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Abstract

This paper aims to evaluate the teaching skills, learning skills, learning outcomes, and academic performance using scientometrics analysis from 2001 to 2020. The scientometrics method and a total of 7536 published documents were found. The results reveal that the topic of academic performance and article as a type of published document was highly used. The high majority of these published documents are published in the English language and gradually increased in the number of published documents in terms of the year. Further, the author Chamorro-Premuzic T is the top author with 1139 citations and Univ. Grandada at top of twenty organizations with 52 published documents. The United States (US) is the top country, academic performance is the top keywords and the name of FASEB Journal is the top source of the published documents from 2001 to 2020. Furthermore, the trend of data is described in tables and figures to conclude.

Keywords: Teaching Skills, Learning Skills, Learning Outcomes, Academic Performance, Scientometrics Analysis

Introduction

Teaching is an essential skill for the process of learning at all educational levels generally and at higher education particularly. Further, for the learning process and pedagogical skills, teachers play a vital role in higher education institutions around the globe. Similarly, the learning outcomes in terms of academic performance in higher education are also based on multiple factors including

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teachers' skill, competency, gender, classroom environment, class participation, previous grades, study culture, and many more factors. Furthermore, several types of research have been conducted on these factors to measure the learning outcomes and academic performance of students at higher education levels. It is important to mention here that several researchers are using scientometrics analysis to consolidate the available researches on the topics for a specific given period. Moreover, the university environment, university libraries, and computer labs including other factors are also contributing to enhance learning outcomes and academic performance at the higher education level. Hence, this study aims to assess the teaching skills, learning skills, learning outcomes, academic performance using scientometrics analysis from 2001 to 2020.

Objectives of the Study

We formulated the main objective of this article is to evaluate the teaching skills, learning skills, learning outcomes, and academic performance using scientometrics analysis from 2001 to 2020. Further, the main objective is dissected into the followings;

- ➢ Topics and document types
- ➢ Language and years
- ➢ Top twenty results of authors' information
- ➢ Top twenty organizations
- ➢ Top twenty counties of the published documents
- ➢ Top twenty keywords
- ➢ Sources of published documents
- ➢ Top twenty funding agencies
- ➢ Top twenty journal articles by citations

Review of Literature

Teaching and learning skills in higher education have been the main concern of several scholars (Ehrenberg, 2012; Gallagher & Savage, 2020; Harrison et al., 2020; Shoaib, Abdullah, & Ali, 2020; Shoaib, Rasool, & Anwar, 2021). The study findings revealed that learning and academic performance are linked with several factors in higher education (Aldieri, Kotsemir, & Vinci, 2018; Jöns & Hoyler, 2013; Reagans & Zuckerman, 2001; Shoaib, Abdullah, & Ali, 2021; Shoaib & Ullah, 2019, 2021a, 2021b). The study of Artés, Pedraja-Chaparro, and del Mar Salinas-JiméneZ (2017) assert that teaching quality and research performance are very important in higher education. Similarly, the study of Tadesse, Manathunga, and Gillies (2020) points out the

importance of pedagogical practices on the learning experiences of students in higher education in Ethiopia. Further, Hung (2012) asserts the trends of e-learning using bibliometric analysis from 2000 to 2008. The study of Hsin and Reed (2019) analyzed academic performance in the United States in terms of higher education.

Furthermore, it has been observed that several studies have been conducted to highlight learning outcomes and academic performance in higher education in developed, developing, and Muslim world including Germany (Zawacki-Richter, 2020), Saudi Arabia (Saleh, 1986), Indonesia (Hansen, Saleh, Flinn, & Hotchkiss, 1989), Israel and United States (Ayalon, Grodsky, Gamoran, & Yogev, 2008), Iran (Mehran, 2009), Vietnam (Peeraer & Van Petegem, 2010), Ghana and Tanzania (Morley, 2010), Egypt (Cupito & Langsten, 2011), Iraq (Al-Husseini & Elbeltagi, 2015), Tunisia (Karamti, 2016), United Kingdom (Addison, Victoria, & Mountford, 2015), Africa (Mama, 2003), Jordon (Majzub, Bataineh, Ishak, & Rahman, 2011), Libya (Rhema & Miliszewska, 2012), Sri Lanka (Kalugama, 1999), Post-Soviet countries (Nessipbayeva & Dalayeva, 2013), China (Yu, Xu, & Wang, 2020),

