



## MOOCs and OER for Enhancing Higher Education: A Study with Special Reference to R.B. Narayanrao Borawake College (Autonomous), Shirampur

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### Abstract:

Higher education in India is undergoing rapid changes due to digital transformation, increased student diversity, and the demand for flexible, learner-centered educational models. Massive Open Online Courses (MOOCs) and Open Educational Resources (OER) have emerged as powerful tools for expanding learning opportunities, reducing costs, and supporting continuous professional development. This research paper examines the role of MOOCs and OER in enhancing higher education, with a special focus on R.B. Narayanrao Borawake (RBNB) College, Shirampur. The study explores student awareness, usage patterns, perceived benefits, and challenges associated with MOOCs and OER in the local context.

A mixed-method approach was used, incorporating survey data, interviews with faculty, and analysis of institutional practices related to digital learning resources. The findings indicate that while awareness of platforms like SWAYAM, NPTEL, Coursera, and e-PG Pathshala is increasing, actual usage is moderate due to limitations in digital literacy, lack of guidance, and infrastructure constraints. Students who actively use MOOCs and OER report enhanced understanding of subjects, improved examination performance, and increased confidence in self-paced learning. Faculty members also recognize their value in supplementing classroom teaching.

The study concludes that strategic institutional support—such as training workshops, MOOC orientation sessions, better digital infrastructure, and integration of MOOCs into curricula—can significantly enhance adoption. Recommendations include creating a Digital Learning Support Centre, appointing MOOC coordinators, and incorporating OER into library services. The paper highlights the potential of MOOCs and OER to transform higher education in semi-urban colleges like RBNB, making learning more accessible, flexible, and future-ready.

### Introduction:

The rapid development of information and communication technologies (ICT) has brought significant changes to higher education worldwide. With the expansion of the internet, digital platforms, and open-access resources, education has become increasingly accessible beyond the traditional classroom. In this context, **Massive Open Online Courses (MOOCs)** and **Open Educational Resources (OER)** have emerged as essential tools for democratizing education and improving learning outcomes.

India's higher education sector, with its large student population and diverse institutions, faces challenges such as limited faculty resources, outdated curricula, uneven quality, and affordability issues. MOOCs and OER provide a solution by offering high-quality learning materials, video lectures, interactive assignments, and certification opportunities at little or no cost. The Government of India has also promoted MOOCs through initiatives such as **SWAYAM**, **NPTEL**, **UGC-MOOCs**, **e-PG Pathshala**, and **National Digital Library of India (NDLI)**.

R.B. Narayanrao Borawake College, Shirampur (RBNB College), affiliated with Savitribai Phule Pune University (SPPU), is a prominent higher education institution in rural Maharashtra. With students from varied socio-economic backgrounds, the college has adopted ICT-enabled teaching and promotes self-learning through digital resources. The study attempts to assess the extent to which MOOCs and OER are used by students and teachers at RBNB College and how they contribute to enhancing the quality of higher education.

This research aims to provide insights into the current scenario and suggests practical recommendations for strengthening digital learning culture within the college.

## Review of Literature:

### 1. MOOCs: Concept and Evolution:

The term MOOC was first popularized in 2008 by Siemens and Downes through the connectivist learning model. By 2012, MOOCs gained global attention through platforms like Coursera, Udacity, and edX. MOOCs are characterized by large-scale participation, open registration, free access to quality content, and flexibility in learning. Studies show that MOOCs enhance self-directed learning, digital literacy, and employability skills.

### 2. OER: Development and Scope:

Open Educational Resources (OER) were formally recognized in 2002 by UNESCO. OER includes textbooks, videos, course modules, assignments, and quizzes that can be freely used, modified, and shared. Projects like OER Commons, MIT Open Course Ware, and Khan Academy have revolutionized access to high-quality educational content.

### 3. Indian Scenario:

India has adopted MOOCs and OER extensively through national platforms like SWAYAM, NPTEL, and e-PG Pathshala.

Research in Indian higher education shows increased use of these resources for supplementary learning, exam preparation, and skill enhancement. However, challenges like language barriers, internet issues, and lack of motivation still exist.

### 4. Institutional-Level Studies:

Studies in rural and semi-urban colleges indicate that while infrastructure is improving, awareness and usage remain inconsistent. Faculty intervention, library support, and administrative encouragement play critical roles in improving adoption.

## Objectives of the Study:

The study aims to:

1. Assess the awareness of MOOCs and OER among students and faculty of RBNB College.
2. Examine the usage patterns of digital learning resources.
3. Identify the perceived benefits of MOOCs and OER in enhancing academic performance.
4. Explore the challenges faced by users while accessing MOOCs and OER.
5. Suggest strategies for strengthening the integration of MOOCs and OER in higher education at RBNB College.

## Problem Statement:

MOOCs and OER offer numerous advantages, their utilization in semi-urban colleges like RBNB College varies greatly. Many students lack awareness, confidence, or digital literacy to use these platforms effectively. There is also limited institutional coordination, and faculty usage is not uniform across departments. Therefore, an in-depth study is needed to understand how MOOCs and OER can more effectively enhance higher education at RBNB College.

**Scope of the Study:**

- Focus on students from UG and PG programs at RBNB College.
- Includes faculty members involved in digital teaching.
- Covers both MOOC platforms and OER repositories.
- Addresses usage in academic subjects, skill development, and exam preparation.

