Re-Thinking Optimal Flipped Learning and Flipped Research in Open and Distance Learning Domains

Sunday A. Reju
Department of Mathematics, Statistics and Actuarial Science
Namibia University of Science and Technology
Windhoek, Namibia
sreju@nust.na; sunny.rej2@gmail.com

Abstract

This paper explores the optimisation of flipped learning within the context of Open and Distance Learning (ODL). It examines the unique challenges and opportunities associated with implementing flipped learning in ODL environments. Drawing on relevant literature and theoretical frameworks, the paper discusses the implications for educational practice and future research. The paper also proposes advocacy for Flipped Research Contribution Model (FRCM) especially in ODL institutions, akin to the Contributor Role Taxonomy (CRediT) employed by high-impact research publication systems.

Keywords: Flipped learning; Open and Distance Learning (ODL); Research; Education

Introduction

Flipped learning (FL), characterised by the inversion of traditional teaching methods, has become a popular pedagogical approach. In traditional settings, instructional content is delivered in-class, while flipped learning moves content delivery outside the classroom, using in-class time for interactive and collaborative activities. This approach holds significant promise for ODL, where flexibility and accessibility are paramount. Flipped Learning (FL) being originally a Blended Learning (BL) approach in which students learn new content at home, e.g., by watching video lectures or other materials, can be a minimal variant of ODL implementation. However, adapting its implementation comprehensively to ODL contexts require careful consideration of the unique dynamics of open and distance learning systems.

In FL, homework (i.e., assignment) is done in class with teachers offering more personalised guidance and interaction with students to deepen understanding, instead of lecturing. Hence, if in FL, deep learning takes place in class, a re-thinking of how to migrate deep learning into a distance mode is essentially the focus of this paper.

Open and Distance Learning (ODL) in Brief – What we know

ODL is simply characterised by the separation of learners and instructors by time and/or space while technology is employed to bridge the distance between the learners and both the teacher and the learning institution. It emphasises flexibility, allowing learners to access education at their own pace. A very comprehensive list of characteristics in support of student-centredness proposed by *Education Evolving* which we consider to also appropriately underpin ODL philosophy is presented below:

Figure 1: Student-Centredness Characteristics
Source: https://www.educationevolving.org/learning

Flipped Learning in the Traditional Domain

Flipped learning was pioneered by Aaron Sams and Jonathan Bergmann in the early 2000s. It involves students engaging with instructional content at home and using class time for hands-on activities. Flipped learning, also known as the flipped classroom, involves students learning new content at home through video lectures or other materials, and engaging in interactive activities in class. This approach transforms the classroom into a space for deep learning, with teachers offering personalised guidance.

Research has shown that this approach enhances student engagement and learning outcomes by fostering active learning environments. Below is a *Flipped Learning Network* survey report in support of FL.

Table 1: Source: https://lesley.edu/article/an-introduction-to-flipped-learning

Survey Summary	Percentage
Instructors saw an improvement in student test scores utilising the Flipped Learning model	67%
Instructors reported an improvement in student motivation	80%
Instructors said they would use the Flipped Learning methodology again next year	90%

Re-thinking ODL: Beyond Pedagogy for Flipped Learning Adoption

To substantiate the needed foundation for the integration of Flipped Learning in ODL, Table 2 provides a reflective look at the three learning theories to underscore the limitations of the old pedagogical principles in an ODL setting.

Table 2: Differences between Pedagogy, Andragogy and Heutagogy

Features	Pedagogy	Andragogy (self directed)	Heutagogy (self
Motivational factors	External reward driven	Internal need and desire driven	Internal enquiry driven
Resources of learning	Limited, advised and/or devised by teachers	Controlled; collaboratively decided by educator and learner	Unlimited, may be provided by teacher but decided mainly by learner
Learning to change underlying values and assumptions	No (single loop)	No (single loop)	Yes (double loop)
Allows creativity	No	No	Yes
Requires interlearner collaboration,	No	Not essential	Must

Source: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7774633
Journal of Education and Health Promotion (2020) 90:301

For example, in the table above, "inter-learner collaboration" which is an essential aspect of Flipped Learning has been identified as a heutagogical feature as against a pedagogical method. Thus, optimising Flipped Learning within the ODL domain requires a rethinking of the latter with a broader flexibility beyond the traditional pedagogical foundation.

