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## SCIENTIFIC PRODUCTION RELATED TO SDG 4: A GLOBAL BIBLIOMETRIC ANALYSIS

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**Abstract:** The quality of teaching at the World Economic Forum in Davos 2021 discovered the Global Value Index in Education around the world, within the new devices There are several devices not only the new Information and Communication Technologies (ICT), but also the skills that students must create.

The exploration depended on an illustrative, review, bibliometric study, the search was carried out using the descriptors: quality of schooling, instructional models, instructional hypotheses.

Therefore, the exploration was expected to audit the condition of logical creation over expanded reality in the formation. To do this, the Scopus information base was used to acquire an example of 1703 articles that were dissected by a progression of bibliometric pointers.

**Keywords:** Education, Quality, Research, Scopus, Index, development.

## INTRODUCTION

The World Economic Forum in Davos 2021, discovered the Global Education Quality Index around the world. Singapore ranked first, followed by Switzerland, Finland ranked third, and Qatar is not only fourth in the world, but the most distinctive within the Arab district. The positioning of nations in the Report depends on the Global Competitiveness Index (Global Competitiveness Index). The World Economic Forum determines the record ratings through the assortment of public and exceptional information related to the 12 central pillars (The, n.d. ), which implies: “establishments, macroeconomic development and climate, well-being and fundamental education, schooling and university preparation, and the competition of commodity markets and the efficiency of the labor market, the improvement of the market of capital, the mechanical state, the size of the market, the advancement and development

of companies (**Innovation as a figure of intensity Latin America, n.d**).

Head of State Lee Kwan understood that education is the key in upgrading the workforce to achieve financial goals, and Singapore's monetary requirements took an important part in the training strategy (**Global Education Quality, 2021**).

This new push has also seen "instruct less, find out more" focus on training strategies and reduce the volume of content to account for reflection, similar to Qatar, which is the main involvement with the Arab world, where the vision and objectives for the year 2030 are to exploit regular wealth (**Global Educational Quality, 2021**) of oil and gas revenues and consequently increase the efficiency and capacity of human energy (**Suárez Flórez, 1991**), given through university and pre-university educational programs and the use of learning procedures (**Contreras Bravo et al., 2022**). In reality, it is very significant that Qatar allocates 3.2% of its public allocation and approximately 12% of its public use to training (**Educational Quality Worldwide, 2021**).

Within the new devices, we must not only think about the new Information and Communication Technologies (ICT), but also about the skills that students must create (**Sánchez, 2016**). Currently, young people must face a changing society impacted by the end of lines at the level of development and by the fusion of new devices in their stage of development and the consequent shift in competence. This new model blesses the advancement of self-direction capabilities and skills (**Romero and Pérez, 2009**).

The preparation of students must incorporate models focused on the work approach and confrontation of the subjects, the creation of competencies and an evaluation model that favors student learning. The objectives of this exam are to ensure

a quality schooling system that enhances constant learning and cultivates the human turn, within the structure of virtues and moral standards consistent with the solidarity turn.

## LITERATURE REVIEW

In quality training, relational skills act on the student's degree of advancement by creating systemic devices, due to the consolidation of the educator's pleasant learning procedure, allowing the student to alter the individualistic and serious attitude, expanding his inspiration, independence and obligation. through dynamic and useful correspondence (**Garrote Rojas et al., 2019**).

As of the inception of the Sustainable Development Goals (SDGs), there are 11 nations facing challenges in achieving an end, they have experienced problems in maintaining ecological quality under strict restrictions since the Sustainable Development Goals were introduced. To address green corruption, monetary development, clean energy, and quality training, we analyze these nations' innovation approaches in this review. In the range of 1990 and 2017, we use the IPAT system and heterogeneous window leaf drop tests to direct the experimental examination. We intend to address SDG 13, SDG 4, SDG 8, SDG 9, SDG 7 and SDG 10 in view of the review (**Sinha et al., 2020**).

