

APPLICATION OF OPEN LEARNING RESOURCES AND EFFICACY OF TEACHING BUSINESS EDUCATION COURSES IN RIVERS STATE TERTIARY INSTITUTIONS

Amadi, Anita Eberechi

Ignatius Ajuru University of Education, Rumuolumeni, Port Harcourt

anita.amadi@iaue.edu.ng

Abstract

The study ascertained Application of Open Educational Resources and efficacy of teaching Business Education courses in tertiary institutions. The study was carried out in Rivers State tertiary institutions offering Business Education programme. Three specific objectives, research questions and null hypotheses guided the study. The study adopted correlational research design. The population of the study was 105 Business Educators from 6 tertiary institutions in Rivers State. Based on the small population size, the entire population was studied. Two sets of self-structured questionnaire titled “Application of Open Educational Resources (AOER) and Efficacy of teaching Business Education courses ETBEC) were used for data collection. Pearson’s Product Moment Correlation (PPMC) was used to answer the research question and test the null hypotheses at 0.05 level of significance. Findings from the study revealed, that there is a positive relationship between the application of Coursera, edX and Khan open educational resources and the efficacy of teaching of Business Education courses. The result of the study also showed that the calculated r-value for the three hypotheses were greater than the table value of 0.179. Therefore, the null hypothesis which states no significant relationship between OLRs and the efficacy of teaching of Business Education courses is rejected, meaning that there is a “significant relationship between OLRs and the efficacy of teaching Business Education courses. Conclusively, open learning resources have revolutionized the educational landscape and helped Business Educators to deliver content effectively, engage students meaningfully, and achieve desired learning outcomes. It has also helped in classroom interaction, instructional innovation, and assessment effectiveness. It is recommended among others that there should be emulsification of teaching material and resources to enhance the efficacy of teaching, especially Business Education courses.

Keywords: Coursera, edX, Khan Academy, efficacy and teaching

Introduction

Open Learning Resources (OLRs) such as Coursera, edX, and Khan Academy have revolutionized the educational landscape by providing unrestricted access to quality learning materials, they have become transformative tools in modern education, significantly enhancing the teaching and learning process in Business Education thereby transforming teaching and learning processes across disciplines. In a rapidly changing global business environment, Business Education requires continuous adaptation to emerging technologies, management practices, and entrepreneurial skills. In the field of Business Education, where knowledge must align with rapidly evolving business practices and technologies, OLRs serve as a bridge between academic theory and practical business realities. They offer multimedia-based instructional content, real-time learning analytics, and global collaboration features that promote innovation in pedagogy (UNESCO, 2023). The integration of these resources might be of help to enhance the efficacy of teaching, empowering both educators and learners to engage with contemporary business issues and solutions. In this study, teaching efficacy denotes the perceived ability of Business Education lecturers to deliver content effectively, engage students meaningfully, and achieve desired learning outcomes. It encompasses aspects such as lesson delivery, classroom interaction, instructional innovation, and assessment effectiveness, which may be influenced by the use of OLRs.

The pedagogical foundation of OLRs rests on the constructivist learning approach, which emphasizes learner-centered, participatory, and experiential learning. Platforms such as Coursera and edX provide Business Education instructors with massive open online courses (MOOCs) that integrate case studies, simulations, peer assessments, and discussion fora. These features enable students to actively construct knowledge rather than passively receive information (Chen & Zhang, 2021). By participating in



globally networked learning environments, learners are exposed to diverse business models and management practices, thus broadening their analytical and decision-making competencies. Coursera is an open online learning platform that partners with universities and industry experts to offer free and paid courses, certificates, and degree programs. In this study, Coursera and edX are open learning resources whose recognized potential and application in the teaching of Business Education courses remains limited, inconsistent, and under-researched, particularly in developing educational contexts (UNESCO, 2023; Okafor & Eze, 2020). These resources are needed by Business Education lecturers to improve teaching efficacy through access to global business knowledge, case studies, and professional development materials.

