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Enhancing Quality of Knowledge through Online Courses and Improving Skill Among College Students

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ABSTRACT
In order to improve students skill on technological advancement in higher education institutions, this research aims to better understand the Online Courses and its impact on skill development among college. Through the use of an online questionnaire with two scales and identification questions, this study adopted a quantitative methodology. 145 respondents were chosen at random from the colleges to make up the sample. Through descriptive statistics and correlation analysis, the information obtained from the questionnaire was examined. Studetns from both private and Government sector colleges are thus included in this study. According to the findings, Online Courses develops lot of skills which are needed in today's corporate world, as well as the impact of skill gap and social interaction. Similarly, the Students willingness to learn online courses has the impact on skill gap and that prevents psychological needs from having a large impact on adoption of online courses. It was also vital to advocate for the involvement of the students who will lead the change process in the implementation processes in order to boost the productivity of their career.

Keywords: Online Courses, Effective Communication, Higher Education, Modern education system, Sustainable development.

I. Introduction

The advent of massive open online courses has brought about a new phase of participatory learning. Implementing efficient and effective evaluation is still a challenge, despite the fact that large open enrolment and advancements in learning technologies are providing new potential for lifelong learning in both formal and informal settings. It is commonly recognised that there are discrepancies in access to education around the world, with wealthy countries often having more educational resources and opportunities than underdeveloped countries. MOOCs have been advocated as a solution to this problem by making online education available for free or at a cheap cost to everyone with an internet connection. This study article addresses the issue of how the online learning platform impacts both skill and the professional growth of college students. The MOOC platform has a poor completion rate and a high abandonment rate, so this research suggests a its essential to learn online courses in reputed platform so as to compete with the competitive world in the corporate sector.

II. Review of Literature

Adoption of MOOC:

(Nguyen 2022) in their manuscript revealed the study MOOCs have also given lecturers and instructors new avenues to disseminate their knowledge to a global audience. With MOOCs, instructors may create and provide courses to thousands of students, something that was not previously possible. However, MOOCs face some obstacles. MOOCs face significant challenges, including a high dropout rate. Many students enrol but do not complete MOOCs. Another problem is a lack of personal interaction with professors and classmates. Students who require structured supervision and feedback may struggle with self-paced MOOCs.

(Foley 2019)**,** discussed in their article about the MOOCs offer global accessibility, which is a key advantage. This has democratised education, allowing students of all backgrounds to access high-quality content. MOOCs are a low-cost alternative to traditional higher education, attracting students who cannot afford traditional degrees. MOOCs provide a plethora of advantages for learners. They let pupils learn according to their own timetable

and pace. MOOCs offer a huge number of courses, from specialty to foundational academic areas. Finding classes that fit their interests and career goals is simple for students. MOOCs are offered by numerous prestigious universities on websites like Coursera, edX, and Udemy. As a result, universities have been able to attract new faculty members for their regular degree courses and increase brand recognition.

Policy Strategies in MOOCs in Higher Education:

(Misiejuk 2021)**,** in their paper highlighted that MOOCs have also given lecturers and instructors new avenues to disseminate their knowledge to a global audience. With MOOCs, instructors may create and provide courses to thousands of students, something that was not previously possible. However, MOOCs face some obstacles. MOOCs face significant challenges, including a high dropout rate. Many students enrol but do not complete MOOCs. Another problem is a lack of personal interaction with professors and classmates. Students who require structured supervision and feedback may struggle with self-paced MOOCs. The accessibility of policy MOOCs is one of their main benefits. Anybody with an internet connection can access them, no matter where they live or how much money they have. This gives everyone everywhere access to top-notch policy education, particularly those living in underprivileged areas.

(Barthakur 2021) in their manuscript focuses on the public guidelines MOOCs have the power to alter Indonesia's system of higher learning. With one of the largest populations in Southeast Asia, Indonesia is also home to a booming IT sector, a large youth population, and an economy that is expanding quickly. Obstacles to higher education in Indonesia include poor facilities, low financing, and a shortage of trained teachers. MOOCs provide affordable and high-quality education to students worldwide, addressing these difficulties. Universities should create a marketing plan to promote MOOCs to potential students. To reach a larger audience, consider employing digital marketing methods such as social media. Universities should work with business partners to promote MOOCs and provide students with useful skills and experience in the workplace. The existing literature's lack of comprehensive research creates a significant challenge promoting MOOCs. To bridge this research gap, this study aims to assess the factors that significantly impact on the development of Higher Education teachers

III. Aim and Objective of Study

Research objectives:

1. To investigate the impact of MOOC Courses on student's skill for professional development in corporate sector.
2. To examine the association between digital capability factors and professional development.

