

LEARNING-TRANSFER-RESULT METHOD OF EVALUATING THE EFFECTIVENESS OF MASSIVE OPEN ONLINE COURSES IN HIGHER EDUCATION

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ABSTRACT

The objective of this research is to have a constructive influence on the development of online courses, consequently raising their enrollment, acceptance, and completion rates. Massive Online Open Courses (MOOCs) are designed to make education accessible to all students on a global scale. MOOC platforms have rapidly grown in recent years as a result of the COVID-19 pandemic and even the online learning trend. However, due to variables including course quality, internet connectivity, and lack of exposure, MOOCs' reach has been constrained. Students who sign up for MOOC courses frequently drop out owing to variety of reasons, such as a lack of interest or inadequate learning. The effectiveness of MOOCs among students has been the focus of numerous research. These research help MOOCs develop and expand. Student feedback is a well-liked metric for assessing a MOOC's efficacy. The Learning-Transfer-Result (LTR) technique is suggested in this research as a way to assess the efficiency of MOOCs in higher education. This technique was developed using Student feedback, who registered in various online courses, were asked to provide input under the headings of learning, transfer, and results. The replies were then examined. The findings of this study offer guidance to organizations who intend to produce online content in the future and to improve student retention rates through course customization.

1. Introduction

Massive open online courses (MOOCs) have become one of the most significant advancements in digital education over the past few years as a result of the Covid-19 pandemic, including some of the world's most prestigious institutions, corporations, and firms. They are web-based, structured learning initiatives and are a well-liked educational alternative. Anyone can engage for free without being required to fulfil any knowledge or demographic restrictions. Although MOOCs are frequently seen as a useful format for digital training, their efficiency is still up for discussion. In attempt to provide a detailed explanation of the factors influencing learners' success and course completion in MOOCs, this research will look into success and completion issues from participants with various learning styles and characteristics. The criteria can be revealed in order to develop high-quality courses that increase turnout and prevent the structural flaws that currently exist in MOOCs, enabling the successful and long-term implementation of MOOCs. This research suggests using the Learning-Transfer-Result (LTR) technique to evaluate how effective MOOCs are for higher education. Our proposed model is loosely based on Kirkpatrick Model of Student Learning and Evaluation. Kirkpatrick Model comprises of 4 steps - Reaction, Learning, Behaviour and Result.

2. Literature Review

According to MOOC.org, The Massive Open Online Course (MOOC) is a free online course that enables anyone to sign up and study online (Kusumastuti and Tjhin, 2021). Based on computer tablets and technology, there are numerous massive online courses; Coursera is the biggest MOOC platform, for instance The COVID-19 has disrupted the normal teaching-learning role across the world, massive open online courses are one of the crisis management solutions to ensure that education is continuous and not disrupted (Batsurovska, 2021). Factors have been recognized as being essential to the growth of MOOCs based on a comprehensive literature review are: system quality, information quality, service quality, attitude, course quality, and satisfaction. Today many universities around the world offer various MOOCs. Learning is a complex phenomenon that can be described from different perspectives. Understanding learning is about understanding not only learning processes but also the conditions that influence—and are influenced by—the learning process (Albelbisi, 2020). The authors of have done a study on Learning Management system and the impact of them in Learners (Cherkaoui et al., 2015). Perhaps the most common metrics for assessing course success are retention and completion rates. They require calculating how many students (out of those enrolled) remain active as the course unfolds and meet the criteria needed to finish it (Padilla Rodriguez, 2020). The same author has done a research on how size of the course matter for retaining the students (Padilla Rodriguez, 2019). In the recent research conducted by (Khalid et al., 2023) a hybrid approach has been suggested to detect the impact of e-learning among students. They have conducted the research based on the feedback received from around 1000 students where the discussions that happen in the learning forum were captured and techniques were used to extract the relevant information for conducting the study. People that

