Cross-Disciplinary Perspectives on Teaching Quality: A Systematic Review

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Abstract

This comprehensive systematic review examines the evolution of teaching quality research globally from 1990 to 2019. Analyzing 182 studies, the review identifies key trends, highlighting a significant rise in academic interest since 2012. Notably, the study underscores the cross-disciplinary nature of teaching quality, emphasizing its departure from isolation. The geographical landscape of research reveals an expanding focus, particularly in Asian countries. The review further explores thematic concentrations, research designs, and authorship patterns, revealing insights into collaboration trends. Journal analysis showcases a diverse academic interest in teaching quality across various disciplines. The conclusion urges researchers to diversify perspectives for continued field development.

Keywords: Quality, Teaching Quality, Systematic Review, Quality Research, Literature Review

Cross-Disciplinary Perspectives on Teaching Quality: A Systematic Review

The concept of teaching quality has been described by various researchers since the 1960s (e.g., Carroll, 1963). However, according to Chu (1990), in the study of higher education, the quantitative evaluation of teaching quality has recently attracted increasing attention. Quality teaching is considered a fundamental criterion by university authorities in assessing the overall quality of both institutions and individual academics. This assessment serves various purposes, including ensuring quality assurance, benchmarking, and recognizing and rewarding individuals through promotions (Jasman et al., 2013). The definition of quality may vary depending on individual perspectives and societal values. It cannot be viewed as a singular concept but rather must encompass various qualities, acknowledging that an institution might excel in one aspect of quality while lacking in another (Fairbrother, 1996).

The significance of teachers' professional knowledge has long been recognized as a crucial element influencing the quality of teaching (Abell, 2007) and many studies have been conducted since Shulman's study (1986) on the fundamental considerations of teachers' professional knowledge. Developing professional knowledge is a goal of teacher education, and it is supposed to enable teachers to perform appropriately in teaching situations, which should result in students' achievement (Terhart, 2012). The enhancement of teaching quality and the broad domain of performance assessment and quality assurance in higher education resulted in ongoing conflicts between universities and government authorities since the mid-1980s (Cave et al., 1997). In addition, teacher quality holds substantial significance in the realm of education, as it possesses potential to enhance academic success and refine teaching activities. Recent research has revealed that teacher quality can exert a positive or negative impact on students' aptitude for learning

(Roman, 2014). Numerous studies have demonstrated that learners' attentional focus and information processing efficacy are influenced by their motivational levels (Pintrich & Schunk, 2002; Pugh & Bergin, 2006). According to Ormrod (2010), motivated learners often try to understand classroom material in order to learn it meaningfully and also consider using it in their own lives. According to Pazagadi (2005), the quality of a higher education system is related to the way it meets its goals and the means by which those goals are met and validated. So, it is essential to pay attention to the quality of higher education in order to maximize the potential of human assets, available materials, and financial resources and to coordinate the development of an educational system and its effectiveness (NavehEbrahim & Karami, 2006). In fact, higher education is regarded as one of the most significant institutions for training skilled manpower that leads to a country's cultural, economical, social, and political development. So, a community's development can be dependent on its higher education level, and the qualitative and quantitative development of an educational system (AkhavanKazemi, 2005). School systems throughout the world acknowledge that the most critical in-school factor impacting student outcomes is the quality of teaching (Darling-Hammond, 2000). The perception of quality is a complex and multifaceted concept that is challenging to define in the context of higher education without some consensus on its meaning. UNESCO has articulated that the quality of higher education relies on various factors, including the overall state of the university system and its concision or conditions, alongside standards specific to an academic field (Ghonji et al., 2013).

Teaching and teacher quality have innumerable definitions and are sometimes linked together or used in isolation (Singh, 2015). Singh posits that teaching quality encompasses a combination of traits exhibited by teachers themselves such as inputs (professional qualifications, experience, place of residence, in-service training, etc.) as well as what the teachers 'do' and demonstrate in