Several studies have been conducted using scientometrics analysis to evaluate learning outcomes and academic performance in higher education in the developed, developing, and Muslim world (N. Ali, Shoaib, & Abdullah, 2021; Du, Yang, Shelton, Hung, & Zhang, 2021; Farrukh, Shahzad, Meng, Wu, & Raza, 2020; Hernández-Torrano & Kuzhabekova, 2020; Macauley, Evans, Pearson, & Tregenza, 2005; Shoaib, Abdullah, et al., 2021; Su, 2020; Ullah & Shoaib, 2021). The study of Baker (1991) makes bibliometric analysis of educators and researchers. Similarly, Hung (2012) uses bibliometric analysis to analyze e-learning. Further, the researchers also use bibliometric analysis in their studies including Kuzhabekova (2021), Goyal and Kumar (2021), Karisiddappa, Gupta, and Kumar (2020), I. Ali and Aboelmaged (2020), and Dehdarirad, Villarroya, and Barrios (2015). It is important to mention here that several studies used scientometric/bibliometric analysis technique to show the trend of data (N. Ali & Naveed, 2020; Naveed, Ali, Aslam, & Siddique, 2021; Shaukat, Ali, & Naveed, 2021). However, other researches employed qualitative and quantitative research techniques to draw their results and conclusions (N. Ali, Shoaib, & Asad, 2021; Anwar, Shoaib, & Javed, 2013; Mariam, Anwar, Shoaib, & Rasool, 2021; Shoaib & Abdullah, 2020, 2021; Shoaib et al., 2020; Shoaib, Latif, & Usmani, 2013). Based on the following review and bibliometric-based studies, this study intends to evaluate the teaching skills, learning

skills, learning outcomes, and academic performance using scientometrics analysis from 2001 to 2020.

The Data and Methods

This study is based on the scientometrics analysis of the data extracted from the Science Citation Index database, Web of Science (Core Collection). Further, the indexes are used including SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, and IC. We used the searched query as [TI=("Teaching Skills") OR TI=("Learning Skills") OR TI=("Learning Outcomes") OR TI=("Academic Performance")] and data are extracted on February 28, 2021, with the period of twenty years from 2001 to 2020 at 10:58 PM GMT. It is important to mention here that a total of 7536 published documents are found for the topic under discussion. Moreover, the tables and figures are used to show the trend of data and draw results and conclusions.

Results and Discussions

This section deals with the results and discussion on the subject under consideration. Here, the results are presented as per the sections based on the objectives as follows.

Topics and Document Types

Table 1
Topics and Document Types

a) Topic of the documents	Total Publications	Percentage
Teaching Skills	355	04.71
Learning Skills	316	04.19
Learning Outcomes	2408	31.96
Academic Performance	4457	59.14
Total	7536	100.00
b) Type of the documents		
Article	5191	68.88
Proceedings Paper	1373	18.22
Meeting Abstract	542	07.19
Review	161	02.14
Editorial Material	111	01.47
Letter	72	00.96
Book Review	38	00.50
Correction	38	00.50
News Item	08	00.11
Book Chapter	02	00.03
Total	7536	100.00

Table 1 indicates the topic and document type of the published documents from 2001 to 2020. Data show that 59.14 of the published documents' topic is academic performance and 31.96

percent of the documents are on learning outcomes. Further, the table describes that teaching and learning skills are also used as a topic of published documents as 4.71 percent and 4.19 percent respectively. It is pertinent to mention here that more than half of the documents are published with academic performance topics.

Table 1 also indicates the type of the published documents. Data present that 68.88 percent of the documents are in the form of an article and 18.22 percent of the documents are proceedings paper. Further, 7.19 percent of the published documents are meeting abstracts and 2.14 percent of the documents are published in the form of review. However, a similar proportion of the published documents are reported as book review and correction i.e., 0.50 percent. It is worth mentioning here that more than half of the published documents are in the form of an article.

Language and Years

Table 2
Language and Years

a) Language					
Languages	TP*	Percentage	Languages	TP*	Percentage
English	6864	91.083	Japanese	6	0.080
Spanish	518	6.874	Indonesian	2	0.027
Portuguese	35	0.464	Italian	2	0.027
German	19	0.252	Korean	2	0.027
Turkish	17	0.226	Malay	2	0.027
French	15	0.199	Norwegian	2	0.027
Chinese	13	0.173	Afrikaans	1	0.013
Russian	12	0.159	Icelandic	1	0.013
Czech	8	0.106	Latvian	1	0.013
Croatian	7	0.093	Slovenian	1	0.013
Dutch	7	0.093	Ukrainian	1	0.013