Most nations including created nations are struggling to make a system of inbuilt approach for practical improvement of values training. Creating approaches that advance consciousness is difficult enough for created nations, and this study makes a difference. Somewhere between 1990 and 2015, this study examines the effect of sustainable energy on fossil fuel byproducts with respect to education, normal asset abundance, unknown direct speculation, and financial development (**Zafar et al., 2020**).

Elective school is an incredible place to explore different avenues regarding novel thoughts that can drive global instructional change. The three elective schools that have been investigated through ethnographic methodology and the historical narrative approach, emerged as a reaction to the disappointment and betrayals of the conventional school (brutality, evasion, tyranny, social colonialism, unsustainability...), allowing us to break down how to build a model that seeks to no longer legitimize and sustain these social and ecological shames. The article questions the adequacy of the usual values of the daily agenda, harmony, consideration, conjunction or investment. The results tell us the best way to make a school that values each student, supports cooperation, transmits assets reasonably, and fosters a student body equipped to perceive shameful acts and rally against them (**Carneros y Murillo, 2017**).

This study inspects the effect of data innovation on comprehensive human improvement in sub-Saharan Africa somewhere between the range of 2000 and 2012. The examination attempts to answer a basic question: what role does fundamental conventional instruction play in the effect of the entry of the telephone into integral human improvement in sub-Saharan Africa? The test depends on quantitative instrumental relapse. This research discovered that low essential instruction decreases the effect of PDA infiltration on the integral human turn. This finding must be perceived in light of how the proportion of educators of secondary students address an focusing disorder because of how it is determined. Thus, an increasing proportion demonstrates a decreasing level of education. Subsequently, the decline in the quality of instruction reduces the constructive outcome of portable communication in the comprehensive turn of events. All states of sustainable human improvement incorporate

this trend (**Asongu y Odhiambo, 2019**).

The 2030 Agenda for Sustainable Development focuses on widespread and lasting open-door learning for all, and the new goals build on the previous Millennium Development Goals, expanding and extending the reach of valuable school systems across the world. Unlike the Millennium Development Goals, which focused on widespread essential education, the Sustainable Development Goals recall tertiary training for the global improvement plan. Higher education was considered fundamental in the Dakar 2000 system, but was excluded as an objective. However, it appeared implicitly as a means of support for different objectives, such as the skills of young people or the quality of instructors. Advanced education is now a vital apparatus for achieving Education Goal 4: comprehensive, unbiased, quality education for all.

This article evaluates the incorporation of advanced education in the plans being developed and the consideration of the SDGs in equal but divided university and global plans. Finally, two fundamental components for a rejuvenated work of advanced education in practical improvement are freely supported research and territorial advanced education organizations (**Owens, 2017**).

Social change and the evolution of events are increasingly important. To achieve genuine change, the 2030 plan (UN, 2015) and the Global Action Agenda perceive the importance of education and focus on it. The goal is to ensure that all students receive a quality education and are able to sustain feasible change. Therefore, the preparation of educators must be taken into account: the implementation of education for economic progress will generally depend on prepared and serious instructors who are inspired to influence change. This alludes to what information and skills instructors must

have to be dynamic influencers and what is expected to foster these capabilities. However, how might instructor training respond to this? To answer this, the creators present and examine an open learning climate encouraged by the living lab. Substudents work on real projects with accomplices experienced in school practice on sustainability issues. Therefore, students learn and genuine tasks are completed, changing educational practice and contributing to social change. (Bürgener y Barth, 2018).

