and contributing to the nation's human resource development. Flexibility is at the heart of the ODL mode of education at Tribhuvan University. This mode recognizes the individual commitments and responsibilities that learners may have, whether they are working professionals, parents, or simply unable to attend traditional classes. By providing a flexible schedule and learning materials that can be accessed remotely, the university ensures that education becomes more inclusive and adaptable to students' lifestyles. Tribhuvan University's ODL system leverages modern technology to deliver its courses. A robust online platform allows students to access study materials, lectures, assignments, and assessments, fostering a virtual classroom experience. This technology-driven approach supports learning and enhances digital literacy, a growing important skill in today's interconnected world. The ODL mode promotes self-directed learning. It empowers students to take control of their education, allowing them to set their own pace and delve into subjects that pique their interest. This autonomy nurtures critical thinking, problem-solving, and time management skills – essential for academic and real-world success.

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Moreover, the ODL mode encourages peer interaction and collaboration. Virtual discussion forums, video conferences, and collaborative projects bring together students from diverse backgrounds and locations, fostering a rich exchange of ideas. This interaction transcends physical boundaries and enhances the learning experience, allowing students to benefit from each other's perspectives and experiences. Tribhuvan University's commitment to maintaining the quality and integrity of education remains unwavering in the ODL mode (Maunonen-Eskelinen & Leppänen, 2015). Rigorous evaluation mechanisms, continuous assessment, and regular feedback channels uphold academic standards. Faculty members, equipped with the skills to facilitate online learning effectively, guide students through their educational journey. Challenges do exist within the ODL mode. Some hurdles students may encounter are technical difficulties, the need for consistent internet access, and adapting to a more independent learning style. However, Tribhuvan University addresses these challenges by providing technical support, clear guidelines, and resources to help students navigate their studies smoothly.

The ODL education mode at Tribhuvan University is a testament to the institution's commitment to making education accessible, adaptable, and innovative (Gautam, 2021; Tribhuvan University, 2019). The university has revolutionized higher education by embracing technology and a learner-centric approach, breaking down barriers and reaching previously underserved students. This mode imparts academic knowledge and nurtures life skills, positioning students for success in an ever-evolving global landscape. Tribhuvan University's ODL mode is a beacon of learning, shining brightly as it guides students through the realms of knowledge, regardless of their location or circumstances.

ODL is viewed as a revolutionary force that can revolutionize higher education in a world where education is moving at an unheard-of rate, driven by technological developments and shifting learning paradigms. This study tries to brighten how ODL transforms university-level students' access to, engagement with, and value extraction from their academic pursuits by thoroughly analyzing its advantages and repercussions. The objective of this article is to comprehensively investigate the opportunities that the Open and Distance Learning (ODL) mode of classes offers to university-level students.

Methods and Materials of the Study

The study investigating the opportunities gained by university-level students through the Open and Distance Learning (ODL) mode of classes employs a structured research approach that includes primary data collection, survey instruments, and rigorous validation and reliability measures. A structured research approach is a systematic and organized research method involving a well-defined set of steps, guidelines, and methodologies to investigate a specific topic or question. This approach is essential for this study because it helps ensure the research findings' validity, reliability, and credibility. Focusing specifically on students from the Central Department of Education and Mahendra Ratna Campus, Tahachal, the study aims to provide valuable insights into the opportunities of ODL for higher education. The respondents were not restricted based on their socio-demographic characteristics, such as gender, age, ethnicity, or country of origin. The study used a cross-sectional quantitative survey as its sole method of data collection to gather primary data (Kothari, 2004; Kumar, 2018). A survey is conducted using Google Forms, a widely accessible online platform. This method ensures efficient data collection from a large sample of ODL students. The survey utilizes Likert-scale questionnaires, a well-established tool in social research. Participants are asked to rate their perceptions of various opportunities provided by the ODL mode of classes, ranging from accessibility and flexibility to personalized learning experiences and career development prospects.