the classroom (practices, attitudes, and content knowledge). Teaching quality does refer to the teachers' behaviours that promote positive educational outcomes (Ruiz-Alfonso & León, 2019). There exist two overarching perspectives in regards to conceptualizing the excellence of educators, each carrying distinct implications: teacher quality as defined by student accomplishments and teacher quality as defined by the qualifications possessed by teachers. While these viewpoints are not necessarily mutually exclusive, they emphasize differing elements to various degrees. When teacher quality is understood as being determined by student achievements, the underlying assumption is that although there is observable variation in effectiveness among teachers, this disparity cannot be fully encapsulated solely through conventional indicators of proficiency such as a teacher's level of preparation, years of experience, or standardized test scores. Rather, it can only be truly measured through an assessment of students' academic performance. Alternatively, the second viewpoint defines teacher quality based on their qualifications. The objective here is to ascertain which specific characteristics and attributes commonly perceived as indicative measures of an educator's excellence are genuinely linked with outcomes like student accomplishments or evaluations from principals regarding a particular instructor's efficacy in teaching (Cochran-Smith & Fries, 2005).

The fundamental assurance for the overall teaching quality in colleges and universities resides in the quality of its teachers. Accurately and scientifically assessing the instructional competence of college teachers not only measures their level of expertise, but also invigorates their motivation. This assessment process exerts a positive influence on promoting self-improvement and advancement among teachers, fortifying their professional development, enhancing educational standards, and guaranteeing the cultivation of qualified individuals within academic institutions (Dong et al., 2019).

Literature review

Systematic reviews provide objective summaries of what has been written and found out about the research topic. This is especially valuable in wide research areas, where many publications exist, each focusing on a narrow aspect of the field (Budgen & Brereton, 2006). The research on teaching quality focused on different aspects and themes in the past three decades. Many researchers have worked on teaching quality assessment (Lu & YanBai, 2012; Sahuquillo et al., 2004; Sizer, 1994; Byrne & Flood, 2003; Gaspar et al., 2008). With the same purpose, Beattie & Collins (2000) conducted a paper that deals with the issues and concepts involved in defining and measuring quality in higher education examining the quality framework used in the TQA assessment exercise and providing a textual analysis of the published assessment reports. Their findings suggest specific ways in which the TQA framework could be refined and improved. In a different scholarly investigation, Giraleas (2019) posits a fresh application of Stochastic Frontier Analysis to estimate the disparity in student performance and how this can be employed to assess changes in teaching quality. This investigation illustrates some of the advantages that quantitative analysis can contribute to educational research and supplies an additional instrument for the outcome-based assessment of teaching quality. Additionally, Yan (2011) carries out a study on the evaluation of teaching quality in tertiary institutions. By means of a comprehensive data mining methodology, Yan devises the establishment of the subsequent aspects and benchmarks: 1. Teaching attitude: educators must demonstrate accountability for their instructional duties by being adequately prepared, taking their responsibilities earnestly, and treating their students with due regard. 2. Teaching content: encompassing content selection, proficient management, precise and clear conceptualization, suitable difficulty level, optimal difficulty, theoretical coherence, and rich content. 3. Teaching method: assessing the presence of a coherent and logical structure, engaging

and comprehensible language, rigorous reasoning, and perfect board writing. 4. Teaching efficacy: encompassing the classroom atmosphere, mastery of key knowledge points, and enhancement of student capabilities.

Many other scholars have attended to the improvement of teaching quality (Davis et al., 2014; Diaz et al., 2010; Mosser et al., 2009; Bisgaard, 1999). Collie & Taylor (2004) applied a learning organization framework to understand academic departments' efforts to improve teaching quality. Their theoretical framework was generated from the literature on learning organizations, organizations devoted to continuous improvement through continuous learning. Using survey data collected from department chairs, this study found a positive association between learning organization behaviours and the improvement of teaching quality. Musundire & Dreyer (2018) also worked on the effectiveness of tools for Improving Teaching Quality. Their article details the findings of a formal study that aimed to examine the efficacy of the developmental supervision model in enhancing teaching quality. Utilizing quantitative surveys, focus group interviews, and literature analysis, the researchers concluded that clinical supervision is perceived as an effective tool for improving education quality due to its unique characteristics. Additionally, Stewart's (2004) investigation explored how portfolios can positively impact teaching quality. Through applying an organizational institutionalization model to a case study on course and teaching portfolios implementation, Stewart argues that these portfolios can greatly enhance teacher development by focusing on student learning and promoting a culture centered around tangible learning outcomes.