It is a set of desires and goals for a higher future for the world. markers that help meet the objective. Goal 4 advances quality training, while Goal 4.7 addresses Education for Sustainability. Be that as it may, developing an observation and evaluation framework for Objective 4.7 has been a trial. The goal of this study was to foster a meaningful evaluative cycle. We used discursive mediation with reciprocal encounters and model ideas in a preparation study. We then developed a modified competency model, taking into account the previous competency models, but with intrapersonal competencies, a self-reflective validation scheme, a non-formal learning approach and an explicit agreement with the prerequisites of SDG 4.7. Education plays a negative role in meeting the 2030 Agenda and the SDGs, as Education for Sustainable Development (ESD) expects people to create “key skills” aligned with innovative learning hypotheses, as well as other general skills and explicit from the creators. Instruction plays a negative role in meeting the 2030 Agenda and the SDGs. We infer that Education for Sustainable Development (ESD) expects people to create “key capabilities” aligned with breakthrough learning hypotheses, as well as other general and explicit from the environment (Giangrande et al., 2019).

## METHOD

The examination was based on a clear bibliometric review study (Montero y León, 2002). 879 articles distributed around the world were examined, during the years 2015 to 2021. The data was collected on February 15, 2022 through Scopus, the search was carried out using the keywords: quality instruction, instructional models, instructional hypotheses. The engagement test was completed using an Excel sheet with several factors to break down, including journal, topic, writers’ partnership establishment, article type, year of distribution, number of writers, topics of study and the focus of the review. They have been used for research and to see the indicators of dispersion, breaking down the rates of appearance and finding the graphs of the Bibliometric Study of the files archived in Scopus on school quality that are connected with Educational Quality for the correlation of the values and examination of standard lines. Several measures were used to examine the data, for example, rates, Pearson’s ratio coefficient, relapse coefficient, and expectancy coefficient. Finally, clear measures were used to investigate the results. The bibliometric indicators analyzed were reference, content and strategy.

## RESULTS

To meet the objectives of the review, we coordinated the results in six areas. Firstly, we present the circulation of the volume and the annual development of distributions by narrative typology, secondly, we present the ten writers for the dynamics in the distribution of writing related to the quality of teaching, thirdly, we present the top ten dynamic organizations in the distribution of writing related to the quality of training, fourthly, we present the top ten most dynamic journals in the distribution of writing related to the quality of teaching (2015 - 2021), in

Fifth, we present the top ten most persuasive single articles in the distribution of writing related to the quality of teaching (2015 - 2021), finally, the table of examination topics in writing related to the quality of teaching and instructional development.

### NUMBER OF CITATIONS PER YEAR OF PUBLICATION

The first of the bibliometric signs of this study is the fleeting advance of the number of references in terms of the extended distribution time.

After the breakdown of Figure 1. We found from the search performed on [www.scopus.com](http://www.scopus.com), of 1703 records connected with quality instruction in general between the long periods of 2015 - 2021, such an information channel comparable to the topic of interest, thus obtaining 879 pieces of information.

We present in Figure 1. the volume of development of the distributions between the years 2015 - 2021, how many distributions were delivered in the year 2020 and the smallest measure of the distributions in the year 2015.

The model that best fits the way each person behaves is the logarithmic one. We can see that of the 879 (100%) articles, in 2015 (9.33%) there are 82 articles, in 2016 (9.44%) there are 83 articles, in 2017 (10.81%) there are 95 articles, in 2018 (14.68%) there are 129 articles, in 2019 (17.06%) there are 150 articles, In the year 2020 (22.98%) there are 202 articles, in the year 2021 (15.70%) there are 138 articles.

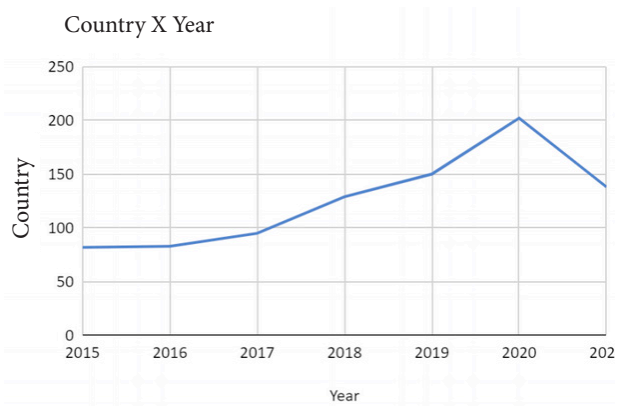


Figure 1. The annual production of original articles published between 2015 and 2021 in “Quality Education”.