edX Open Learning Resources refer to a collection of free and accessible online educational materials and courses hosted on the edX platform. The platform was designed to promote open access to quality education and to support lifelong learning through technology-enhanced teaching. Reich & Ruipérez-Valiente (2019) assert that edX is an open online learning platform that provides massive open online courses (MOOCs), micro-credentials, professional certificates, and even online degree programs in various disciplines. Its open learning resources include video lectures, interactive simulations, discussion forums, assignments, and digital textbooks that can be accessed by anyone with an internet connection, often free of charge or at a low cost. edX open learning resources represent a vital innovation in global education. By combining open access, academic excellence, and technological integration, edX empowers both students and educators to engage in flexible, inclusive, and high-quality learning experiences that transcend traditional classroom boundaries. The relationship between edX open learning resources and the efficacy of teaching Business Education courses is deeply rooted in how open online platforms enhance instructional quality, learner engagement, and pedagogical innovation. edX, a massive open online course (MOOC) platform provides free and accessible digital learning resources aimed at democratizing education globally (Reich & Ruipérez-Valiente, 2019). Through its open access model, edX has transformed teaching and learning by providing educators and learners with high-quality, interactive, and globally recognized educational content (Korn & Levitz, 2020). The efficacy of teaching in Business Education depends significantly on the relevance and quality of instructional content. edX offers courses designed by top universities and industry experts in areas such as entrepreneurship, finance, accounting, and marketing, which can be integrated into classroom instruction to enrich course delivery. Educators who adopt edX open learning resources gain access to up-to-date global business trends, real-world case studies, and technological tools that improve the quality and relevance of their teaching (Laurillard, 2016). This combination of edX and Khan academy helps Business Education teachers bridge the gap between theoretical knowledge and current industry practices, leading to improved instructional outcomes.

Khan Academy is a non-profit educational platform that offers free instructional videos, interactive exercises, and practice assessments across various subjects. Khan Academy represents a digital resource that supports Business Education teachers in explaining complex concepts such as accounting, economics, and business mathematics through self-paced, visual, and interactive learning materials. Khan Academy (2022) is of the view that this resource ‘Khan Academy’ is designed to support self-paced learning through short instructional videos, practice exercises, and instant feedback mechanisms. For business education students, this format helps in mastering quantitative subjects such as accounting, business mathematics, and economics. It promotes differentiated instruction, allowing learners of varying abilities to progress at their own pace while enabling instructors to provide targeted support (Khan Academy, 2022). Hence, the pedagogical integration of OLRs ensures inclusivity, flexibility, and continuity in teaching Business Education courses. The use of OLRs fosters digital literacy and competence, which are critical for both teachers and students in today’s technology-driven business environment. Educators who utilize Coursera and edX gain access to advanced instructional tools such as video editing, learning analytics, and online assessments. These tools not only enhance

Application of open learning resources and efficacy of teaching business education ...

teaching delivery but also improve educators' confidence in using technology for pedagogical innovation (Okafor & Eze, 2020). Likewise, students acquire transferable digital skills, including online collaboration, data interpretation, and self-regulated learning skills that are essential for modern entrepreneurship and employability. Moreover, the integration of open resources aligns with global educational goals that emphasize lifelong learning and digital inclusion. UNESCO (2023) notes that OLRs democratize education by providing equitable access to knowledge, especially for learners in developing economies. In the context of Business Education, this means that students from different regions can learn international business practices and participate in global virtual internships or capstone projects. Such exposure enhances the global competence of learners and prepares them for competitive careers in business and management which has to do with efficacy of teaching.

The efficacy of teaching Business Education is determined by the ability of instructors to deliver relevant, practical, and engaging content. OLRs enhance this efficacy by providing instructors with updated and evidence-based instructional materials developed by leading universities and business schools. Open Learning Resources foster inclusive and lifelong learning, making Business Education more accessible to a wide range of learners irrespective of geographical or financial limitations. Educators also benefit from these platforms through access to updated teaching content, instructional tools, and professional development opportunities. For example, Coursera offers instructor-guided resources in entrepreneurship, finance, marketing, and organizational behaviour that teachers can adapt to their course curricula (Coursera, 2024). Similarly, edX courses from institutions such as MIT and Harvard enable teachers to integrate real-time business analytics and sustainability concepts into classroom instruction (Chen & Zhang, 2021). Through these platforms, assessment and feedback mechanisms are also enhanced. Instructors can use built-in tools such as quizzes, peer reviews, and progress tracking to evaluate students' performance and adjust instructional strategies accordingly. Learners benefit from immediate feedback, interactive discussion forums, and access to supplementary materials that support independent study. Consequently, the integration of OLRs leads to improved engagement, deeper understanding of business concepts, and enhanced problem-solving abilities among students.