The data were collected in May 2023. The validity of the survey instrument is ensured through expert consultation. The questions are formulated and refined based on feedback from education professionals, ODL experts, and faculty members from relevant fields. This iterative process guarantees that the survey items accurately measure the intended constructs, enhancing the credibility of the research findings. To establish the reliability of the survey, the study employs Cronbach's alpha coefficient (De Barros Ahrens et al., 2020; Dźwigoł, 2020; Khadka et al., 2022). This statistical measure assesses the internal consistency of the survey items. A high Cronbach's alpha value, i.e., 8.966, indicates that the questions within the survey reliably measure the same construct. By calculating this coefficient, the study ensures that the responses collected are dependable and consistent, enhancing the overall quality of the research outcomes. By collecting responses from a substantial sample of ODL students within the Central Department of Education and Mahendra Ratna Campus, this study aims to comprehensively understand the opportunities the ODL mode of classes presents for university-level students. The integration of Likert-scale questionnaires ensures

nuanced insights into students' perceptions, while the validation and reliability measures attest to the robustness of the research methodology. The collected data underwent thorough analysis utilizing the SPSS 26 version. Descriptive statistics, encompassing mean and standard deviation, were computed for each Likert scale item, offering to examine the respondents' responses. Moreover, inferential statistics, including one sample t-test and one-way ANOVA, were used to show the status of opportunities shown by respondents and significant differences between various demographic variables.

Result of the Study

Opportunities of ODL Mode Educational Environment

The learning environment in the ODL mode offers a wide range of possibilities that completely alter how education is provided and received. ODL makes it possible for students from all backgrounds to participate in lifelong learning and gain the skills they need to succeed in a world that is constantly changing by embracing technology, flexibility, and inclusivity

Table 1

Opportunity Status in an ODL-Mode Learning Environment

Statements	Mean	SD	t	p-value
The ODL courses allow me to engage in cooperative learning groups while integrating material, method, and context.	3.93	0.71	15.71	0.00*
I feel comfortable taking online classes because I can do them at home.	4.37	0.63	26.06	0.00*
I've developed time management skills.	4.00	0.71	17.03	0.00*
Spend less money	3.32	1.07	3.64	0.00*
Spend less time.	3.88	0.85	12.45	0.00*
I can improve my IT skills	4.06	0.69	18.55	0.00*
The faculty's comments on the exams were valuable and timely.	3.73	0.82	10.75	0.00*
The evaluation procedures were practical and impartial	3.86	0.75	13.82	0.00*
Meetings and conversations are more accessible due to communication.	3.94	0.66	17.15	0.00*
More interaction between the professor and the students	3.74	0.90	9.93	0.00*
I feel at ease and less stressed about studying.	3.59	0.92	7.70	0.00*
It allows me to pursue higher education while maintaining a full-time job.	4.29	0.76	20.35	0.00*

Source: Field Survey, 2080

Table 1. presents the results of a survey conducted among Open and Distance Learning (ODL) students at Tribhuvan University, focusing on their responses to various statements measured on a 5-point Likert scale. The Likert scale is a commonly

used tool for appraising respondents' perceptions, where participants rate their level of agreement or disagreement with a set of statements. In this case, the respondents were asked to rate their agreement with certain statements related to the opportunities of the ODL mode of the educational environment. The "Mean" column represents the average score given by the respondents for each statement on the 5-point Likert scale. The mean score provides an overall indication of how positively or negatively the students perceive each aspect. In this case, the mean scores range from 3.32 to 4.37. The "SD" column shows the standard deviation of the scores for each statement. Standard deviation measures the dispersion or spread of the scores around the mean. A higher standard deviation indicates that the responses were more varied, while a lower standard deviation suggests that the responses were more consistent. The "t" value represents the t-statistic, which determines if the means of two groups (or, in this case, the means of the responses and some reference value) are significantly different. It's often used in hypothesis testing. The "p-value" indicates the level of statistical significance. A p-value of 0.00* (often represented as "<0.005") suggests that the results are highly statistically significant. In other words, the differences observed in the means are unlikely to have occurred by random chance. In this case, the students generally have positive attitudes toward their ODL educational experience. The mean scores are relatively high for most statements, indicating agreement with the positive aspects of ODL. The low p-values suggest that these mean differences are not likely due to chance.