apply for MOOCs may not just be interested in completion, but also in improving their skills in general, or they may just be looking for better job opportunities. Another common indicator of MOOC success relies on learner feedback. Most evaluations take the form of end-of course surveys that assess satisfaction and sometimes perceived learning (Batsurovska, 2021). Providing learning recognition appears to be a powerful indicator of user engagement and persistence in the MOOC. According to their research study, interaction and collaboration enable learning through interpersonal relationships, teaching, and technology, have a key impact in how effective a MOOC is to a learner “Global learn,” 2015. During the pandemic, it was evident how MOOCs played an active role in teaching learning (Anand Shankar Raja and Kallarakal 2021). The authors of (Cahapay, 2021) have discussed the limitation of Kirkpatrick model for evaluating the education at higher levels. According to that study, the model is flawless but the problem is implementation of the model in higher education. A similar evaluation study was conducted by the authors of (Dewi and Kartowagiran, 2018) to assess student learning outcomes after completing an internship program. This study incorporated the examination of all four levels, with particular emphasis on the behavior level and results level, achieved through the use of questionnaire surveys. The same model was implemented in the study (El Nsouli et al., 2023) to assess the performance in pharmacy course students. In similar study conducted by the authors of (Embi et al., 2017), Kirkpatrick model was used to evaluate blended learning in a multimedia learning environment. Kirkpatrick model has been used to measure the performance of students in the field of medical sciences also as mentioned in (Liao and Hsu, 2019). The model was used in one of the thesis submitted by the author of (Miller, 2018).

3. Methodology

The methodology we have adapted in this study is loosely based on Kirkpatrick's Four Levels of Training Evaluation.

3.1 Measuring the Learning Effectiveness

Online course learnability, also known as learning effectiveness, refers to how quickly and easily students may pick up the necessary information, skills, and knowledge. The scope of learnability is a critical contributor that you should pay heed to. Once this has been determined, we may evaluate the progression from knowledge acquisition to application, which is reflected in performance improvement. Online Courses should be designed to ensure that learners are adequately prepared for the primary learning experience. This includes tasks aimed at addressing motivation, learner objectives, self-confidence, and the evaluation of prerequisite skills.

The scope of learnability evaluation can be visualized in two different ways:

Initial Learnability: Initial Learnability refers to performance over a single, brief usage period.

Extended Learnability: Extended Learnability refers to performance evolution over time.

The importance of learnability is evident. Only carefully designed courses with the proper learnability can improve student performance and assist companies in achieving their objectives.

According to studies, students waste up to 40% of their time because of "frustrating experiences" with the courses. Common causes include missing, elusive, useless, and irrelevant characteristics of the course curricula.

3.2 Measuring the Level of Transfer

Simulations and assessments are great options to determine if the students comprehends your information. These resources do not guarantee that audience members will continue to apply what they learned in class to their daily lives. We need to continue monitoring and testing their application of the course material in the weeks and months following course completion. The learning activities should be integrated into the instructional design process to enhance the transfer of acquired knowledge and skills. Examples of such activities include practice exercises, role modelling, setting learning objectives, and reviewing and providing assistance for real-world applications.

3.3 Measuring the results in Learning

Online Courses have different definitions of results. Measuring results is based on how students get benefitted after completing the course. It can be in the form of getting better grades in academic evaluation or in the form of securing placements in that particular domain. Other forms of activities may be designed to make sure to support the utilization of acquired skills. Included within this category are activities like managerial guidance, peer support, linking learning to job roles, and fostering a culture of continuous learning.

Our proposed model has three levels of evaluation – Learning, Transfer and Result. The following diagram Fig. 1 depicts our proposed model.