TP* = Total Publication

b) Year of the published documents					
Year	Publications	Percentage	Year	Publications	Percentage
2001	52	0.690	2011	390	5.175
2002	68	0.902	2012	390	5.175
2003	62	0.823	2013	441	5.852
2004	86	1.141	2014	504	6.688
2005	118	1.566	2015	517	6.860
2006	111	1.473	2016	626	8.307
2007	173	2.296	2017	765	10.151
2008	193	2.561	2018	803	10.656
2009	228	3.025	2019	902	11.969
2010	294	3.901	2020	813	10.788

Table 2 illustrates the language and year of the published documents from 2001 to 2020. Data depict that majority (91.08 %) of the documents are published in the English language. Further, 6.9 percent of the documents are published in the language of Spanish and 0.464 percent of the documents are published in the Portuguese language. However, there are other languages used in the published documents are also reported as Korean, Malay, Norwegian, Afrikaans, Icelandic, Latvian, Slovenian, and Ukrainian. Based on the tabulated data, it is asserted that the English language is used in the published document at the large level on the subject under consideration from 2001 to 2020. It is important to mention here that a total of 22 languages are used in published documents from 2001 to 2020.

Table 2 also indicates the distribution of the published documents by year. Data illustrate that 52 documents are published in 2001 and 68 documents are in 2002. Similarly, the number of published documents is increased by the passing year and near the 2020 year, the published documents are increased gradually as mention in the table. The trend of publishing research documents is increased from .69 to 10.8 percent from 2001 to 2020 respectively. It is important to mention here that the highest number of publications from 2001 to 2020 is in 2019.

Top Twenty Results of Authors' Information

Table 3 indicates the top twenty results of authors' information from 2001 to 2020. Data present that Chamorro-Premuzic T is at top of the list of top twenty authors on the subject under considerations with 1139 citations, 10 publications, starting year of publication 2002, h_index of 10, and 10 g_index. Similarly, Esteban-Cornejo I place at second number among the top twenty results of authors' information from 2001 to 2020 with 304 citations, 17 publications, 9 h_index, 17 g_index, and 2014 year as the start of publication during the said period. It is important to mention here that the name of Moe VF, Resland GK, Harden RM, Rozelle S, and Karpinski AC is also in the list of top twenty authors' information from 2001 to 2020 on the subject under discussion. Further, the name of Moliner-Urdiales D is at the bottom position of the top twenty authors' information list with 46 citations, 9 publications, 5 h_index, 6 g_index, and starting year of publication is 2018 that is similar to the author name as Adelantado-Renau M. It is asserted that the author names Chamorro-Premuzic T is at top of the top twenty authors' information list from 2001 to 2020. It is important to mention here that a total of 20425 authors published their documents and 24455 are the author appearances. Further, 1166 authors of single-authored documents and 19259 authors of multi-authored documents are reported. Similarly, data also

indicate that the published documents are 1247 single-authored documents, 0.369 documents per author, 2.71 authors per document, 3.25 co-authors per document, and 3.06 collaboration index. There are 20425 authors, 24455 author appearances, 1166 authors of single-authored documents, and19259 authors of multi-authored documents. Further, the single-authored documents are 247, 0.369 documents per author, 2.71 authors per document, 3.25 co-authors per document, and 3.06 collaboration index.

Table 3
Top Twenty Results of Authors' Information

Author	TP*	TC*	h_index	g_index	m_index	PY*_Start
Chamorro-Premuzic T	10	1139	10	10	0.5	2002
Esteban-Cornejo I	17	304	9	17	1.125	2014
Salamonson Y	13	356	9	13	0.563	2006
Veiga OL	11	239	8	11	0.8	2012
Nurmi JE	10	290	8	10	0.421	2003
Furnham A	8	1348	8	8	0.4	2002
Kirschner PA	9	886	7	9	0.5	2008
Martinez-Gomez D	9	192	7	9	0.7	2012
Karpinski AC	8	1161	7	8	0.583	2010
Rozelle S	13	139	6	11	---	2010
Aunola K	8	173	6	8	0.316	2003
Castro-Pinero J	8	101	6	8	0.857	2015
Resaland GK	8	183	6	8	0.857	2015
Aadland E	7	183	6	7	0.857	2015
Harden RM	7	521	6	7	0.3	2002
Moe VF	7	183	6	7	0.857	2015
Sallis JF	6	364	6	6	0.286	2001
Kim S	13	191	5	13	0.294	2005
Adelantado-Renau M	9	46	5	6	1.25	2018
Moliner-Urdiales D	9	46	5	6	1.25	2018
TP* = Total Publication, TC* = Total Citations, PY* = Publication Year						