From the above argument, Flipped Learning integration into ODL thus appears to admit more of a variant of "*Open Pedagogy*" to optimise its full benefits. An Open Pedagogy concept has been advanced by Caroline Sinkinson (2018) as shown below:
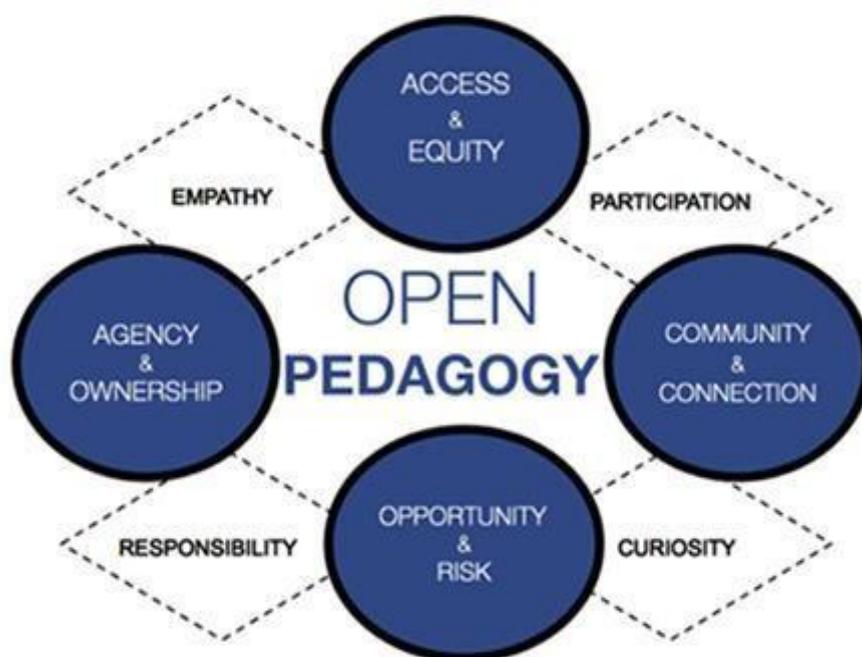

Figure 2: **An Open Pedagogy Concept**
Source (Inverted Colour) EDUCAUSE Review Article by Caroline Sinkinson (2018) https://er.educause.edu/blogs/2018/11/the-values-of-open-pedagogy

Open pedagogy involves leveraging open educational practices to facilitate connections across diverse learning environments. It emphasizes authentic student collaboration with peers, experts, and the public, fostering an inclusive and dynamic learning experience. This

approach aligns well with flipped learning in ODL, promoting a culture of openness and shared learning.

Integration of Flipped Learning in ODL: The Virtual Class

The integration of flipped learning into ODL presents both challenges and opportunities, necessitating a re-evaluation of traditional educational paradigms. The integration requires innovative approaches to ensure that the benefits of interactive, in-class activities are realised in a distance or specifically virtual environment. This includes leveraging technology to create engaging pre-class materials and fostering collaborative online spaces. The pre-class notion in ODL context should here be appropriately defined since the idea of a class is actually non- existent in a distance setting which is known for personalised, independent and self-learning.

The role of the pre-class materials in Flipped Learning presumes in advance a class setting where students are made to engage interactively to enhance their personalised learning. Thus, the integration of Flipped Learning in ODL necessitates an introduction of a class where the usual challenge of students' isolation or the so-called loneliness trap during self-learning is addressed to provide peer support under the guidance of instructional facilitators. Doing this virtually will be most appropriate in our opinion. Hence, rethinking virtual classes to facilitate deep learning in ODL involves using interactive and collaborative online tools. These tools help to replicate the in-class experience, making learning more engaging and effective.