Source: Scopus database.

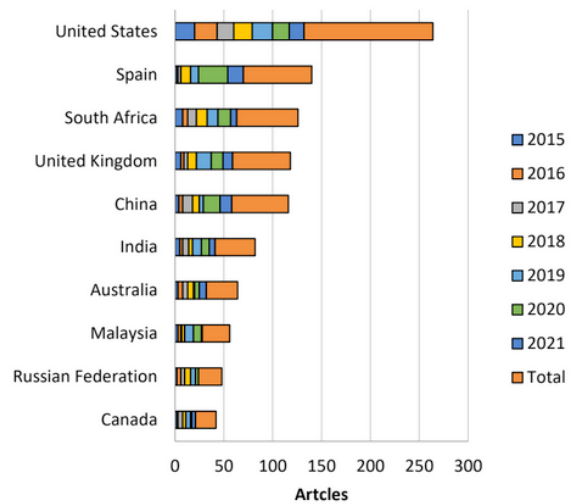


Figure 2. Top ten in annual production of original articles published between 2015 and 2021 in “Quality Education”

Source: Scopus database.

### THE TOP TEN ACTIVE AUTHORS (2015 – 2021)

The results show that the period between 2015 and 2021 will be the most productive time of schooling on the planet.

According to the creators and their distributions in the disaggregated research improvement space, it is feasible to recognize and specify within the top ten creators listed in Table 1.

Rank	Author	Affiliation	Frecuency	% (N = 879)	H Index*	Time cited*
1 <sup>a</sup>	Ho M.-T.	Centre for Interdisciplinary Social Research, Phenikaa University, Yen Nghia Ward, Ha Dong District, Hanoi	3	0.34	11	35
1b	Nguyen M.-H	Department of Basic, Vietnam Academy for Ethnic Minorities, Hanoi, 100000, Viet Nam	3	0.34	10	35
1c	Vuong Q.-H.	Tran, T., Department of Basic, Vietnam Academy for Ethnic Minorities, Hanoi, 100000, Viet Nam	3	0.34	17	35
1d	Vuong T.-T	Faculty of Pedagogy, University of Education, Vietnam National University, Hanoi, 100000, Viet Nam	3	0.34	14	35
2	Tran T.	Department of Basic, Vietnam Academy for Ethnic Minorities, Hanoi, 100000, Viet Nam	4	0.46	9	61
3 <sup>a</sup>	Asongu S.A.	Department of Economics, University of South Africa	3	0.34	43	75
3b	Odhiambo N.M.	University of South Africa, Pretoria, South Africa	3	0.34	27	190
3c	Sengupta T	General Management and Economics, Goa Institute of Management, India	3	0.34	10	190
3d	Sinha A	General Management and Economics, Goa Institute of Management, India	3	0.34	30	32
4	Ashraf M.A.	Department of Economics, United International University, Dhaka, Bangladesh	4	0.46	10	11

Table 1. The ten most active authors in the publication of literature related to quality education (2015-2021).