Research Questions:

1. Which online courses specifically tackle the digital competencies of students?
2. Do current online courses adequately prepare students for a wide range of digital competencies?

Theoretical framework:

1. **MOOCs and Educational Accessibility:** MOOCs give unfettered access to excellent learning resources,

democratising the educational process. The promotion of lifelong learning, which is essential to sustainable development, depends on this accessibility. Students in higher education can improve the quality of education they provide by regularly updating their pedagogical knowledge and skills through MOOCs.

2. **Professional Development of Educators:** It takes ongoing professional development (CPD) for educators to stay creative and successful. MOOCs provide a wide selection of courses that can assist students in learning new techniques, incorporating technology into the classroom, and staying current with research in their areas. SDG 4, which aims to ensure inclusive, equitable, high-quality education and to promote opportunities for lifelong learning for everyone, is aligned with this continual learning process.

3. **Pedagogical Innovation and Sustainability:** Using MOOCs in the classroom has the potential to produce important pedagogical breakthroughs. MOOCs frequently make use of multimedia and interactive content, which can encourage students to implement similar strategies in their own field. This change has the potential to improve learning outcomes and student engagement while advancing more long-lasting and efficient teaching strategies.

4. **Collaborative Learning and Knowledge Sharing:** MOOCs enable educators to collaborate globally and share information. students can interact with many skilled people from the corporate world, share best practices, and work together to address problems in education. A global community of students dedicated to raising standards and accomplishing sustainable development objectives is fostered by this collaborative learning environment.

5. **Impact on Curriculum Development**: Curriculum development may be impacted by MOOCs' exposure to creative content and a range of viewpoints. Teachers in higher education can incorporate new subjects about sustainable development into their curricula, like environmental science, social justice, and global citizenship. By this integration, It is ensured that students possess the knowledge and skills required to address complex global concerns.

6. **Scalability and Resource Efficiency**: Due to the scalability of MOOCs, many people can gain from a single course without requiring a substantial amount of extra funding. Since less physical infrastructure and printed materials are required, this scalability is both environmentally friendly and economically advantageous. MOOC integration can result in financial savings and a lesser environmental impact for institutes of higher learning.

Sustainable development of MOOC:

1. **Access and Inclusivity:** Many studies emphasize the potential of MOOCs to democratize education by giving access to high-quality courses globally. MOOCs have been praised for breaking down traditional barriers to education, enabling learners from diverse backgrounds to access content from top institutions.

2. **Learner Characteristics and Engagement:** Research often explores the characteristics of MOOC participants, including their motivations, demographics, and learning behaviors. Studies have shown that MOOC learners vary widely, with participants ranging from traditional students to working professionals seeking continuous education. Engagement levels, completion rates, and factors influencing dropout rates have also been investigated.

3. **Pedagogical Design and Effectiveness:** Evaluating the effectiveness of MOOCs in terms of learning outcomes is a common theme. Researchers have investigated various pedagogical strategies, such as the use of multimedia, interactive assessments, and peer-to-peer learning. Studies often compare MOOCs with traditional classroom settings to understand the efficacy of online education.

4. **Challenges and Barriers:** The literature highlights challenges associated with MOOC adoption, including issues related to scalability, quality assurance, and the lack of formal accreditation. Dropout rates, the digital divide, and concerns about the credibility of online credentials are also discussed as potential barriers to widespread adoption.

5. **Institutional Perspectives:** Some studies focus on the perspective of educational institutions, examining

their motivations for offering MOOCs, challenges faced in implementation, and the impact on their overall educational strategies. Institutional adoption is often influenced by factors such as branding, global outreach, and experimentation with new instructional models.

6. **Technological Infrastructure and Design:** Research has explored the role of technology in MOOC adoption, including platform design, analytics, and the integration of MOOCs with existing learning management systems. Technical considerations, such as platform features and user interface design, can impact the overall user experience and learning outcomes.