Self-Determination Theory (SDT): A Framework for Flipped Learning in ODL

The Self-Determination Theory (SDT) evolving from Deci and Ryan's groundbreaking work (1985, 2000) provides a valuable framework for understanding student motivation in flipped learning environments. According to the authors, the SDT three pillars based on human psychological needs are AUTONOMY (the desire to be self-directed), COMPETENCE (the need to feel capable) and RELATEDNESS (the desire to connect with others).

Hence by fostering the students' psychological needs of autonomy, competence, and relatedness, flipped learning can enhance intrinsic motivation and improve learning outcomes in ODL settings. The theory suggests that when students feel self-directed, capable, and connected, they are more likely to engage deeply with the learning material. For example, the UK Open University (UKOU) MBA programme appears to implement the Relatedness pillar of SDT as shown in the following advertorial components of the connections embedded in the programme.
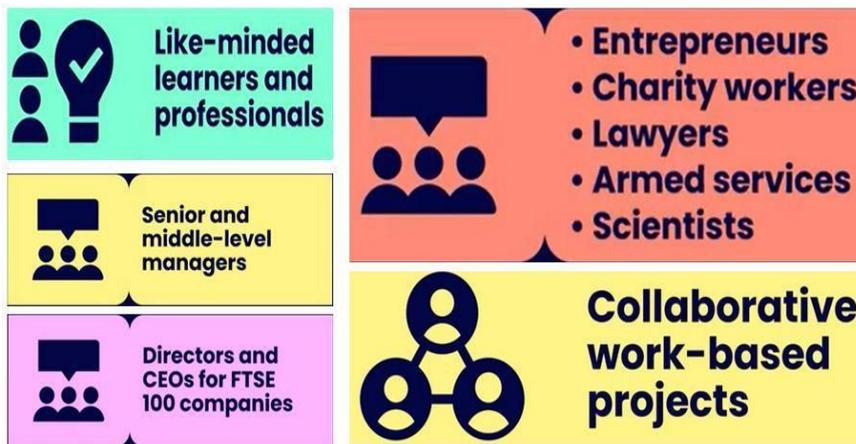

Figure 3: An Illustration of SDT-Relatedness - Using UKOU MBA Programme Advert. Source: https://www.youtube.com/watch?v=oaNzWzUOeBU

Multi-Disciplinary Real World: Motivation for Flipped Learning

Flipped learning in ODL can encourage students to solve real-world problems in a multidisciplinary context. This approach helps to develop strong relationships with peers and mentors, fostering an environment of care and high expectations.

The UKOU programme exemplified above obviously reflects a real-world input to distance learning that can be further strengthened by Flipped Learning approach, as illustrated in the following adapted figure (earlier presented in Figure 1).
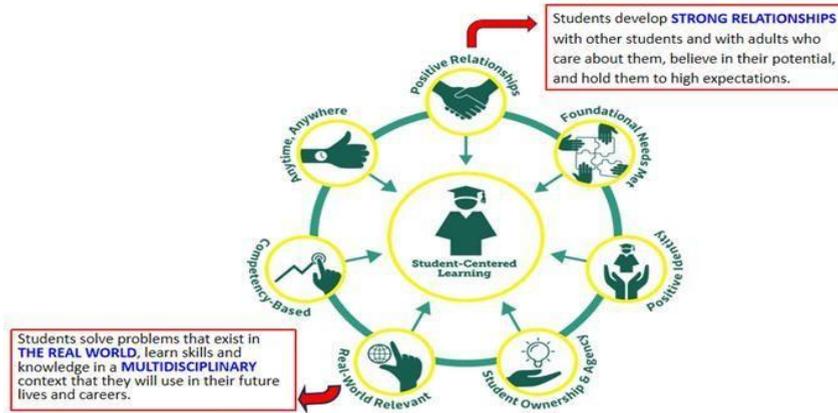
Figure 4: Flipped Learning optimal focus within ODL context
Source: Adapted from original source by author for emphasis (in boxes)

Flipped Learning in ODL: A Proposed New Work Integrated Flipped Learning (WI-FLIP) Model