For instance, the highest mean scores are for statements like "I feel comfortable taking online classes because I can do them at home" and "It allows me to pursue higher education while maintaining a full-time job." These statements indicate that the students find convenience and flexibility in the ODL mode. On the other hand, statements like "Spend less money" and "Spend less time" have lower mean scores, suggesting that the students may not strongly agree with the idea that ODL necessarily leads to spending less money or time.

Table 2

The significant result of opportunities of ODL mode educational environment with socio-demographic variables

Variable	Category	Frequency	Mean	S.D.	p-value
Gender	Female	72	3.7870	0.41582	0.004*
	Male	73	3.9977	0.44660	
Caste/ Ethnicity	Brahmin/Chhetri	89	3.8858	0.46251	0.685
	Dalit	7	3.9048	0.49868	
	Janajati	44	3.9205	0.38878	
	Madheshi	4	3.8958	0.57080	
Provinces	Other	1	3.2500		0,458
	Koshi	23	3.8225	0.44189	
	Madhes	7	4.0952	0.52137	
	Bagmati	47	3.8191	0.43417	
	Gandaki	24	3.9375	0.44590	
	Lumbani	31	3.9220	0.42922	

	Karnali	2	4.2917	0.53033	
	Sudurpaschim	11	3.9773	0.46262	
Religion	Buddhist	12	3.9444	0.40097	
	Christian	10	3.7250	0.22923	
	Hindu	116	3.9073	0.46049	
	Kirat	6	3.9306	0.35125	
	Muslim	1	3.0833		0.278
Study Programme	M.Ed. in English Education	17	3.8971	0.51246	
	M.Ed. in Health Education	3	3.9167	0.28868	
	M.Ed. in Nepali Education	21	3.9484	0.36655	0.237
	M.Ed. in Science	17	4.1029	0.28187	
	Master in Social Study Education (MSSED)	87	3.8372	0.46795	
Device Uses	Desktop computer	3	3.9167	0.28868	
	Laptop	47	3.8493	0.48362	
	Laptop; Smart Phone	30	3.8250	0.53487	0.488
	Smart Phone	65	3.9551	0.36535	
	N0	31	3.9167	0.45287	
Job	Yes	114	3.8867	0.44195	0.74
	No	31	3.8468	0.49493	
Training	Yes	114	3.9057	0.42917	0.531
	No	31	3.8931	0.44289	

Source: Field Survey, 2080

Table 2. shows the significant results of a study focused on the perceived opportunities of Open and Distance Learning (ODL) education by students at Tribhuvan University. The data is categorized and analyzed based on different variables. The significance level for the analysis is 0.005, which indicates the threshold at which statistical significance is evaluated. The mean score represents the average perception of opportunities within each gender category. The p-value for Male vs. Female is 0.004*, below the significance level of 0.05. This suggests a statistically significant difference in perceived opportunities between male and female students. The table categorizes students based on their caste/ethnicity, such as Brahmin/Chhetri, Dalit, Janajati, Madheshi, and Others. Mean scores, standard deviations, and p-values are provided. The p-value for caste/ethnicity is 0.685, above the significance level of 0.05. This suggests that there isn't a statistically significant difference in perceived opportunities based on caste/ethnicity. Students are categorized based on their province (Koshi, Madhes, Bagmati, etc.). The p-value for provinces is 0.458, which is above the significance level of 0.005. This implies that there isn't a statistically significant difference in perceived opportunities across provinces. Students are categorized based on their religion, such as Buddhist, Christian, Hindu, Kirat, and Muslim. Mean scores, standard deviations, and p-values are provided. The p-value for religion is 0.278, above the significance level of 0.005. This indicates that there isn't a statistically significant difference in perceived opportunities based on religion. The p-value for study programs is 0.237, above the significance level of 0.005. This suggests that there isn't a statistically significant difference in perceived opportunities based on the study program. The p-value for device uses is 0.488, which is above the significance level of 0.005. This implies that there isn't a statistically significant difference in perceived

opportunities based on device use. The p-value for job status is 0.74, above the significance level of 0.005. This suggests that there isn't a statistically significant difference in perceived opportunities based on job status. The p-value for training is 0.531, which is above the significance level of 0.005. This indicates that there isn't a statistically significant difference in perceived opportunities based on training.