7. **Professional Development and Lifelong Learning:** MOOCs are often seen as a means for professional development and lifelong learning. Studies investigate the role of MOOCs in upskilling and reskilling the workforce, as well as the motivations of individuals seeking career advancement through online courses.

8. **Cultural and Global Perspectives:** Cultural factors influence the adoption and impact of MOOCs in different regions. Research has explored how cultural contexts shape learner preferences, and how MOOCs can be adapted to cater to diverse educational needs globally.

Including new designs to improve Teaching and Learning

- **Rethinking the Current Syllabus:** This is an excellent opportunity to reevaluate the curriculum and adapt it to blended learning. Students and faculties may find learning more straightforward with the help of an extensive and thorough syllabus. Including a syllabus quiz before going on to the next topic might also help with understanding.
- **Organising the Content:** Time can be saved by topically organising content in an organised way. Chapters, for instance, can be organised into topical divisions and kept in Google Drive folders accessible via shared links. Instructors and students can access resources like PDFs and eBooks more easily with this war Point presentations. Learning can also be reinforced by including test series at the conclusion of each chapter.
- **Orienting the Learner:** An orientation portion with detailed explanations of subjects can aid students in understanding the material better, especially considering the restricted in-person interaction.
- **Moving beyond PowerPoint:** Clarity can be increased by adding audio descriptions to PowerPoint presentations. Learning can also be reinforced by including test series at the conclusion of each chapter.
- **Rethinking Grading Strategies:** Critical thinking abilities and involvement in class can be used to evaluate both faculty and students. Giving comments can help teachers and students alike, improving the learning process.

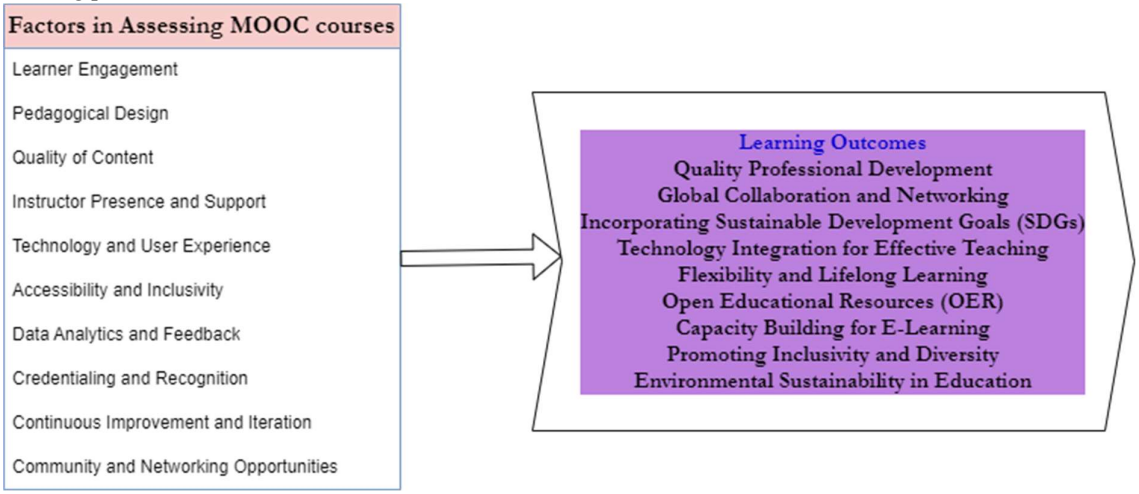

Fig 1: Conceptual Framework on MOOC and its implications

Learning outcomes through MOOC on Professionl development:

Students can expand their knowledge and expertise in a variety of areas, including Professional development, with the help of Online Courses. For students participating in online courses on sustainable/professional

development, the following lists the essential learning objectives:

1. **Enhanced Knowledge of Sustainable Development Concepts:** students get a thorough awareness of the economic, social, and environmental aspects of sustainable development principles. MOOCs on sustainable development frequently address fundamental concepts including the UN Sustainable Development Goals (SDGs), climate change, resource management, social justice, and economic sustainability. After completing these courses, faculty professionals are more qualified to comprehend and instruct these difficult subjects.

2. **Integration of Sustainable Practices:** students are trained to integrate the ideals of sustainable development into their lesson plans and instructional strategies. MOOCs frequently include case studies and real-world examples of how different fields may incorporate sustainable development. By using these ideas, students can create course materials that emphasize sustainability concerns pertinent to their area of expertise and encourage interdisciplinary learning.