From the above discussions, below is a proposal on the integration of Flipped Learning into ODL, namely, using the SDT Relatedness input:
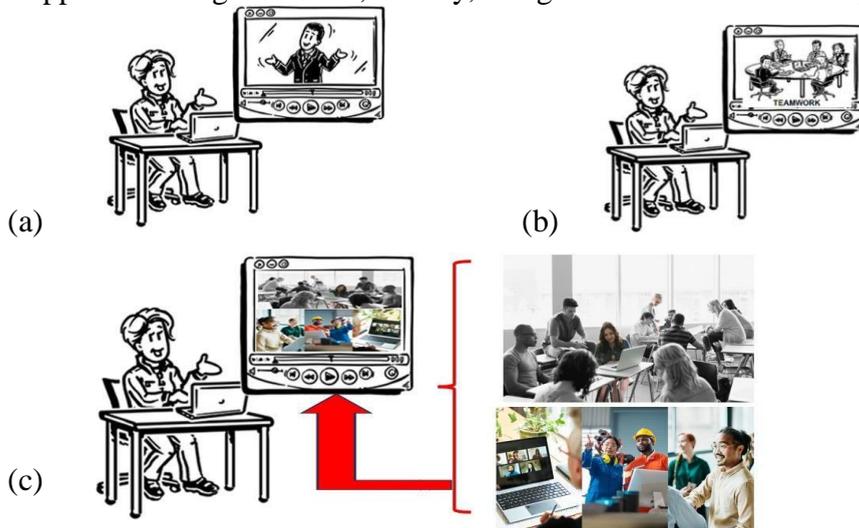

(a)

(b)

(c)

Figure 5 (a-c): An ODL Virtual Work Integrated Flipped Learning (WI-FLIP) Model
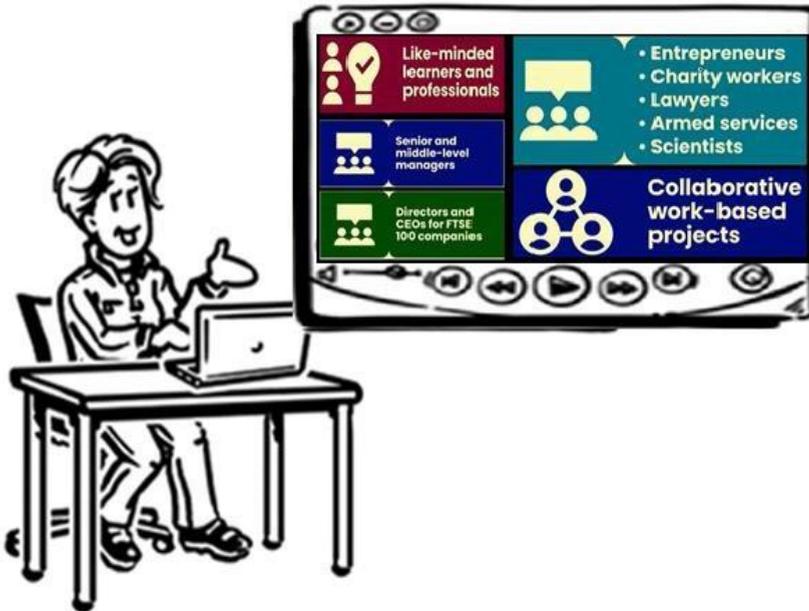
(d)

Figure 5d: A Virtual ODL Work Integrated Flipped Learning (WI-FLIP) Model
Cliparts/Graphic   Items: Adapted   from
https://flippedlearning.org/how_to/create-flipped- classroom-lessons-
no-5-mysimpleshow/ & Figure 3 (Inverted)

The integration of technology in ODL supports flipped learning by enabling interactive pre- class activities and teamwork. This approach enhances the learning experience by promoting active participation and collaboration as illustrated in Figure 5 (a-d) above. From the proposed illustrative model, it is evident that the model embeds both andragogical and heutagogical inputs, in recognition of slow but diminishing margin between age-classification of adult learning (andragogy) and its younger classification (pedagogy) evolving from advanced technology-enabled learning.

Flipped Learning in ODL: Challenges and Opportunities

Implementing flipped learning in ODL poses several challenges, including ensuring access to technology and creating engaging online content alongside effective choice of what learning content to flip.