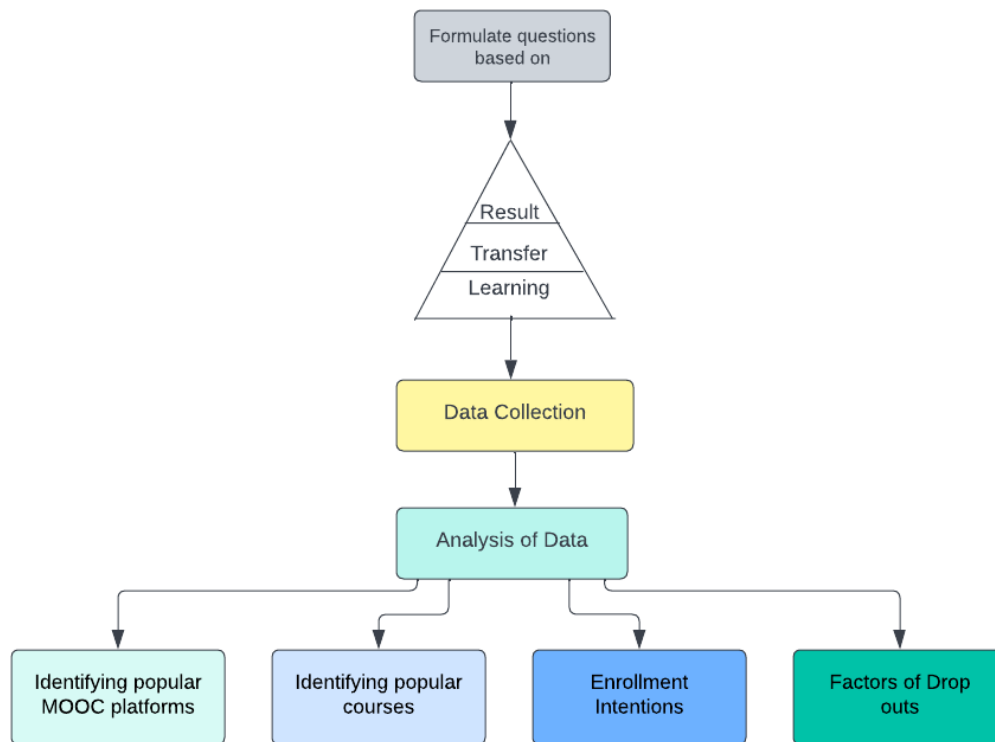


Fig. 1 Proposed Methodology

4. Data Collection

In this study, we have used questionnaire as the main data collection technique. An online form was carefully designed based on our proposed model. Questions were based on three criteria – Learning, Transfer and Result. Students of higher education were asked to respond to the questions. The following table 1 lists the questions and their categories.

S.No	Questions	Expected Responses	Category
1	Number of online courses enrolled	Number	NA
2	Number of online courses completed	Number	NA
3	Reason for not completing the course	Poor course design Lack of Motivation Duration of the course was lengthy	Result
4	Purpose of enrollment	To supplement curricular and academic learning To learn a new domain For better career opportunities	Result
5	Most effective mode of learning	Video Tutorials Course Notes Textbook References	Transfer
6	Were Hands-on practical topics and demonstrations covered ?	Yes / No	Learning
7	Were the course assignments aligned to the course syllabus	Yes / No	Learning
8	preferred mode of learning	Self-paced / Deadline-based	Transfer
9	Availability of Tutor for solving doubts and trouble-shooting.	Yes / No	Learning
10	Mode of applying the knowledge you have gained in online course	Job Opportunities / Academics	Result

11	Rate your knowledge on the domain before the course	Rating based	Transfer
12	Rate your knowledge on the domain before the course	Rating based	Transfer

Table – 1 Categories of Questions

5. Analysis and Discussions

Based on student responses, the following inferences could be derived.

1. Around 62% of the applicants completed the course
2. Not being motivated to complete is the reason majority of students have cited for not completing the course among other reasons like Duration being too lengthy and course structure being not appropriate.
3. Around 40% of the students wanted to learn a new domain and around 25% of the students have pursued online courses for better job opportunities and for supplementing curricular and academic prospects.
4. As expected, 70.3% of the applicants vouch for Self-paced learning instead of deadline based learning.
5. More than 75% of the applicants prefer having video tutorials as a way to gain better understanding of the topics.

The observations have been depicted pictorially in the graphs 2-4.