Top Twenty Organizations

Table 4 illustrates the top twenty organizations of the published documents from 2001 to 2020 on the subject under discussion. Among the top twenty organizations, Univ. Granada is at top of the list with 521 citations and 52 publications. Similarly, Univ. Queensland and Univ. Sydney has a similar number of publications i.e., 48. Further, Univ. Melbourne and Univ. of Michigan also have a similar number of 44 publications. It is pertinent to mention here that the name of Monash Univ., Univ. Minnesota, Univ. Toronto, Ohio State Univ., Univ. Jyvaskyla, Univ. British Columbia,

Univ. Hong Kong. However, the name of Indiana Univ., Penn State Univ., and Purdue Univ. is at the bottom of the top twenty organizations from 2001 to 2020. Based on the bibliometric data, it is asserted that Univ. Granada is on top of the list of top twenty organizations of published documents on the subject under consideration. It is pertinent to mention that there are 5169 organizations total in number that published documents on the subject under considerations from 2001 to 2020.

Table 4
Top Twenty Organizations

| Organization	TP*	TC*	TLS*	Organization	TP*	TC*	TLS*
Univ. Granada	52	521	51	Monash Univ.	38	346	44
Univ. Queensland	48	711	54	Univ. Minnesota	37	1905	37
Univ. Sydney	48	877	93	Univ. Toronto	36	911	44
Univ. Melbourne	44	711	86	Ohio State Univ.	35	1405	15
Univ. Michigan	44	616	65	Univ. Jyvaskyla	35	558	35
Univ. Illinois	43	1261	38	Univ. British Columbia	34	680	62
Stanford Univ.	41	1266	73	Univ. Hong Kong	33	379	21
Univ. Groningen	40	919	44	Indiana Univ.	32	459	39
Univ. N Carolina	39	645	56	Penn State Univ.	32	554	18
Arizona State Univ.	38	1031	35	Purdue Univ.	32	798	35
TP* = Total Publication, TC* = Total Citations, TLS* = Total Link Strength							
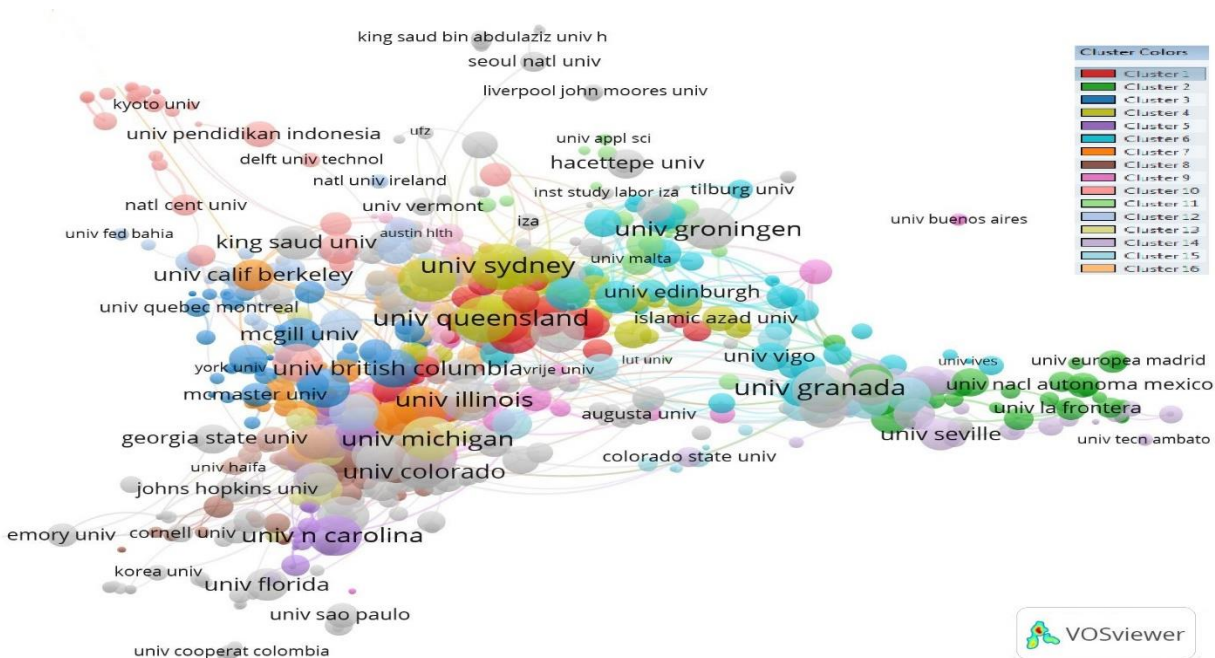
Figure 1. Top Twenty Organizations