Specifically, the latter challenge requires a comprehensive instructional design founded on blended learning principles that clearly delineate learning content according to their appropriate learning outcomes. For example, asking a basic question: 'What proportion and specific learning content items to be flipped?'. One quick response could be skill-oriented content. Moreover, the selection of contents for flipped self-learning or flipped shared/supervised learning is something worth considering. Again, among other challenges, the unrestrained accessibility of Artificial Intelligence (AI) chatbots such as ChatGPT or its siblings by students requires a re-thinking of assessment strategies for flipped learning in ODL.

However, apart from the challenges, flipped learning implementation in ODL also presents opportunities for enhancing student engagement and fostering a sense of community among distance learners. Moreover, addressing the common problem of the loneliness trap and credibility stigma associated with distance learning qualifications in some regions of the world can improve the overall flipped learning experience.

Advocacy for Research Authorship-Contributorship Flip in ODL

The shift from (or flipping) traditional authorship to contributorship in research is significant in the context of ODL. The Contributor Role Taxonomy (CRediT) framework emphasises the diverse roles that contributors can play in research, from conceptualisation to data curation. This approach encourages multidisciplinary collaboration and recognises the varied contributions of team members to enhance the quality of research and supervision in ODL.

Ensuring visibility, credibility, originality and diversity, especially in discipline-based research in ODL domain stands to benefit from the Authorship-Contributorship Flip. For example, experts from the industry can be engaged to co-supervise diploma or undergraduate academic projects and then have them credited as contributors. Moreover, flexibility enshrined in ODL can be extended to engagement of students in multidisciplinary research data collection and then have them visibly credited in the research publication as contributors

without minimising the quality of such research investigation. Moreover, with the growing importance of indigenous knowledge research in climate studies, health and other research domains, acknowledgement of the indigenous contributors in research publications is both originality, visibility and diversity rights worth advocating for. Without doubt, our ODL learning and research environments stand to take the leading role based on their openness and flexibility strategies.

Conclusion

This paper has explored the potential of flipped learning in ODL, highlighting the need for a rethinking of traditional educational practices to better suit the needs of distance learners. By integrating flipped learning strategies that promote active engagement and intrinsic motivation, educators can enhance ODL experience. Future research should focus on developing and testing specific models of flipped learning tailored to ODL environments. The paper also presents an advocacy opinion for multidisciplinary research collaboration that promotes flipping the common traditional authorship with contributorship in research publications.

Further research and practical implementation of flipped learning models tailored to the unique needs of ODL learners are recommended.

References

Bergmann, J., & Sams, A. (2012). Flip Your Classroom: Reach Every Student in Every Class Every Day. *International Society for Technology in Education.*

Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. Plenum Press, New York, https://link.springer.com/book/10.1007/978-1- 4899-2271-7

Deci, E. L. & Ryan, R. M. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11 (2000), pp. 227-268, https://doi.org/10.1207/S15327965PLI1104_01

Education Evolving: Learning Must Be Student-Centred, https://www.educationevolving.org/learning

Garrison, D. R., & Vaughan, N. D. (2008). Blended Learning in Higher Education: Framework, Principles, and Guidelines. Jossey-Bass.

Kim, M. K., Kim, S. M., Khera, O., & Getman, J. (2014). The Experience of Three Flipped Classrooms in an Urban University: An Exploration of Design Principles. The Internet and Higher Education, 22, 37-50.

Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The Effectiveness of Online and Blended Learning: A Meta-Analysis of the Empirical Literature. Teachers College Record, 115(3).

Moore, M. G., & Kearsley, G. (2011). Distance Education: A Systems View of Online Learning. Wadsworth Publishing.

Origins of CRediT. https://credit.niso.org/origins/

Reju, S.A. (2024) Re-thinking Optimal Flipped Learning and Research in ODL Domains, Monthly Discourse Presentation organised by Regional Training and Research Institute for Open and Distance Learning (RETIDOL), National Open University of Nigeria (NOUN), presented on 29th January 2024.

Zainuddin, Z., & Halili, S. H. (2016). Flipped Classroom Research and Trends from Different Fields of Study. *International Review of Research in Open and Distributed Learning,* 17(3), 313-340.