Here, the table presents the analysis of perceived opportunities in the ODL mode of education based on different categories. The p-values for various categories suggest that, at the 0.005 significance level, there are statistically significant differences in perceived opportunities between genders. However, there are no statistically significant differences in perceived opportunities based on other variables such as caste/ethnicity, provinces, religion, study program, device use, job status, and training.

Finding and Discussion of the Study

The findings of this study highlight the opportunities presented by the Open and Distance Learning (ODL) mode of education, emphasizing its potential to reshape the educational landscape. ODL is portrayed as a dynamic learning environment capable of fundamentally transforming the delivery and reception of education, offering students from diverse backgrounds a chance to engage in lifelong learning while equipping them with essential skills to navigate a rapidly evolving world. This section presents an analysis of the study's results in the context of the existing literature.

This study aligns with prior research highlighting the effectiveness of ODL in promoting cooperative learning and the integration of material, method, and context (Hernández-Sellés et al., 2019). ODL facilitates collaborative learning experiences, enhancing student engagement and knowledge retention. The strong preference for online classes due to the comfort and convenience of learning from home resonates with contemporary findings (Norman et al., 2021; Peimani & Kamalipour, 2021). This emphasizes ODL's role in adapting to learners' needs and lifestyles. Developing time management skills is a consistent theme in ODL literature (Adewoyin & Ebabhi, 2022; Ahmad et al., 2023). ODL's self-paced nature encourages students to hone essential time management abilities. While our study indicates that some students may not strongly agree with reduced costs in ODL, prior research has shown that it can be a cost-effective alternative (Ajaz & Women, 2014; Hjeltnes & Hansson, 2005; Zaki, 2022). The cost-effectiveness of ODL may vary depending on individual circumstances. The emphasis on improving IT skills aligns with contemporary literature highlighting the role of technology in ODL (Bozkurt, 2019; Maphosa & Bhebhe, 2019; Prinsloo & Coetzee, 2013). ODL equips students with digital literacy, a valuable asset in today's digital age. The value of timely faculty feedback and practical evaluation procedures resonates with recent literature (Hoskins & Van Hooff, 2005). Effective faculty-student communication is crucial for successful ODL implementation. Our findings support prior research showcasing ODL's potential to facilitate accessible meetings and discussions (Hathaway, 2014; Lieblein, 2000). However, addressing the need for increased interaction between professors and students remains a focus for further improvement. Reduced stress levels in ODL are consistent with the literature's emphasis on flexibility and comfort (Dzakiria et al.,

2013; Mohakud et al., 2012). ODL contributes to a less stressful learning experience. The ability to pursue higher education while working full-time is a prominent advantage of ODL, as indicated by our study. This aligns with the literature highlighting ODL's role in accommodating adult learners' needs (Carm et al., 2020; Hoskins & Van Hooff, 2005; Zaki, 2022).

While our study demonstrates a significant gender-based difference in perceived opportunities, it's essential to consider these findings in light of other studies. Existing research has also noted variations in ODL experiences based on factors such as gender and region. However, it is notable that caste/ethnicity, provinces, religion, study program, device use, job status, and training did not yield statistically significant differences, reflecting ODL's potential for inclusivity across diverse demographics.

This study's findings corroborate the prevailing literature on ODL, emphasizing its positive impact on students' educational experiences. It reaffirms that ODL offers a flexible, inclusive, and technologically enriched approach to education. While variations exist across socio-demographic categories, ODL appears to be a versatile mode of education accessible to a broad spectrum of students. This alignment with the existing body of knowledge underscores the robustness of the ODL mode and its ability to adapt to diverse learner needs.

Conclusion

The Open and Distance Learning (ODL) mode of education has brought about a paradigm shift in the educational landscape, providing university-level students with many transformative opportunities. This study has illuminated the diverse opportunities that ODL offers, fostering a holistic learning environment that empowers students in various ways. The flexibility inherent in ODL allows students to tailor their education to their unique circumstances, enabling them to balance academic pursuits with other commitments such as work, family, and personal interests. The asynchronous nature of ODL liberates learners from geographical constraints, offering access to a plethora of courses from institutions around the world. This globalization of education broadens students' perspectives and fosters cross-cultural collaboration and understanding, vital skills in our interconnected world. Personalization emerges as a hallmark of ODL, with adaptive learning algorithms and interactive multimedia catering to diverse learning styles. The technology-driven approach cultivates self-discipline and time management, skills extending beyond the virtual classroom into professional and personal realms.