3. **Development of Critical Thinking and Problem-Solving Skills:** students sharpen their analytical and problem-solving skills in relation to sustainability issues. Through conversations, tasks, and projects that call for a critical examination of current environmental challenges, MOOCs promote active learning. students acquire the ability to evaluate these problems critically and look for creative solutions, which they can then teach to their pupils.

4. **Familiarity with Global and Local Sustainability Initiatives:** students gain understanding of national and international programmes and laws that support sustainable development. Modules covering diverse national policies, international agreements, and local initiatives are frequently included in MOOCs. By comprehending these frameworks, educators may help students think globally and act locally by placing sustainability initiatives within various geopolitical situations.

5. **Improved Digital Literacy and Pedagogical Skills:** students become more digitally literate and use cutting-edge teaching techniques in blended and online classroom contexts. Participating in MOOCs exposes educators to a range of digital resources and pedagogical approaches that can improve in-person and online learning.

6. **Enhanced Capacity for Research and Interdisciplinary Collaboration: Academics** get knowledge about collaborating on sustainability-related projects and carrying out multidisciplinary research. MOOCs frequently feature cooperative projects and activities with a research focus that encourage interdisciplinary thinking. By incorporating these cooperative methods into their research, students can create relationships between other academic disciplines.

7. **Increased Awareness and Advocacy for Sustainability:** students become fervent advocates for sustainable development and are driven to advance sustainability in their schools and local communities. students can become sustainability champions by being exposed to sustainability concerns and solutions through MOOCs. They could start or take part in committees, policies, and initiatives related to sustainability both inside and outside of their institutions.

8. **Practical Application of Sustainability Projects:** students gain the knowledge and abilities necessary to plan and carry out sustainability programmes. Designing sustainability projects is a need for project-based learning components seen in many MOOCs. students can use these insights to launch related projects at their career, encouraging a practical approach to corporate world.

Research Methodology

The study focused on the students of both private and Government colleges. A total of 145 students were interviewed correlation analysis was conducted, also the study adopted Two Stage Sampling method as sampling technique.

Analysis

Table 1. Number and Percentage of Respondents Based on Demographic Variables

Type of classification	Category	No.of. respondents	Percentage
Gender	Male	56	38.62 %
	Female	89	61.37 %
Age group	20-30	59	40.68 %
	31-40	40	27.58 %
	Above 40	46	31.72 %
Organization	Private	76	52.41 %
	Public	69	47.58 %

Source: Complied by Author

Focus Group Discussion:

Having Focus Group Discussion with the students it was clear that the Students willingness to learn online courses has the impact on skill gap and that prevents psychological needs from having a large impact on adoption of online courses

SEM Model

Table 2: $H2_a$: There is a significant relationship between 'digital capability factors and professional Development through online courses