**Research Methodology:**

**1. Research Design:** A mixed-method approach combining quantitative (survey) and qualitative (interviews) methods.

**2. Data Collection Tools:**

- Structured questionnaire (Google Form and paper-based).

- Interviews with faculty and librarians.
- Observation of college ICT practices

**3. Sample Size:**

- 120 students
- 15 faculty members

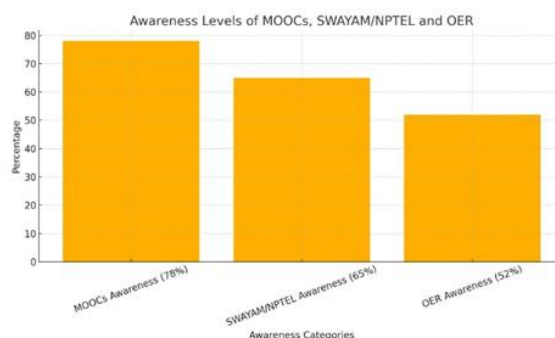
**4. Data Analysis:**

Data were analysed using descriptive statistics, percentage analysis, and thematic coding for qualitative responses.

**Data Analysis and Interpretation:****1. Awareness Levels:**

- About 78% of students had heard of MOOCs. □ 65% were aware of SWAYAM and NPTEL.
- 52% were aware of OER sources like NDLI, e-PG Pathshala, and NROER.

Chart 1: Awareness Levels of MOOCs and OER

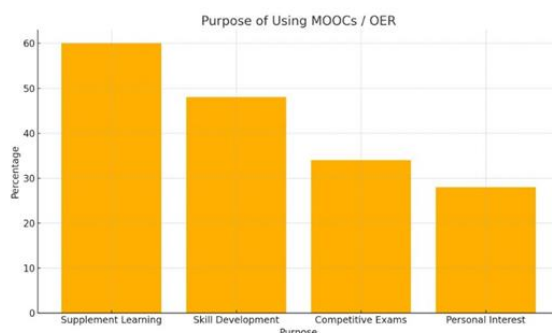
**2. Usage of MOOC Platforms:**

- 40% enrolled in at least one MOOC course.
- SWAYAM and NPTEL were the most used platforms.
- Science students showed the highest usage.

**3. Purpose of Using MOOCs and OER:**

- Students used them for:
- Supplementing classroom learning (60%)
- Skill development (48%)
- Competitive exams (34%)
- Personal interest (28%)

Chart 2: Purpose of Using MOOCs / OER



#### 4. Benefits Reported:

- Better understanding of difficult topics
- Access to expert lectures
- Flexibility in learning
- Improvement in academic results

#### 5. Challenges:

- Internet connectivity issues
- Need for technical support
- Lack of motivation to complete full courses
- Language barriers in some MOOCs

#### 6. Faculty Perceptions:

Faculty believed MOOCs help

- Enrich teaching
- Provide updated content
- Encourage blended learning

However, faculty suggested that college-level structured orientation would increase student participation.

#### Findings:

1. Students at RBNB College show high awareness but moderate usage of MOOCs and OER.
2. Scientific and technical courses have higher adoption than arts and commerce streams.
3. MOOCs significantly improve understanding of complex concepts
4. OER helps students access additional study material for assignments and exams.
5. Infrastructure and digital literacy need systematic improvement.

6. Institutional encouragement and structured interventions are essential.

#### Discussion:

MOOCs and OER are reshaping the learning landscape by offering affordable, accessible, and high-quality educational opportunities. In the context of RBNB College, they serve as valuable supplementary tools, especially in subjects where external expertise or updated content is required. The study highlights that while enthusiasm exists, sustained usage requires institutional strategies.

Blended learning—integrating classroom teaching with online resources—can significantly improve learning outcomes. Teachers can incorporate MOOC videos, OER modules, and digital assessments to make learning interactive. Librarians can curate OER lists and conduct training sessions. Administrators can encourage credit-based MOOC enrolment under SPPU guidelines.

#### Recommendations:

##### 1. For the Institution:

- Establish a **Digital Learning Support Centre**.
- Conduct **MOOC Orientation Programs** every semester.
- Integrate MOOCs into curriculum and credit system.

- Strengthen Wi-Fi and ICT lab facilities.

## 2. For the Library:

- Create an **OER Repository** accessible through the library website.
- Conduct workshops on NDLI, Shodhganga, and e-PG Pathshala.
- Provide printed guides, tutorials, and help manuals.

## 3. For Students:

- Participate in at least one MOOC course each semester.
- Join subject-related OER communities.
- Improve digital skills for better online learning

## 4. For Faculty:

- Encourage blended teaching methods.
- Use OER in lecture preparation.
- Motivate students to enroll in SWAYAM/NPTEL.

## Conclusion:

MOOCs and OER represent a paradigm shift in higher education, enabling open, flexible, and learner-centric instructional models. In semi-urban institutions like RBNB College, these tools have significant potential to bridge learning gaps, enhance student performance, and support continuous professional development. However, realizing this potential requires strategic

institutional collaboration, improved digital infrastructure, and targeted awareness programs.

The study concludes that with systematic adoption, MOOCs and OER can substantially enhance the quality of higher education at RBNB College, making learning more inclusive, accessible, and future-oriented.

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