A key contribution of open learning resources is their ability to promote inclusivity in education. Business Education often attracts diverse learners, including full-time students, working professionals, and entrepreneurs seeking to upgrade their skills. OLRs like Coursera and Khan Academy provide flexible learning pathways that accommodate different schedules, learning styles, and prior knowledge levels. According to Okafor and Eze (2020), this flexibility increases student motivation and retention, particularly in blended or distance learning environments. Furthermore, OLRs encourage lifelong learning by enabling continuous professional development. Educators and students can enroll in certificate programs or micro-credentials that enhance their expertise in areas such as digital marketing, financial analysis, or business communication (Coursera, 2024). This lifelong learning culture supports the continuous improvement of teaching quality and sustains innovation in Business Education programs. Open Learning Resources such as Coursera, edX, and Khan Academy significantly enhance the efficacy of teaching Business Education courses by improving instructional quality, promoting digital competency, and fostering inclusive, learner-centered education. They provide opportunities for both educators and students to access global business knowledge, engage in collaborative learning, and apply theoretical principles to real-world contexts. The integration of OLRs into Business Education not only aligns with global digital transformation trends but also ensures that learners develop the critical, analytical, and entrepreneurial skills needed for success in a dynamic business environment. Therefore, institutions offering Business Education programs should prioritize the adoption and integration of OLRs to strengthen teaching effectiveness and learning outcomes in the 21st century.

Statement of the Problem

The effectiveness of Business Education largely depends on the instructional approaches, teaching materials, and technological tools employed by educators to facilitate learning. In recent years, the



rapid advancement of digital technology and the global shift toward open access education have brought Open Educational Resources (OERs) including platforms such as Coursera, edX, and Khan Academy into the mainstream of higher education. These resources are designed to provide free and adaptable instructional content that supports innovative, flexible, and inclusive teaching. However, despite their recognized potential, the application of OERs in the teaching of Business Education courses remains limited, inconsistent, and under-researched, particularly in developing educational contexts (UNESCO, 2023; Okafor & Eze, 2020). Business Education, as a discipline aimed at equipping learners with entrepreneurial, managerial, and technological skills, demands dynamic teaching strategies that reflect real-world business practices. Traditional methods of instruction often dominated by lectures, textbooks, and static teaching materials are increasingly inadequate in addressing the diverse learning needs of today's students or in preparing them for the digital economy. While OERs offer rich, up-to-date, and interactive learning materials that can enhance teaching efficacy, many educators in Business Education still face barriers such as inadequate digital literacy, poor internet access, lack of institutional support, and limited awareness of OER integration strategies (Adebayo & Lawal, 2022). Consequently, the transformative potential of OERs in improving teaching effectiveness, learner engagement, and practical competence remains largely untapped. Moreover, empirical evidence on how the use of OERs directly influences the efficacy of teaching Business Education courses in terms of teaching quality, student participation, and learning outcomes is still insufficient. There is also a lack of clarity regarding the extent to which teachers utilize these resources for lesson planning, content delivery, assessment, and professional development. Therefore, the core problem this study seeks to address is the limited application and empirical evaluation of Open Educational Resources in enhancing the efficacy of teaching Business Education courses. Without adequate exploration of this relationship, Business Education may continue to rely on outdated pedagogies, thereby hindering innovation, digital competency, and the achievement of learning outcomes aligned with 21st-century business demands. This study, therefore, becomes necessary to examine how enhances the teaching efficacy of Business Education courses.

Purpose of the Study

The main purpose of this study is to examine the application of open learning resources (OLRs), specifically Coursera, edX, and Khan Academy and their influence on the efficacy of teaching Business Education courses. Specifically, the study aims to:

1. Determine how the application of Coursera enhances the teaching efficacy of Business Education courses.
2. Determine how the application of edX enhances the teaching efficacy of Business Education courses
3. Determine how the application of Khan enhances the teaching efficacy of Business Education courses

Research Questions

To guide the study, the following research questions are raised.

1. How does the application of Coursera enhance the teaching efficacy of Business Education courses?
2. How does the application of edX enhance the teaching efficacy of Business Education courses?
3. How does the application of Khan enhance the teaching efficacy of Business Education courses?

Research Hypotheses

The following hypotheses was tested at the 0.05 level of significance:

H₀₁: There is no significant relationship between the use of Coursera and the efficacy of teaching Business Education courses.