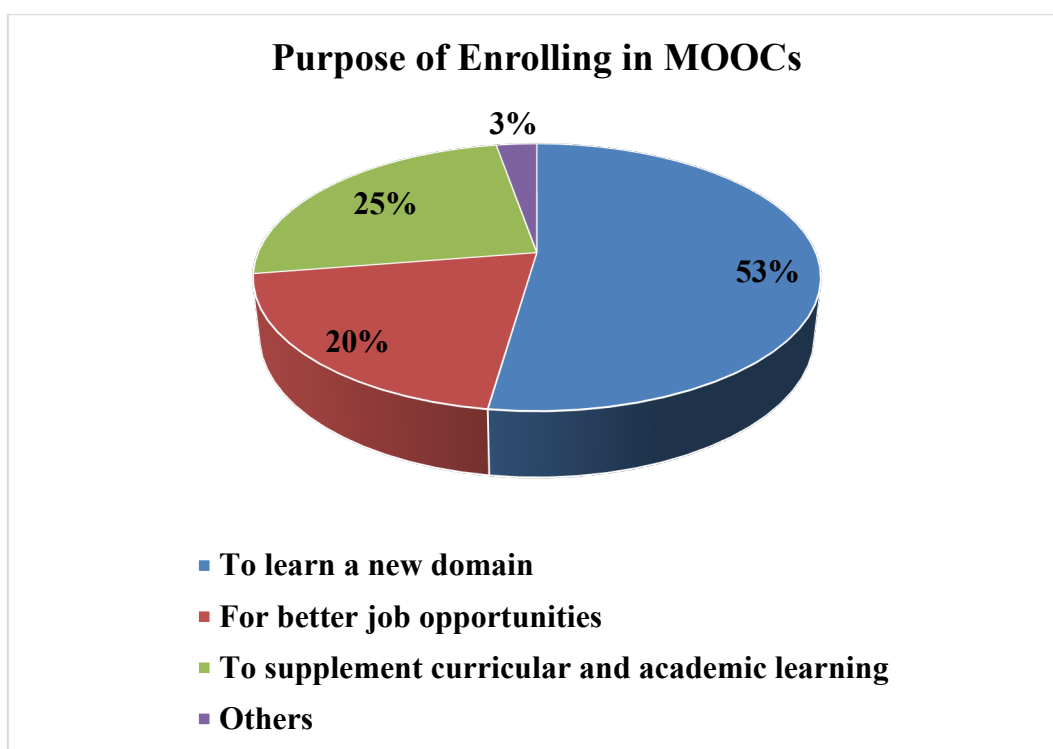


Fig. 2 – Purpose of Enrolling in MOOCs

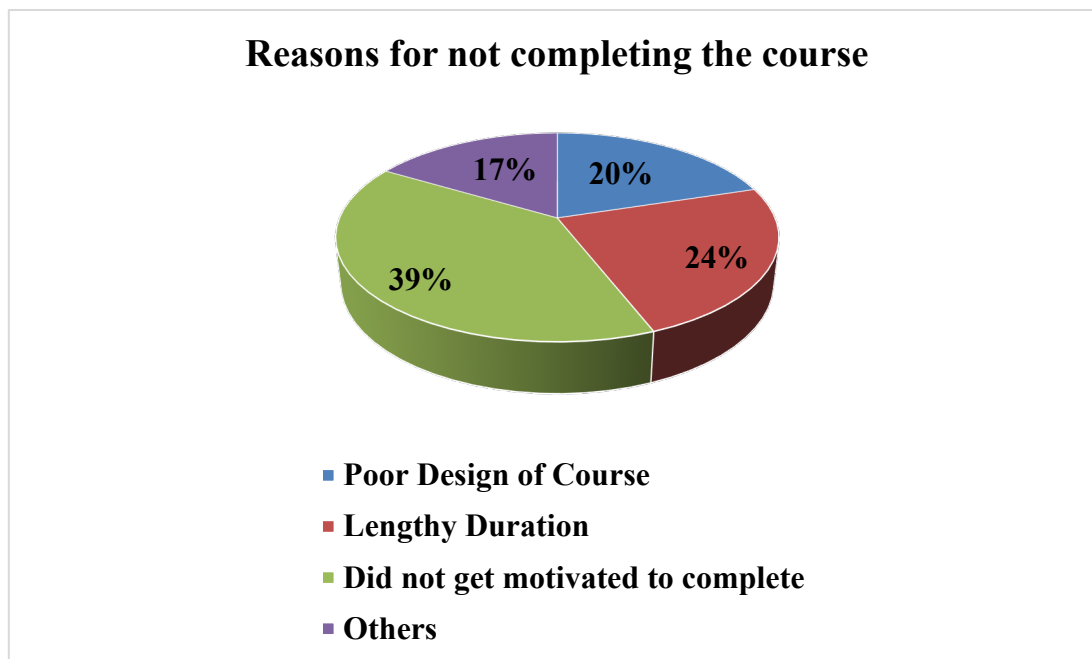


Fig. 3 – Reasons for not completing the course

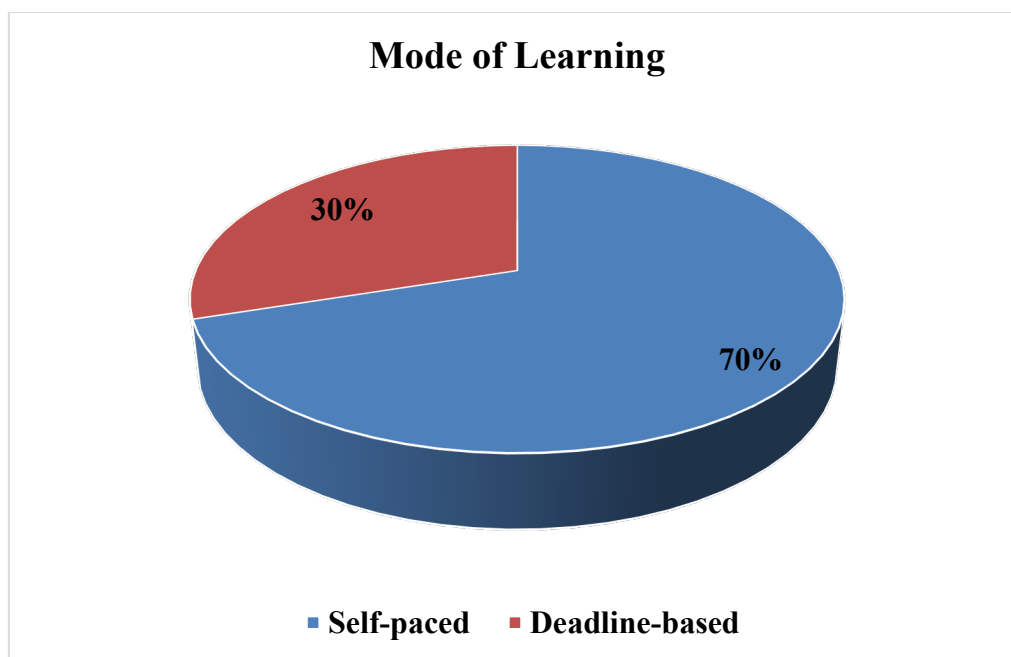


Fig. 4 – Mode of Learning

6. Conclusion and Future Scope :

Implementing Massive Open Online Courses as a supplement to classroom teaching has always been a topic of discussion. MOOCs provide an opportunity to extend the learning beyond classrooms. Gauging the impact of online courses on students' learning processes involves assessing various factors related to their engagement, knowledge acquisition, and overall experience. Various methods such as comparing the students' performance before and after taking the online course, evaluating whether students have achieved the stated learning objectives and goals, collecting feedback from students through surveys to understand their experiences and perceptions, retention and drop-out rates, etc. This study has attempted to gauge the impact of online courses in students' learning process. Responses of Students pursuing higher education were taken into consideration. This study also provides insights on how online courses can be designed to attract more students to enrol and to achieve a better retention percentage and we have tried to find out the reasons for completing the course thereby giving directions to the course providers to incorporate changes in their course structure and design. The future scope of this study

would be to evaluate the effectiveness and impact of MOOCs in the teaching process – how teachers have utilized these courses to improvise the whole teaching-learning process.

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