Moreover, the democratization of education is a central tenet of ODL. By reducing financial barriers and making high-quality resources accessible to all, ODL levels the playing field, allowing learners from different socioeconomic backgrounds to partake in enriching educational experiences that were once confined to a privileged few. The survey results underscore the overwhelmingly positive perceptions of students toward the opportunities presented by the ODL mode of instruction. The data reveals that students value the convenience, flexibility, and enhanced IT skills that ODL provides.

Additionally, ODL has proven instrumental in allowing students to maintain full-time jobs while pursuing higher education, showcasing its alignment with the evolving needs of modern learners. While there are statistically significant differences in perceived opportunities based on gender, indicating the need for further exploration and targeted support, other socio-demographic variables did not yield significant distinctions in this context. In essence, the ODL mode of instruction stands as a beacon of innovation, paving the way for a more inclusive, adaptable, and personalized higher education landscape. As technology advances and society continues to embrace new learning paradigms, the opportunities afforded by ODL are poised to expand further, enriching the educational journey for university-level students and fostering a generation of lifelong learners ready to thrive in an ever-evolving world.

References

- Adewoyin, A. D., & Ebabhi, A. M. (2022). E-learning Environment and Learners' Satisfaction-The Learners' View. *Journal of Distance Learning and Open Learning*, 10(18), 45-61. https://jdlol.journals.ekb.eg/article_225615_a106ab43ede078e33b8be16ddf6c200b.pdf
- Ahmad, N., Khairi, N. H. M., Hassanuddin, N. A., Mamat, S. S., & Rosly, N. S. (2023). Student's Perceptions of the Effectiveness on Time Management Skills in Assisting their Online Distance Learning. *Jurnal Intelek*, 18(2), 227-232. <https://ir.uitm.edu.my/id/eprint/82882/1/82882.pdf>
- Ajaz, N., & Women, F. J. (2014). Cost effectiveness of Open and Distance learning in Pakistan. *International Journal of Health & Education*, 3(1), 47-55. https://www.researchgate.net/profile/Nashia-Ajaz/publication/336263450_Cost_Effectiveness_of_Open_and_Distance_Learning_in_Pakistan/links/5d9774f7a6fdccfd0e77b8b8/Cost-Effectiveness-of-Open-and-Distance-Learning-in-Pakistan.pdf
- Aremu, O. Open distance and e-learning for social justice: best practice for capacity building. <https://www.vhi.st-edmunds.cam.ac.uk/system/files/documents/2011-authorsA-E.pdf#page=34>
- Au, O. T.-S., Li, K., & Wong, T. (2019). Student persistence in open and distance learning: success factors and challenges. *Asian Association of Open Universities Journal*, 13(2), 191-202. <https://www.emerald.com/insight/content/doi/10.1108/AAOUJ-12-2018-0030/full/pdf>
- Bordoloi, R., Das, P., & Das, K. (2021). Perception towards online/blended learning at the time of Covid-19 pandemic: an academic analytics in the Indian context. *Asian Association of Open Universities Journal*, 16(1), 41-60. <https://www.emerald.com/insight/content/doi/10.1108/AAOUJ-09-2020-0079/full/html>