H₀₂: There is no significant relationship between the use of edX and the efficacy of teaching

Business Education courses.

H₀₃: There is no significant relationship between the use of Khan Academy and the efficacy of teaching Business Education courses.

Methodology

The researcher adopted a correlational research design for the study. The study was carried out in higher institution in Rivers state offering Business Education namely Rivers state university, Ignatius Ajuru University of Education, University of Port Harcourt, Federal College of Education (Technical) Omoku, Captain Elechi Amadi Polytechnic and Ken Saro-Wiwa Polytechnic. The population for this study consists of 105 Business Educators (Lecturers) There was no sample nor sampling technique hence the entire population was used for analysis. Two instruments were used to elicit data for the study namely Application of Open Educational Resources (AOER) and Efficacy of teaching Business Education courses (ETBEC) questionnaire. The instruments were validated by three experts and also ascertained reliable for the study through test-retest method and coefficient index of 0.89 and 0.84 were obtained. The instruments were administered to the respondents by the researcher with the help of 5 assistants. The data collected were organized and analyzed around the research questions and hypotheses. The research question and hypotheses were answered and tested with the use of Pearson Product Moment Correlation (PPMC) coefficient to determine the relationship between Application of Open Educational Resources and efficacy of teaching Business Education courses in Rivers state tertiary institutions. The research questions were answered based on the following values: $\pm 0.10 - 0.39$ Low relationship $\pm 0.40 - 0.69$ Moderate relationship $\pm 0.70 - 0.99$ Strong relationship ± 1.00 - and above Very strong relationship. Decision for the acceptance and rejection of each research questions and hypothesis was made as thus: if the calculated “r” value is greater than the table value, the hypothesis was rejected and if otherwise, it is retained.

Results

Research Question 1: How does the application of Coursera enhance the teaching efficacy of Business Education courses.?

Table 1: *Relationship between the application of Coursera and teaching efficacy of Business Education courses*

		Application of Coursera	Efficacy of teaching Business Education courses
Application of Coursera	Pearson Correlation	1	.850
	Sig. (2-tailed)		.000
N		105	105
Teaching efficacy of Business Education Courses	Pearson Correlation	.850	1
	Sig. (2tailed)	.000	
	N	105	105

The above table shows that there is a positive relationship between the application of Coursera and the teaching efficacy of Business Education courses. The table show that the calculated ‘r’ value is greater than the table value of 0.179. The calculated ‘r’ value of 0.85 as shown on the table indicates that it falls within the third category of ± 0.70 to 0.99 which is strong positive relationship, this also show that the relationship is of high extent.

Research Question 2: How does the application of edX enhance the teaching efficacy of Business Education courses.?

Table 2: *Relationship between the application of edX and teaching efficacy of Business Education courses*



		Application of edX	Efficacy of teaching Business Education courses
Application of edX	Pearson Correlation	1	.819
	Sig. (2-tailed)		.000
N		105	105
Teaching efficacy of Business Education Courses	Pearson Correlation	.819	1
	Sig. (2tailed)	.000	
N		105	105

The above table shows that there is a positive relationship between the application of edX and the teaching efficacy of Business Education courses. The table show that the calculated ‘r’ value is greater than the table value of 0.179. The calculated ‘r’ value of 0.81 as shown on the table indicates that it falls within the third category of ± 0.70 to 0.99 which is strong positive relationship, this also show that the relationship is of high extent.

Research Question 3: How does the application of Khan enhance the teaching efficacy of Business Education courses

Table 3: Relationship between the application of Khan and teaching efficacy of Business Education courses

		Application of Khan	Efficacy of teaching Business Education courses
Application of Khan	Pearson Correlation	1	.710
	Sig. (2-tailed)		.000
N		105	105
Teaching efficacy of Business Education Courses	Pearson Correlation	.710	1
	Sig. (2tailed)	.000	
N		105	105

The above table shows that there is a positive relationship between the application of Khan and the teaching efficacy of Business Education courses. The table show that the calculated ‘r’ value is greater than the table value of 0.179. The calculated ‘r’ value of 0.71 as shown on the table indicates that it falls within the third category of ± 0.70 to 0.99 which is strong positive relationship, this also show that the relationship is of high extent.