Top Twenty Counties of the Published Documents

Table 5 presents the distribution of the published documents based on the top twenty countries. Data describe that United States (US) is at top of the list with a 2015 number of publications and Spain secures the second position with 553 number of published documents. However, the name of Canada, Malaysia, India, Netherlands, South Africa, Turkey, Germany, Mexico, Saudi Arabia, Pakistan, Brazil, and Chile is also in the list of top twenty countries concerning published documents from 2001 to 2020 on the subject under discussion. However, Nigeria and Finland place at bottom of the top twenty countries list with 73 and 72 publications respectively. Based on the tabulated data, it reveals that the US is on top of the list of the top twenty countries of the published documents. Further, it is pertinent to mention here that 128 countries are reported as per the distribution of published documents from 2001 to 2020 on the subject under consideration.

Table 5
Top Twenty Counties

Country	TP*	Freq.	SCP*	MCP*	MCP*_Ratio
USA	2015	0.289304	1861	154	0.0764
Spain	553	0.079397	479	74	0.1338
China	491	0.070495	389	102	0.2077
Australia	362	0.051974	301	61	0.1685
United Kingdom	299	0.042929	244	55	0.1839
Indonesia	255	0.036612	247	08	0.0314
Canada	194	0.027854	164	30	0.1546
Malaysia	128	0.018378	112	16	0.125
India	127	0.018234	114	13	0.1024
Netherlands	125	0.017947	89	36	0.2880
South Africa	122	0.017516	109	13	0.1066
Turkey	120	0.017229	110	10	0.0833
Germany	115	0.016511	91	24	0.2087
Mexico	101	0.014501	87	14	0.1386
Saudi Arabia	97	0.013927	73	24	0.2474
Pakistan	96	0.013783	85	11	0.1146
Brazil	89	0.012778	76	13	0.1461
Chile	88	0.012635	54	34	0.3864
Nigeria	73	0.010481	67	6	0.0822
Finland	72	0.010337	55	17	0.2361

TP* = Total Publication, SCP* = Single Country Publications, MCP* = Multiple Country Publications

Figure 2. Top Country Collaborations for Published Documents from 2001 to 2020

Top Twenty Keywords

Table 6 illustrates the top twenty keywords of the published documents on the subject under discussion from 2001 to 2020. Data reflect that academic performance is used 1620 times as a keyword in published documents and is on top of the list of top twenty keywords. Similarly, learning outcomes secures the second position with 493-time occurrence in the published documents in the top twenty keywords. It is important to mention here that the learning, education, performance, academic, higher education, academic achievement, students, and assessment is also used keywords and place in the top twenty keywords of the published documents from 2001 to 2020. Likewise, the keywords including motivation, achievement, adolescents, outcomes, physical activity, gender, children, and student are also in the top twenty keywords of the published documents on the subject under discussion. However, the word school and university are at bottom of the top twenty keywords of the published documents from 2001 to 2020 on the subject title. Hence, based on the bibliometric analysis data, it asserted that the keyword academic performance

is on top of the list of top twenty keywords of the published documents. It is pertinent to mention here that there are 5595 keywords plus (ID) and 12100 author's keywords (DE) that are also reported for the published documents during the mentioned period.

Table 6
Top Twenty Keywords

Keyword	Frequency	Keyword	Frequency
Academic Performance	1620	Motivation	157
Learning Outcomes	493	Achievement	97
Learning	342	Adolescents	97
Education	289	Outcomes	86
Performance	281	Physical Activity	79
Academic	237	Gender	74
Higher Education	237	Student	71
Academic Achievement	226	Children	69
Students	188	School	69
Assessment	174	University	69

Figure 3. Word Cloud of Author Keywords (2001-2020)