Rank	Institutions	Country	n	%	Position QS 2021	THE-Word University Ranking (SDGs)	Zero ** rankings
1	School of economics and international	China	2	0.23	n.d.	n.d.	n.d.
2	Department of basic, Vietnam	Vietnam	3	0.34	n.d.	n.d.	n.d.
3	Edlab Asia educational research and	Vietnam	2	0.23	n.d.	n.d.	n.d.
4	institute of theoretical information	Vietnam	2	0.23	n.d.	n.d.	n.d.
5	Charles sturt university	Australia	2	0.23	n.d.	n.d.	n.d.
6	College of education, education tech	Malaysia	2	0.23	n.d.	n.d.	n.d.
7	College of education, minzu university	China	2	0.23	n.d.	n.d.	n.d.
8	Covenant university, ota	Nigeria	2	0.23	n.d.	n.d.	n.d.
9	Fepartment of administrative business	Taiwan	2	0.23	n.d.	n.d.	n.d.
10	Department of didactics and school	Spain	2	0.23	n.d.	n.d.	n.d.
11	Department of economics, university	South Africa	2	0.23	n.d.	n.d.	n.d.
12	Department of educations leadership	South Africa	2	0.23	n.d.	n.d.	n.d.

Table 2. The top ten institutions active in publishing literature related to quality education (2015-2021)

Tran T., Department of Basic, Vietnamese Academy for Ethnic Minorities, Hanoi, Vietnam, and Ashraf M.A., Department of Economics, United International University, Dhaka, Bangladesh, were the most dynamic creators (n = 4; 0.46 %) in both cases, in the number of distributions related to “Quality Education”.

### TOP TEN ACTIVE INSTITUTIONS/ ORGANIZATIONS (2015 – 2021)

China School of Financial and Global Affairs was established in 1960 along with the founding of Foreign Trade University, which is an esteemed preparation organization in the field of financial affairs and global exchange, in which the financial affairs of Global business is generally the most legitimate field of review. The first position (n=2; 0.23%) in the number of distributions in “Quality Education”, the

Rank	Journal	Editorial	n	% = 879	TC	CPD	Language	Impact factor (2021)	SJB 2021	Quartil (2021)
1	International journal of educational	Elsevier BV	7	0.80	47	6.71	English	63	0.92	Q1
2	International review of education	Paises Bajos	7	0.80	58	8.29	English	36	0.41	Q2
3	Quality assurance in education	Emerald Group Publishing Ltd.	9	1.02	61	6.78	English	50	0.43	Q2
4	Sustainability (Switzerland)	Springer Nature Suiza AG	80	9.10	614	7.68	English	9	0.33	Q3
5	International journal of educational	Elsevier BV	10	1.14	87	8.70	English	63	0.92	Q1
6a	South african journal of education	Foundation for Education Science and Technology	9	1.02	50	5.56	English	27	0.41	Q2
6b	International Journal of inclusive	edRoutledge	7	0.80	50	7.14	English	47	0.84	Q1
7	Journal of cleaner production	Elsevier Ltd.	8	0.91	309	38.63	English	200	1.94	Q1
8	Sage open	SAGE Publications Inc.	8	0.91	60	7.50	English	32	0.36	Q2
9	World development	Elsevier BV	7	0.80	98	14.00	English	175	2.39	Q1

Table 3. The ten most active journals in publishing literature related to Quality Education (2015 - 2021))