- Bozkurt, A. (2019). From distance education to open and distance learning: A holistic evaluation of history, definitions, and theories. In *Handbook of Research on Learning in the Age of Transhumanism* (pp. 252-273). IGI Global.
- Broadband Commission UNESCO. (2020). *The Digital Transformation of Education: Connecting Schools, Empowering Learners*.
- Carm, E., Johannesen, M., & Øgrim, L. (2020). Appropriation of Online Distance Learning in Nepal. In *Innovative Technologies and Pedagogical Shifts in Nepalese Higher Education* (pp. 42-61). Brill.
- Cheng, T. L. Networked learning: A new paradigm of teaching and learning in ODL.
- Das, A., & Bag, R. (2020). *Digital Pedagogy with ICT and Learning Technologies*. CBS.
- De Barros Ahrens, R., Da Silva Lirani, L., & De Francisco, A. C. (2020). Construct validity and reliability of the work environment assessment instrument WE-10. *International journal of environmental research and public health*, 17(20), 7364. <https://doi.org/https://doi.org/10.3390/ijerph17207364>
- Devkota, K. R. (2021). Inequalities reinforced through online and distance education in the age of COVID-19: The case of higher education in Nepal. *International Review of Education*, 67(1-2), 145-165.
- Dey, B., & Panda, B. N. Usability and Practices of MOOCs: ODL Professionals Perspective. http://www.wbnsou.ac.in/openjournals/Issue/2nd-Issue/July2023/3_Binayak_Dey.pdf
- Dzakiria, H., Kasim, A., Mohamed, A. H., & Christopher, A. A. (2013). Effective learning interaction as a prerequisite to successful open distance learning (ODL): A case study of learners in the northern state of Kedah and Perlis, Malaysia. *Turkish Online Journal of Distance Education*, 14(1), 111-125. <https://dergipark.org.tr/en/download/article-file/155783>
- Dźwigoł, H. (2020). Pilot study in the research procedure. *Organizacja i Zarządzanie: kwartalnik naukowy*. <https://doi.org/10.29119/1899-6116.2020.50.1>
- Gautam, G. R. (2021). Digitalization efforts of Tribhuvan University: Responding COVID-19 and beyond. *TU Bulletin Special ISSUE*, 93-101.
- Hathaway, K. L. (2014). An application of the seven principles of good practice to online courses. *Research in Higher Education Journal*, 22. <https://files.eric.ed.gov/fulltext/EJ1064101.pdf>
- Hernández-Sellés, N., Muñoz-Carril, P.-C., & González-Sanmamed, M. (2019). Computer-supported collaborative learning: An analysis of the relationship between interaction, emotional support and online collaborative tools. *Computers & Education*, 138, 1-12. <https://doi.org/https://doi.org/10.1016/j.compedu.2019.04.012>
- Hjeltnes, T. A., & Hansson, B. (2005). Cost effectiveness and cost efficiency in e-learning. *QUIS-Quality, Interoperability and Standards in e-learning, Norway*.
- Hoskins, S. L., & Van Hooff, J. C. (2005). Motivation and ability: which students use online learning and what influence does it have on their achievement? *British journal of educational technology*, 36(2), 177-192.

- Jesson, R., McNaughton, S., Wilson, A., Zhu, T., & Cockle, V. (2018). Improving achievement using digital pedagogy: Impact of a research practice partnership in New Zealand. *Journal of Research on Technology in Education*, 50(3), 183-199. <https://doi.org/10.1080/15391523.2018.1436012>
- Khadka, J., Joshi, D., Adhikari, K., & Khanal, B. (2022). Learner-centered instruction: Teachers' practice in online class of mathematics During Covid-19 pandemic in Nepal. *International Journal of Instruction*, 15(3), 831-852. <https://doi.org/10.29333/iji.2022.15345a>
- Kihoza, P., Zlotnikova, I., Bada, J., & Kalegele, K. (2016). Classroom ICT integration in Tanzania: Opportunities and challenges from the perspectives of TPACK and SAMR models. *International Journal of Education Development using ICT*, 12(1).
- Kop, R. (2011). The challenges to connectivist learning on open online networks: Learning experiences during a massive open online course. *International Review of Research in Open and Distributed Learning*, 12(3), 19-38. <https://files.eric.ed.gov/fulltext/EJ920741.pdf>
- Kothari, C. R. (2004). *Research methodology: Methods and techniques* (2nd ed.). New Age International.
- Kour, M. (2013). Equal opportunity to learn through Open University System: A case study of IGNOU. *Research Journal of Educational Sciences*, 2321, 0508.
- Kumar, R. (2018). *Research methodology: A step-by-step guide for beginners*. Sage.
- Lieblein, E. (2000). Critical factors for successful delivery of online programs. *The Internet and Higher Education*, 3(3), 161-174. [https://doi.org/10.1016/S1096-7516\(01\)00036-7](https://doi.org/10.1016/S1096-7516(01)00036-7)
- Maphosa, C., & Bhebhe, S. (2019). Digital literacy: A must for open distance and e-learning (ODEL) students. *European Journal of Education Studies*.
- Maunonen-Eskelinen, I., & Leppänen, T. (2015). Open and distance learning: developing learning opportunities in the teacher education in Nepal.
- Misra, P. K. (2012). Expanding the frontiers of lifelong learning through odl institutions: An action-plan. *Turkish Online Journal of Distance Education (TOJDE)*, 13(4).
- Mitchell, J., & O'Rourke, J. (2008). Meeting diverse learning needs. *International handbook of distance education*, 109-129.
- Mohakud, L. L., Mohapatra, R. L., & Behera, S. K. (2012). Encouraging higher education through open and distance learning (ODL): some aspects. *Turkish Online Journal of Distance Education*, 13(4), 359-368. <https://dergipark.org.tr/en/download/article-file/155987>
- Nayak, S. R., Kant, N., & Anjali, K. (2020). Strategy of using ICT in ODL to disseminate higher education in tribal communities: a case of MP, India. *Asian Association of Open Universities Journal*, 15(2), 189-206.
- Ndunagu, J. N., Ukhurebor, K. E., & Adesina, A. (2023). Virtual Laboratories for STEM in Nigerian Higher Education: The National Open University of Nigeria Learners' Perspective.