Sources of Published Documents

The top twenty sources of published documents are reported in Table 7 *(Appendix A)*. It is stated that FASEB Journal is at top of the top twenty sources of published documents with 76 publications total in number, 9 citations, and 2001 is the start of publication year. Similarly, Computers & Education secures the second position with 63 publications, 3342 citations, and 2002 is the year of starting publication on the subject under consideration from 2001 to 2020. Further, SLEEP as a source of publication of the published documents is at bottom of the list of top twenty sources with 26 publications, 96 citations, and starting year publication is mentioned as 2004. Based on the bibliometric analysis, the name of FASEB Journal is on the top position of the top twenty sources of the published documents on the subject under consideration. Likewise, it is important to mention based on the data here that there are 2797 different sources are reported of the published documents including journals, books, etc.
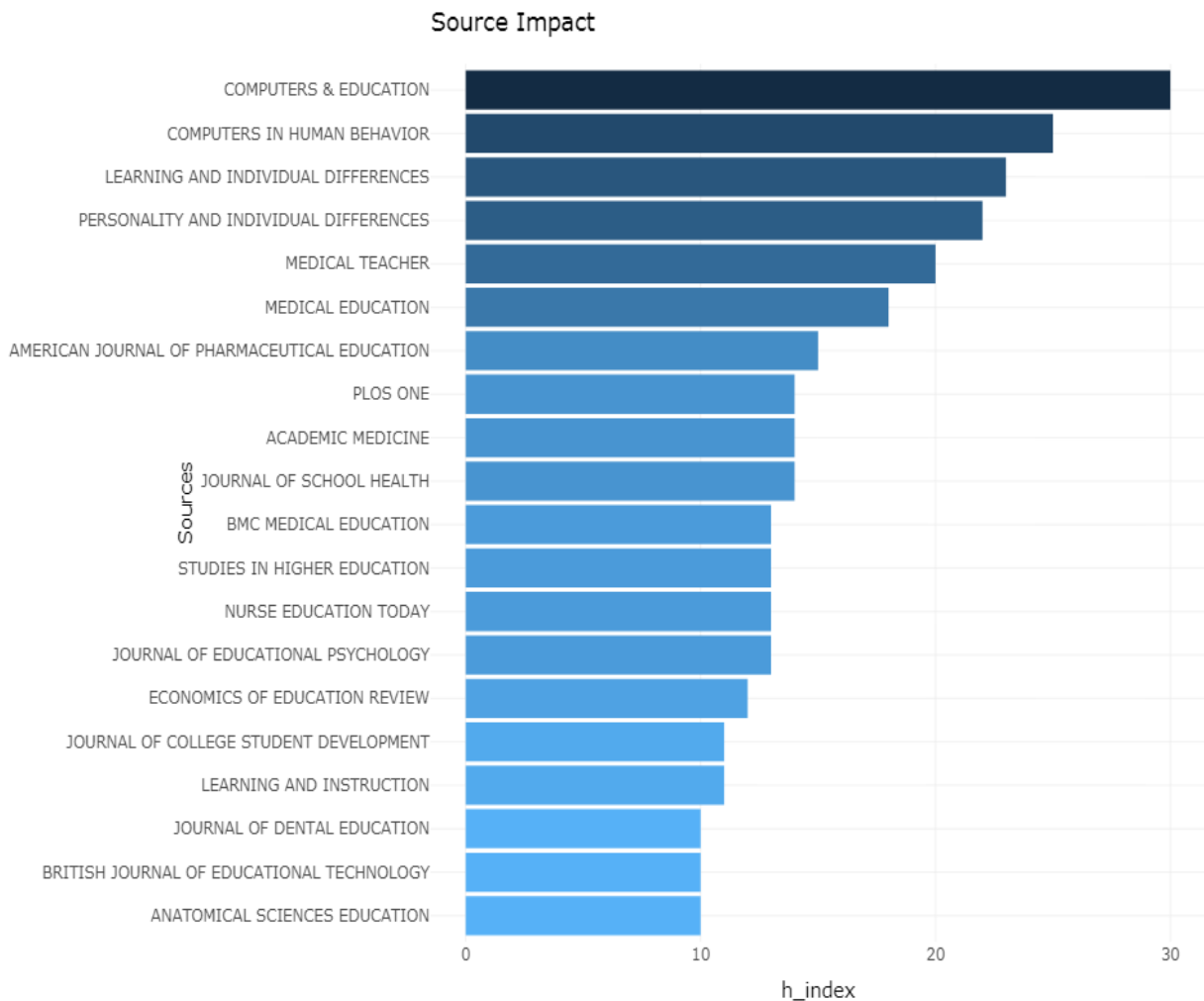