A vast majority of research in education has focused on teaching and teacher effectiveness. Owings et al. (2015) studied teachers' effectiveness i.e. their capacity to generate acceptable levels of student achievement. Using a non-experimental, mixed method design incorporating

quantitative and qualitative data collection and analysis, they conclude that principals who want to build positive and sustainable learning cultures with cadres of effective teachers—especially in high-needs schools and teaching high-demand subjects—are likely to find Troops teachers as highly competent candidates and colleagues. In his study, Van der Lans (2018) investigates the association between two indicators of teaching effectiveness in order to ascertain whether their correlation is contingent upon the study's design. The findings suggest that the correlation between the survey and observation measures depends on factors such as the number of classroom observations, student ratings, and whether the designs are nested or partially nested. Meanwhile, Berger & Hanze (2014) delve into an examination of how expert teaching quality impacts novice academic performance within the Jigsaw cooperative learning method. In essence, their study aims to analyze how expert teaching quality affects instructed novice students' academic performance in a jigsaw classroom setting. While it is established that high-quality teaching does indeed enhance performance, further analysis reveals that this positive impact diminishes when addressing subtopics with high cognitive demand.

Much has been written about students' perceptions of teaching quality in recent years. In their insightful research, Gaertner and Brunner (2018) seek to broaden our existing empirical understanding of how situational factors influence the consistency of students' perspectives on teaching quality. To achieve this objective, they carefully examined data gathered from a web-based platform that allowed students to provide feedback on their learning experiences. The findings obtained by Gaertner and Brunner demonstrated that student ratings could be considered as reliable indicators of various teaching elements, regardless of time, academic subjects, or grade levels. While the stability of perceptions was somewhat influenced by grade level, there was no significant impact observed for the subjects taught or the duration between surveys. These results

provided valuable insights into how contextual factors can shape students' perceptions regarding instructional aspects. In their enlightening research, Kember and Leung (2010) delved into the variances among different disciplines when it came to student evaluations of teaching quality. Their meticulous study revealed that the data collected from four distinct disciplinary groups harmoniously aligned with a shared model of quality instruction, which had a profound influence on the cultivation of general capabilities. Employing multiple-group structural equation modeling techniques allowed them to uncover configural invariance, thus affirming their conclusion that an effective teaching and learning environment exhibited consistency across diverse fields of study. However, there were differences in the magnitude of structural paths and latent means. Consequently, it can be inferred that there were differences between disciplines in the extent to which elements within the teaching and learning environment were brought into play. Yin et al. (2015) examined undergraduate students' perceptions of teaching quality and the effects on their approaches to studying and course satisfaction. Their study, having a sample of 2,043 students from two full-time universities in mainland China responded to a questionnaire comprising three scales adopted from widely used instruments, revealed the desirable effects of clear goals and standards, an emphasis on independence, generic skills, and an appropriate workload on students' approaches to studying and course satisfaction. Bijlsma et al. (2019) investigated if student feedback promoted teachers' insight into where they could improve their lessons and their reflection on their lessons. It was also studied in what ways teachers worked on improvement, based on the student feedback, and whether it affected the quality of their teaching. Student perceptions of teaching quality were measured by means of a smartphone application for providing teachers with feedback on their lessons. Accordingly, teachers first slightly improved their

teaching quality. However, teachers did not seem to reflect significantly more on their lessons and their improvement did not sustain.

Another concept that gained the attention of many researchers recently is Quality control. Quality control is the process whereby a service, or any part of the process associated with its production or delivery, is checked against a predetermined standard and rejected or recycled if below standard (Ellis, 1993, p. 18). Uygun (2013) in a study aimed to broaden the research on improving and maintaining the quality of foreign language learning and teaching in Turkish secondary education institutions, to provide information about the quality criteria of foreign language learning and teaching systems in European, and to improve and maintain the quality standards in Turkey. He conducted a pilot study at a private high school in Istanbul where the researcher would train himself in applying different data collection instruments, to test the items, and examine whether the items were able to collect the data necessary for the study. The results of his study showed that it will take a long time to bring quality to maturity in the English language teaching education system and while the new trend in Europe has changed from quality to excellence, in Turkey there are still some problems in establishing an effective system of quality in education for several reasons. Jasman et al. (2013) conducted an examination of quality in university teaching from a forward-looking standpoint. Their article delves into the definitions and distinctions between teacher and teaching quality, as well as the current trends in Australian and English higher education policies regarding teaching quality. Moreover, this study considers teaching quality in light of the underlying values and assumptions that may be present in each scenario concerning teaching. The authors then proceed to speculate on how these scenarios might impact what is deemed as high-quality teaching by the year 2020, along with potential challenges academics may face in terms of their roles, work methods, and career advancement opportunities