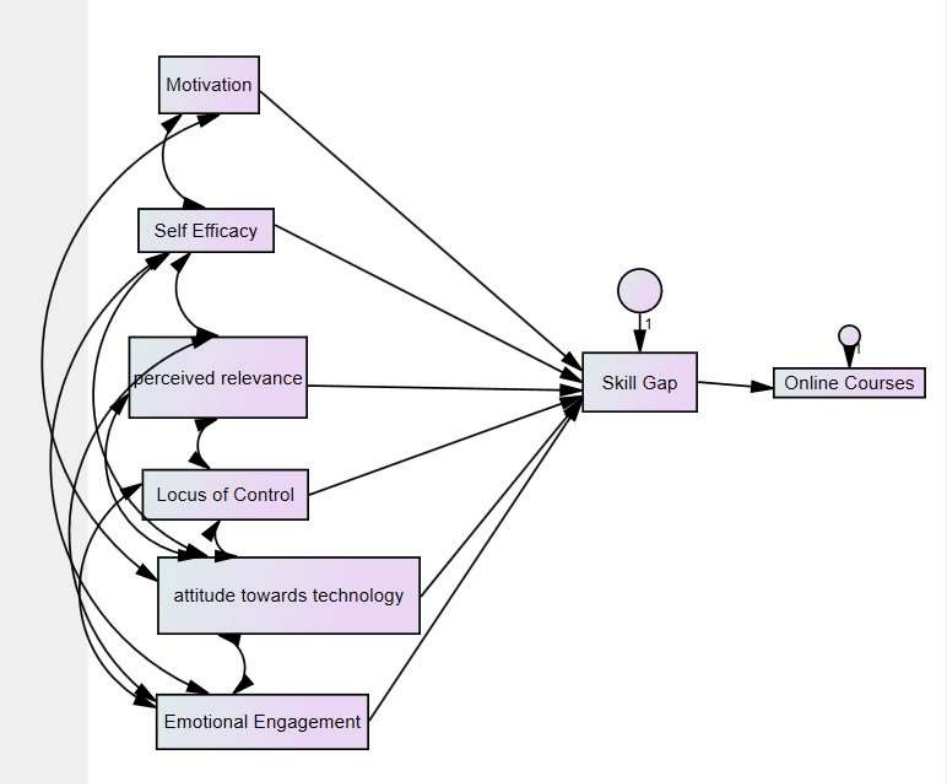

Table No: 4.9.3.2 Model Fit Summary

Variable	Value	Suggested Value
CMIN	5.143	_
Df	3	_
P value	0.162	>0.05 (Hair et al., 1998)
CMIN/df	1.714	<5.00 (Hair et al., 1998)
GFI	0.995	>0.90 (Hu and Bentler, 1999)
AGFI	0.967	>0.90 (Hair et al., 2006)
CFI	0.997	>0.90 (Daire et al., 2008)
NFI	0.993	>0.90 (Hu and Bentler, 1999)
RMSEA	0.045	<0.08 (Hair et al., 2006)
RMR	0.049	<0.08 (Hu and Bentler, 1999)

The model fit summary is given in the table from the SEM analysis. In comparison, the model yielded a chi-square value of 5.143 with degrees of freedom "3" and a probability of 0.162 greater than 0.05, hence H_0 accepted. It is inferred that the fit of the data to the hypothesized model is entirely adequate, and according to the p-value, the model shows a good fit. The alternative criterion CMIN/df = 1.174, which is less than 5 and both conditions are satisfied.

The GFI (Goodness of Fit) and AGFI (Adjusted Goodness of Fit) values are 0.995 and 0.967, which are more significant than 0.9, which indicates the model is a good fit. The CFI (Comparative Fit Index) value is 0.997, also an additional fit condition. Then RMSEA (Root Mean Square Error of Approximation) value is 0.045 and SRMR (Standardized Root Mean square residuals) value is 0.049 which is below 0.08, which indicates model fit. The goodness of fit indices supports the model fit and these emphasized indices indicate the acceptability of this structural model.

Conclusion:

As changes are introduced, online courses providers increasingly provide certification programmes to demonstrate learners' knowledge and skills to future employers. A series of courses and exams are frequently required for certification programmes in order to prove subject-matter expertise. Certifications can be a helpful addition to a CV, demonstrating a commitment to continual learning and professional development, even if they do not carry the same weight as formal degrees. And the psychological/professional factors are associated with the enrolment of online courses among the students of various institutions to cope up with the technological advancements and to increase their potential in enrolling themselves in these courses. It enhances the professional development thereby harnessing environmental sustainability among students in higher education institutions.

Research Implication:

The issue of higher education accessibility is brought up a lot. Higher education enrolment is predicted to increase 314 percent from 99.4 million in 2000 to 414.2 million by 2030.. If we add five years to these forecasts, the number of faculty and students seeking higher education by 2035 is expected to approach 520 million. Transformations in developing and emerging countries are driving global growth, which is expected to intensify in the next decades. The lack of qualified instructors and superior course materials in developing and growing nations presents obstacles to the anticipated rise in higher education. The issue is complicated by national agendas, financial constraints, competence limitations, and the digital divide, making it challenging to gauge its scope. To achieve the best results, colleges should continue to offer both traditional and distance

education, while also promoting the development of high-quality MOOCs. Increasing the number of university campuses, enhancing virtual education, and reducing obstacles to education are merely some of the solutions to this enormous problem. MOOCs can help address socioeconomic concerns in higher education in developing nations, including increasing access and reducing prices for disadvantaged children and adults. A thorough investigation is required to determine the potential of MOOCs for expanding education.

So the study can be extended to

1) Enhancing Quality of Knowledge through Online Courses and Improving Skill Among Teachers

2) Enhancing Quality of Knowledge through Online Courses and Improving Skill Among Engineering College Students

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