Figure 4. Top Twenty h-index Sources of Publications during 2001-2020

Top Twenty Funding Agencies

The top twenty funding agencies of the published documents on the subject under discussion from 2001 to 2020 are provided in Table 8 *(Appendix B)*. Data indicate that the name of 'United States Department of Health Human Services' is at the top of the top twenty funding agencies of the published documents with 131 number of publications out of 7536 published documents. Similarly, the funding agency name 'National Institutes of Health NIH USA' secures the second position in the top of twenty funding agencies of the published documents during 2001 to 2020 with 126 number publications that are 1.7 percent of the total available documents on the subject under considerations. Contrary to it, the name of 'Spanish Government' is at bottom of the top twenty funding agencies of the published documents. It is worth mentioning to indicate that 5169 organizations are reported for the 7536 published documents on the subject.

Top Twenty Journal Articles by Citations

The list of top twenty articles by citations of the published documents are attached in Table 9 *(Appendix C)*. Based on the bibliometric analysis, data indicate that the article title 'Psychological Correlates of University Students' Academic Performance: A Systematic Review and Meta-Analysis' is placed on top of the top twenty journal articles by citations from 2001 to 2020 with 1105 citations, published in 2012 (ISSN-0033-2909, Vol./No.-138/2). Further, the details of the top twenty articles by citations on the subject under discussion are provided in *Appendix C*.

Conclusion

Based on the scientometrics analysis, we conclude that this method enables researchers to gain more comprehensive insights into the selected area and support to be familiar with variables that are used during the research on the students' academic performance in higher education institutions. The study is mainly based on assessing the teaching skills, learning skills, learning outcomes, and academic performance-oriented published documents indexed in Web of Science from 2001 to 2020. The study concluded that the topic of academic performance and article as a type of published document is highly used. The high majority of these published documents are published in the English language and gradually increased in the number of published documents in terms of the year. Further, the author Chamorro-Premuzic T is the top author with 1139 citations and Univ. Grandada at top of twenty organizations with 52 published documents. The United States (US) is the top country, academic performance is the top keywords and the name of FASEB Journal is the top source of the published documents from 2001 to 2020. We recommend based on

this scientometric study that further bibliometric studies may be conducted from other databases and using other students' academic performance in higher education-related topics.

Limitations of the Study

The present scientometric analysis is based on publications in the Web of Science only and we did not use other databases agencies. Further, it only focussed to evaluate the teaching skills, learning skills, learning outcomes, and academic performance using scientometrics analysis from 2001 to 2020. Hence, we do not use other related topics including study student personnel traits, study habits, parental involvement, teachers' gender, presentation skills, communication skills, and gender of the students, etc.

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Appendix A
Table 7
Top Twenty Sources of Publications from 2001 to 2020

Source	TP*	TC*	h_index	g_index	m_index	PY*_start
FASEB Journal	76	9	1	2	0.047619048	2001
Computers & Education	63	3342	30	57	1.5	2002
Medical Teacher	63	1461	20	37	---	2001
Learning and Individual Differences	62	1548	23	37	1.15	2002
Computers in Human Behavior	48	3124	25	48	2.083333333	2010
American Journal of Pharmaceutical Education	47	591	15	21	0.714285714	2001
International Journal of Psychology	47	28	1	5	0.055555556	2004
International Journal of Environmental Research and Public Health	45	239	7	14	0.583333333	2010
PLOS One	45	543	14	22	1.166666667	2010
Medicine and Science in Sports and Exercise	42	249	3	15	0.142857143	2001
BMC Medical Education	37	493	13	21	1.181818182	2011
International Journal of Engineering Education	37	277	9	16	0.45	2002
Personality and Individual Differences	37	2204	22	37	1.047619048	2001
Studies in Higher Education	37	590	13	23	---	2005
Frontiers in Psychology	36	201	9	12	1.285714286	2015
Medical Education	36	1282	18	35	0.857142857	2001
Abstracts if Papers if The American Chemical Society	34	0	0	0	0	2001
Nurse Education Today	33	488	13	21	0.764705882	2005
Journal of Dental Education	27	271	10	15	---	2007
SLEEP	26	96	2	9	0.111111111	2004