within each scenario. Ultimately, the authors propose that a significant reevaluation of the concept of "teaching" itself may be necessary at the higher education level in order to align with students' evolving needs under any potential future circumstances within academia. Barrie, Ginns & Prosser (2005) provided a comprehensive framework for quality assurance in teaching and learning based on empirical evidence. This framework is rooted in a well-researched theoretical perspective on student learning in higher education. The authors argue that adopting a relevant theoretical foundation enhances the alignment between quality assurance and improvement processes. They outline the key elements of our university's strategy, systems, and processes for quality assurance in teaching. Furthermore, they detail the implementation of the university's teaching quality assurance policy and systems. The authors discovered that successful faculties exhibit strong visionary leadership, coherent collegial systems and processes, and a willingness among staff to adapt the policy to their specific context. These factors are also crucial at the institutional level. Notably, the authors emphasize the importance of creating opportunities for faculties to engage with the policy in their own unique ways, such as through working groups and faculty-level implementation processes.

Methodology

A systematic literature review is a comprehensive exploration of relevant literature on a specific topic, serving various purposes (Sayfouri, 2014). This type of review offers numerous benefits. It allows writers to gain exposure to diverse ideas and learn from previous researchers' successes, partial successes, and failures. Furthermore, it forms the foundation for the study itself as it guides the overall research plan based on identifying gaps, inconsistencies, intellectual challenges, and controversies present in existing literature (Murrey & Beglar, 2009).

Searching Terms, Databases, and Research Article Pool

In order to have access to a large body of related studies conducted about the topic, our main search term, "teaching quality", was searched in 5 databases. The databases through which the articles were observed were SAGE, Elsevier, Taylor&Francis, Springer, and Wiley.

In surveying through those 5 databases, initially, more than 100.000 studies were found. In the next step, we came up with 9722 results in whose titles the mentioned searching term was included. After the exclusion of the unrelated results, exclusion of books, chapters, editorials, commentaries, letters, and conference papers, 326 articles remained. By applying our next exclusion criteria, the deletion of studies published before 1990, we came up with 182 articles that were scrutinized in order to achieve sufficient resource for the review process.

Inclusion and Exclusion Criteria

The initial search led to an abundant body of related and unrelated works published in five databases, so we had to apply our inclusion and exclusion criteria in order to reach our goal. To be included in the present meta-analysis data set, studies were required to meet the following criteria:

• Only the studies with our search term (teaching quality) in their title were included.

• Studies in the form of books, reviews, chapters, editorials, commentaries, letters, and conference papers were excluded, and only research articles were collected.

• Studies published before 1990 were excepted and those from then to the time of the conduction of this very study were included.

• Only studies written in English with available full-text form included.

Coding

After collecting the relevant studies and excluding those that did not meet the criteria, the next step was to construct a coding table, based on which the common features among different studies could be identified and organized. According to Cooper (2010), some common features should be included in every coding scheme; "every coding sheet should include the variables of investigation, participants' characteristics, research design and statistical information of every individual study" (Alsadhan, 2011, p. 43).

Instrument

In the current study for the systematic analysis of data, MAXQDA software, version 10.4.15.1 was used in order for screening titles and themes to identify potentially relevant studies. MAXQDA is a program developed in collaboration with many of the recognized experts in the field of meta-analysis, which includes a wide range of sophisticated options for data entry, analysis, and display. Data in many formats can be entered to calculate the effect size estimate. Moreover, in the same analysis, multiple study designs can be included; data from studies that used independent groups, and paired/matched designs can be put into the program and it merges different designs in the same analysis.