In the ranking, two equally active journals received similar ranks

n.d no determined, TC total cites, CPD cites per document

A) According to journal citation reports

B) Scimago journal rank

TC Total of meetings

CPC Appointments by documents

Rank	Authors	Title	Year	Journal	JIF	TC	TC/ year
1	Sinha a. (2020)	Interplay between technological innovation and environmental quality: Formulating the SDG policies for next 11 economies	2020	Journal of Cleaner Production	200	86	43.0
2	Zafar m.w. (2020)	How renewable energy consumption contribute to environmental quality? The role of education in OECD countries	2020	Journal of Cleaner Production	200	73	36.5
3	tucker -drob e,m.(2016)	Large Cross-National Differences in Gene × Socioeconomic Status Interaction on Intelligence	2016	Psychological Science	260	151	25.2
4	asongu s.a. (2019)	Basic formal education quality, information technology, and inclusive human development in sub-Saharan Africa	2019	Sustainable Development	64	62	20.7
5	owens t.l. (2017)	Higher education in the sustainable development goals framework	2017	European Journal of Education	45	56	11.2
6	jjiani m.a. (2017)	Why and how international students choose Mainland China as a higher education study abroad destination	2017	Higher Education	99	54	10.8
7	burgener l. (2018)	Sustainability competencies in teacher education: Making teacher education count in everyday school practice	2018	Journal of Cleaner Production	200	52	13.0
8	secundo g. (2020)	Sustainable development, intellectual capital and technology policies: A structured literature review and future research agenda	2020	Technological Forecasting and Social Change	117	51	25.5
9	giangrande n. (2019)	A competency framework to assess and activate education for sustainable development: Addressing the UN sustainable development goals 4.7 challenge	2019	Sustainability (Switzerland)	9	49	16.3
10	klaeijsen a. (2018)	Teachers' Innovative Behaviour: The Importance of Basic Psychological Need Satisfaction, Intrinsic Motivation, and Occupational Self-Efficacy	2018	Scandinavian Journal of Educational Research	43	48	12.0

Table 4. The ten most influential original articles in the publication of literature related to Quality Education (2015 - 2021).





distributions in the space of values formation addressed in Table 1, we find in the positioning the first alliance of the Center for Interdisciplinary Social Research, Phenikaa University, Yen Nghia Neighborhood, Ha Dong District, Hanoi directed by the creator Ho M.- T., have different ways of addressing secure computer literacy, in Vietnam where this exam was created significant efforts have been made to show students skills that advance their quality instruction as a component of the Goal of Sustainable Development 4 (SDG 4) characterized by the United Nations (Tran et al., 2020).

The distribution region where the most files comparable to quality instruction are gathered is the school of establishment of financial and global aspects of the nation of China located in position 1 that must be visible in Table 2, presenting this for being an organization of high preparation in the field of exchange and global financial affairs, during the duration of the understudy you can smoothly use an unknown dialect whether between English, Russian, French, Japanese, Chinese, endless offer of your schooling are presented at the expert level (School of Economics and International Business, n.d.).

Considered the journal with the most distributions comparable to quality training is Elsevier BV's International diary of instructive, International audit of schooling, Quality confirmation in training, Sustainability (Switzerland), International diary of instructive, being journals considered among the main ones in the positioning, which maintains research on topics of global importance in instructional settings, distributes regular articles and extraordinary communications on unequivocal topics important to global multitudes of instructional specialists (International Journal of Educational Research, n.d.).

Considered among the top 10 most

persuasive articles in Quality Education, Sinha a.'s article, called "Interaction between mechanical development and ecological quality: Formulating SDG approaches for the next 11 economies", was the most powerful with 43.0 references every year and distributed in 2020 in the Journal of Cleaner Production, with Q1 quartile, Preserving natural quality has been really difficult for nations to meet the SDG goals. In this review, we have analyzed the innovation approaches of nations, trying to solve the issues of ecological corruption, monetary development, clean energy and quality instruction, the results obtained from the review, we have tried to address the objectives of the SDG 13, SDG 4, SDG 8, SDG 9, SDG 7 and SDG 10 (Sinha et al., 2020).

As for the constraints, it was noted that there are not many records and they appear to be a break over a long stretch of time that is very far from the present and consequently were not huge for this review. So it is more effective in the stage that begins in 2015 when the Sustainable Development Goal 4 (SDG 4) characterized by the United Nations dealt with this significant point that is instruction, in that creation turns out to be more abundant and more associated with the real world. Currently, it was observed that some distributions are found in Environment areas, among others that are somehow connected to the topic of this review.

As future lines of exploration, a relative examination can be performed with different datasets, such as WoS or Google Scholar, to grow and obtain a more complete perspective of the lines of examination in the most relevant information bases globally. Likewise, it would be fascinating to get some information about the elements that added to the consequences of the review, for example, the nations that produce the most articles on this topic in Scopus, the newspapers that distribute the most articles, etc.

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