Hypothesis 1: There is no significant relationship between the use of Coursera and the efficacy of teaching Business Education courses

Table 4: Relationship between the application of Coursera and teaching efficacy of Business Education courses

		Application of Coursera	Efficacy of teaching Business Education courses
Application of	Pearson Correlation	1	.850

Application of open learning resources and efficacy of teaching business education ...

Coursera	Sig. (2-tailed)		.000
N		105	105
Teaching efficacy of Business Education Courses	Pearson Correlation	.850	1
	Sig. (2tailed)	.000	
	N	105	105

Table 4 shows that the calculated r-value of 0.85 is greater than the table value of 0.179 at 0.05 level of significance. Therefore, the null hypothesis which state that Coursera open learning resources (OLR) has no significant relationship with teaching of Business Education courses is rejected, meaning that there is a significant relationship between Coursera and the teaching efficacy of Business Education courses.

Hypothesis 2: There is no significant relationship between the use of edX and the efficacy of teaching Business Education courses

Table 5: *Relationship between the application of edX and teaching efficacy of Business Education courses*

		Application of edX	Efficacy of teaching Business Education courses
Application of edX	Pearson Correlation	1	.800
	Sig. (2-tailed)		.000
N		105	105
Teaching efficacy of Business Education Courses	Pearson Correlation	.800	1
	Sig. (2tailed)	.000	
	N	105	105

The above table shows that the calculated r-value of 0.80 is greater than the r-critical value of 0.179 at 0.05 level of significance. Therefore, the null hypothesis which states that there is no significant relationship between the use of edX and the efficacy of teaching Business Education courses is rejected, meaning that there is a “significant relationship.

Hypothesis 3: There is no significant relationship between the use of Khan and the efficacy of teaching Business Education courses

Table 6: *Relationship between the application of Khan and the teaching efficacy of Business Education courses.*

		Application of Khan	Efficacy of teaching Business Education courses
Application of Khan	Pearson Correlation	1	.710
	Sig. (2-tailed)		.000
N		105	105
Teaching efficacy of Business Education Courses	Pearson Correlation	.710	1
	Sig. (2tailed)	.000	
	N	105	105

The above table shows that the calculated r-value of 0.71 is greater than the r-critical of 0.179 at 0.05 level of significance. Therefore, the null hypothesis which states there is no significant relationship



between the use of Khan and the efficacy of teaching Business Education courses is rejected, meaning that there is a significant relationship.

Discussion

The application of Coursera and the teaching efficacy of Business Education courses. Correlation 1 reveals that there is a significant relationship between the application of Coursera and the teaching efficacy of Business Education courses. This finding is in line with the view of Okiridu, Ogwunte and Godpower (2024). These scholars carried out a study captioned ‘Emerging Technologies Adoption for Improved Job Efficiency in a Knowledge -Driven Work Environment’. The study focused on the readiness of Business Education postgraduate students to adopt emerging technologies for improved effectiveness in a knowledge-driven work environment. The study was guided by two specific objectives, research questions, and hypotheses. A descriptive survey design was adopted. The population consisted of 111 Business Education postgraduate; no sampling was done. Mean and Standard Deviation were used to answer the research questions, while t-test was used to test the hypotheses at 0.05 significance level. The findings revealed that postgraduate students in Rivers State universities agreed to a high extent that they are ready to adopt cloud-based platforms and artificial intelligence for improved job efficiency in a knowledge-driven work environment. The scholars in their view states that these technologies can be entirely new or involve innovative uses of older technologies, and they have the potential to disrupt current practices. Key characteristics include being radically new or innovative, experiencing rapid growth, having a clear direction, making a significant impact, and being surrounded by uncertainty and ambiguity. Emerging technologies significantly influence various aspects of society and the economy, though their impact is often unpredictable in early stages.

The application of edX and the teaching efficacy of Business Education courses. Correlation 2 reveals that there is a significant relationship between the application of edX and the teaching efficacy of Business Education courses This finding is supported by Okiridu and Amadi (2017) who asserted that adequate teaching must be planned to x-ray the competencies of the Educators who will in-turn inculcate the skills, knowledge and experience to the learner (student). Education no matter the level differs in nature, scope and formation; its methods include storytelling, discussion, training and teaching. It the process of imparting or acquiring general knowledge, developing the powers of reasoning and judgement and generally preparing oneself or others intellectually for mature life.