TP* = Total Publications, TC* = Total Citations, PY* = Publication Year

Appendix B

Table 8

Top Twenty Funding Agencies of the Published Documents from 2001 to 2020

Funding Agencies	TP*	% of 7536
United States Department of Health Human Services	131	1.738
National Institutes of Health NIH USA	126	1.672
European Commission	80	1.062
National Science Foundation NSF	67	0.889
National Natural Science Foundation Of China NSFC	60	0.796
Ministry of Science and Technology Taiwan	41	0.544
NIH Eunice Kennedy Shriver National Institute of Child Health Human Development NICHD	40	0.531
UK Research Innovation UKRI	32	0.425
Ministry of Education Culture Sports Science and Technology Japan MEXT	27	0.358
Japan Society for the Promotion of Science	25	0.332
NIH National Institute of Mental Health NIMH	22	0.292
Social Sciences and Humanities Research Council of Canada SSHRC	20	0.265
Fundamental Research Funds for the Central Universities	19	0.252
Economic Social Research Council ESRC	18	0.239
Australian Government	17	0.226
Australian Research Council	17	0.226
Grants in Aid for Scientific Research KAKENHI	17	0.226
US Department of Education	17	0.226
Medical Research Council UK MRC	16	0.212
Spanish Government	16	0.212

TP* = Total Publication

Appendix C

Table 9

Distribution of Top Twenty Journal Articles by Citations (2001-2020)

Article Title	Authors	ISSN	Vol./No.	PY*	TC*
Psychological Correlates of University Students' Academic Performance: A Systematic Review and Meta-Analysis	Richardson, M; Abraham, C; Bond, R	0033-2909	138(2)	2012	1105
Self-discipline outdoes IQ in predicting academic performance of adolescents	Duckworth, AL; Seligman, MEP	0956-7976	16(12)	2005	954
A Meta-Analysis of the Five-Factor Model of Personality and Academic Performance	Poropat, AE	0033-2909	135(2)	2009	951
Review - Breakfast habits, nutritional status, body weight, and academic performance in children and adolescents	Rampersaud, GC; Pereira, MA; Girard, BL; Adams, J; Metzl, JD	0002-8223	105(5)	2005	701
Facebook (R) and academic performance	Kirschner, PA; Karpinski, AC	0747-5632	26(6)	2010	601
Sleep loss, learning capacity and academic performance	Curcio, G; Ferrara, M; De Gennaro, L	1087-0792	10(5)	2006	554
Achievement Goals and Achievement Emotions: Testing a Model of Their Joint Relations With Academic Performance	Pekrun, R; Elliot, AJ; Maier, MA	0022-0663	101(1)	2009	542
Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance	Hanus, MD; Fox, J	0360-1315	80	2015	471

Article Title	Authors	ISSN	Vol./No.	PY*	TC*
Food insecurity affects school children's academic performance, weight gain, and social skills	Jyoti, DF; Frongillo, EA; Jones, SJ	0022-3166	135(12)	2005	441
Academic performance, career potential, creativity, and job performance: Can one construct predict them all?	Kuncel, NR; Hezlett, SA; Ones, DS	0022-3514	86(1)	2004	443
Cognitive test anxiety and academic performance	Cassady, JC; Johnson, RE	0361-476X	27(2)	2002	441
Big five personality predictors of post-secondary academic performance	O'Connor, MC; Paunonen, SV	0191-8869	43(5)	2007	411
The ICAP Framework: Linking Cognitive Engagement to Active Learning Outcomes	Chi, MTH; Wylie, R	0046-1520	49(4)	2014	402
Personality predicts academic performance: Evidence from two longitudinal university samples	Chamorro-Premuzic, T; Furnham, A	0092-6566	37(4)	2003	403
Effectiveness of virtual reality-based instruction on students' learning outcomes in K-12 and higher education: A meta-analysis	Merchant, Z; Goetz, ET; Cifuentes, L; Keeney-Kennicutt, W; Davis, TJ	0360-1315	70	2014	395
The role of trait emotional intelligence in academic performance and deviant behavior at school	Petrides, KV; Frederickson, N; Furnham, A	0191-8869	36(2)	2004	421
Physical education, school physical activity, school sports and academic performance	Trudeau, F; Shephard, RJ	1479-5868	5	2008	359

Article Title	Authors	ISSN	Vol./No.	PY*	TC*
Unseen Disadvantage: How American Universities' Focus on Independence Undermines the Academic Performance of First-Generation College Students	Stephens, NM; Fryberg, SA; Markus, HR; Johnson, CS; Covarrubias, R	0022-3514	102(6)	2012	349
Too much face and not enough books: The relationship between multiple indices of Facebook use and academic performance	Junco, R	0747-5632	28(1)	2012	330
The trouble with black boys: The role and influence of environmental and cultural factors on the academic performance of African American males	Noguera, PA	0042-0859	38(4)	2003	323

PY* = Publication Year, TC* = Total Citations