- Norman, D., Luo, T., & Muljana, P. S. (2021). Parents' voices: Virtual classroom bridging homeschooling to public schools. *Journal of Educational Technology Development and Exchange (JETDE)*, 13(2), 1. <https://aquila.usm.edu/cgi/viewcontent.cgi?article=1126&context=jetde>
- Ojo, D. O., & Olakulehin, F. K. (2006). Attitudes and perceptions of students to open and distance learning in Nigeria. *International Review of Research in Open and Distributed Learning*, 7(1), 1-10.
- Oladipo, A. J., & Okiki, O. C. (2020). Assessment of the contribution of online information resources in open distance learning mode to the development of lifelong learning in South-West, Nigeria. *Journal of Library & Information Services in Distance Learning*, 14(1), 79-93.
- Peimani, N., & Kamalipour, H. (2021). Online education and the COVID-19 outbreak: A case study of online teaching during lockdown. *Education Sciences*, 11(2), 72. <https://doi.org/https://doi.org/10.3390/educsci11020072>
- Powell, S., Prowse, A., & McCabe, O. (2020). Problem Structuring for Future University Learning. *INTED2020 Proceedings*, 1326-1331.
- Prinsloo, P., & Coetzee, M. (2013). Initiating the debate: Perspectives on teaching, learning and assessment in ODL contexts. *South African Journal of Higher Education*, 27(6).
- Roberts, J. (2018). Personalised learning in developing countries—Is Higher Education ready? European Distance and E-Learning Network (EDEN) Conference Proceedings,
- Rogers, D. L. (2000). A paradigm shift: Technology integration for higher education in the new millennium. *AACE Review (Formerly AACE Journal)*, 1(13), 19-33.
- Sallehuddin, N. H. M., Ahmad, T. S. A. S., Hassan, F. A., & Abidin, N. A. N. Z. (2023). Students' Acceptance towards Microsoft Teams for Learning Arabic Language. *Journal of Learning and Development Studies*, 3(1), 01-09.
- Tribhuvan University. (2019). *Tribhuvan University vision 2030*. Tribhuvan University.
- Tung, L. C. (2013). Improving students' educational experience by harnessing digital technology: ELGG in the ODL environment. *Contemporary Educational Technology*, 4(4), 236-248.
- Venter, A. (2021). Collaborative Learning among Diverse Online Students at an Open Distance Learning Institution in South Africa: Pedagogical Considerations for Online Learning Development. In *Transformative Curricula, Pedagogies and Epistemologies* (pp. 72-95). Brill.
- Zaki, M. S. (2022). Advantages and disadvantages of online learning. *Journal of International Social Research*, 15(92). <https://doi.org/10.17719/jisr.2022.75162>