The application of Khan and the teaching efficacy of Business Education courses Correlation 3 reveals that there is a significant relationship between the application of Khan and the teaching efficacy of Business Education courses (where $r = 0.71$ and critical value $= 0.179$). The result of the study supports the assertion of Okiridu and Nweye (2024) who carried out a study titled ‘Emulsification of Instructional Materials and Effective Teaching of Business study in Junior Secondary Schools in Port Harcourt, Rivers State’. Three research questions and three null hypotheses were formulated and tested at 0.05 level of significance. The study adopted a correlational research design. The population of the study comprised 39 Business Study Teachers in twenty-three (23) public junior secondary schools in Port Harcourt, Rivers State, Nigeria. Due to the manageable size of the population, the entire population was studied without sampling. The instruments for data collection were titled “Emulsification of Instructional Materials questionnaire (EOIMQ) and Effective Teaching of Business study Questionnaire (ETOBSQ). A reliability coefficient of 0.81, 0.89 and 0.88 were obtained for the three sections of the instrument respectively which shows that the instruments were reliable for the study. Data collected were analyzed and the hypotheses were tested using Pearson Product Moment Correlation statistics. The hypotheses were further subjected to t-transformation to establish the significance of the r-value at of 0.05 level of significance. The results of the data analyzed revealed that there is a high positive relationship between emulsification of instructional materials and effective teaching of business study in junior secondary schools.

Conclusion

Application of open learning resources and efficacy of teaching business education ...

The study revealed a positive and significant relationship between the application of open learning resources (Coursera, edX & Khan) and the teaching efficacy of Business Education courses. They study also show that open Learning Resources (OLRs) Coursera, edX, and Khan Academy have revolutionized the educational landscape by helping Business Educators to deliver content effectively, engage students meaningfully, and achieve desired learning outcomes. It also helps in classroom interaction, instructional innovation, and assessment effectiveness.

Recommendations

It is recommended among others that

1. There should be emulsification of teaching material and resources to enhance the efficacy of teaching, especially Business Education courses.
2. Application of open learning resources (OLRs) such Coursera, edX and Khan in classroom pedagogy should be made compulsory for Educators to ensure that teaching is effective done
3. Training of Educators to master the use of these resources should be made every quarter of the year.

References

- Adebayo, F. A., & Lawal, A. M. (2022). Digital transformation and open educational resource adoption in Nigerian higher education. *Journal of Educational Technology and Innovation*, 6(3), 89–104.
- Chen, L., & Zhang, W. (2021). Integrating online learning platforms into business education: Opportunities and challenges. *Journal of Business Education and Technology*, 8(2), 45–57.
- Coursera. (2024). About Coursera for universities and educators. Retrieved from <https://www.coursera.org>
- Khan Academy. (2022). Empowering learners with free online education. Retrieved from <https://www.khanacademy.org>
- Korn, M., & Levitz, J. (2020). Harvard and MIT to sell edX to 2U for \$800 million. *The Wall Street Journal*.
- Laurillard, D. (2016). *Teaching as a design science: Building pedagogical patterns for learning and technology*. Routledge.
- Okafor, J. C., & Eze, M. N. (2020). Open educational resources and digital learning in Nigerian business education. *African Journal of Education and E-Learning*, 5(1), 112–125.
- Okiridu, O.S.F., & Amadi, A.E. (2017). Planning and Achievement of Educational Objectives of Basic Level Programme of Secondary Schools in Ogba/Egbema/Ndoni Local Government Area. *Journal of Technical and Science Education (JOTASE)*. 20 (1&2). 156-166.
- Okiridu, O.S.F.; Nweye D. (2024_ Emulsification of Instructional Materials and Effective Teaching of Business study in Junior Secondary Schools in Port Harcourt, Rivers State. *R & A Publications International Journal of Contemporary Academic Research* 5(4) 57-70.
- Okiridu, O.S.F.; Ogwunte, P.C.; Godpower, Y.J. (2024). Emerging Technologies Adoption for Improved Job Efficiency in a Knowledge -Driven Work Environment *World Journal of Innovation and Modern Technology*: 8(6). 56-66
- Reich, J., & Ruipérez-Valiente, J. A. (2019). The MOOC pivot. *Science*, 363(6423), 130–131. <https://doi.org/10.1126/science.aav7958>
- UNESCO. (2023). *Open Educational Resources (OER) for inclusive and equitable quality education*. Paris: UNESCO Publishing.