Results

The systematic search was conducted in SAGE, Elsevier, Taylor&Francis, Springer, and Wiley. Databases were searched from the advanced search taskbar in order to search thoroughly and refine the results. Initially, the term "teaching quality" was used to retrieve relevant studies which led to the finding of more than 100.000 results. Retrieved studies were screened based on our first exclusion criteria. We put the search term in te title bar search and just included studies with the term "teaching quality" in their titles which gave us 9722 studies. By applying the next

exclusion filter, (Studies in the form of books, chapters, editorials, commentaries, letters, and conference papers were excluded and only research articles were collected) 326 research articles were collected. Our final filter, only including studies published after 1990, and screening these articles based on title and abstract to exclude duplicates, resulted in a 182 articles collection. Figure 1 shows the study filtration processes to summarize how a total of 182 studies were included in this review.

Figure 1

Study Filtration Processes
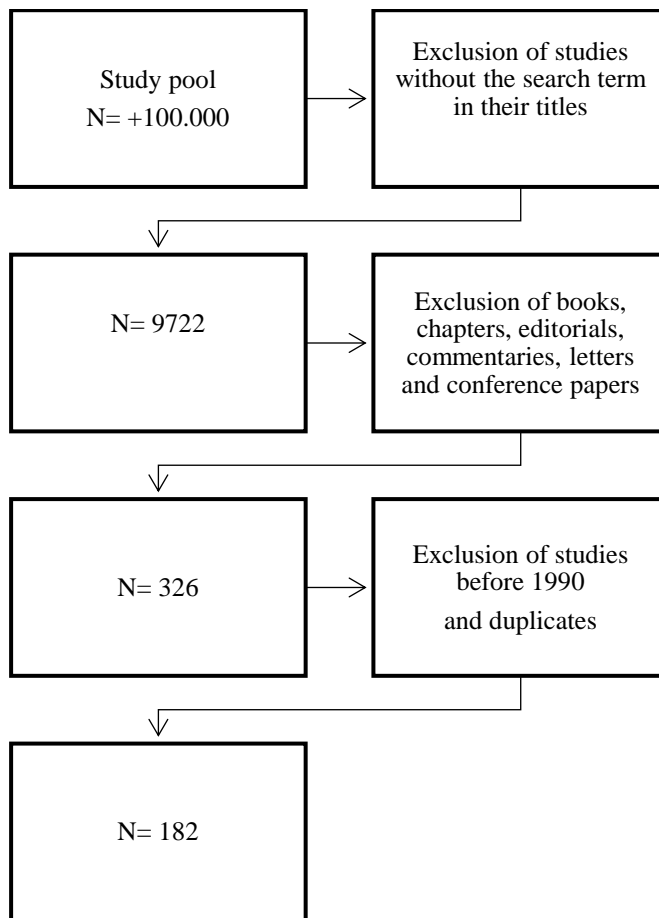
Descriptive Characteristics of the Studies

There were 182 studies included in this systematic review gathered from 5 databases. Seventy-three studies (40.1%) were collected from Taylor and Francis, forty articles (21.97%) from Elsevier, thirty-four studies (18.68%) from Springer, twenty studies (10.98%) from Sage, and 15 studies (8.24%) were collected from Wiley database. The studies were conducted in 39 countries (genuinely there were 35 country codes, but within the studies which were conducted in more than one country, 4 countries were new.) between 1990 and 2019. Thirty-eight studies (20.87%) were conducted in the USA and nine studies (4.94%) were conducted in more than one country. About 68 percent of the studies were carried out in the 2010s, 16 percent in the 2000s, and 16 percent in the 1990s. Fifty-one studies (28.2%) had a Quality Assessment theme which made it the trend theme of teaching quality studies. Thirty-nine studies (21.42%) applied a survey design and seventy studies (38.46%) used questionnaires as their scales. Detailed descriptions of the studies are presented in the following tables.

Databases

By using the advanced search bars of the selected databases for achieving precise results, we came to a 182 pertinent article pool. The advanced search bar has the option of searching only in the title of the studies and automatically eliminates other studies. Additionally, putting a two-word phrase searching term in a double quotation mark gives clear results of studies containing the exact searching term in their titles. From overall 182 collected studies from 5 databases, Taylor and Francis with 73 articles (40.1%) had the most number of collected studies. Respectively, Elsevier with 40 articles (21.97%), Springer with 34 articles (18.68%), Sage with 20 articles (10.98%), and Wiley with 15 articles (8.24%) were the most fruitful database.
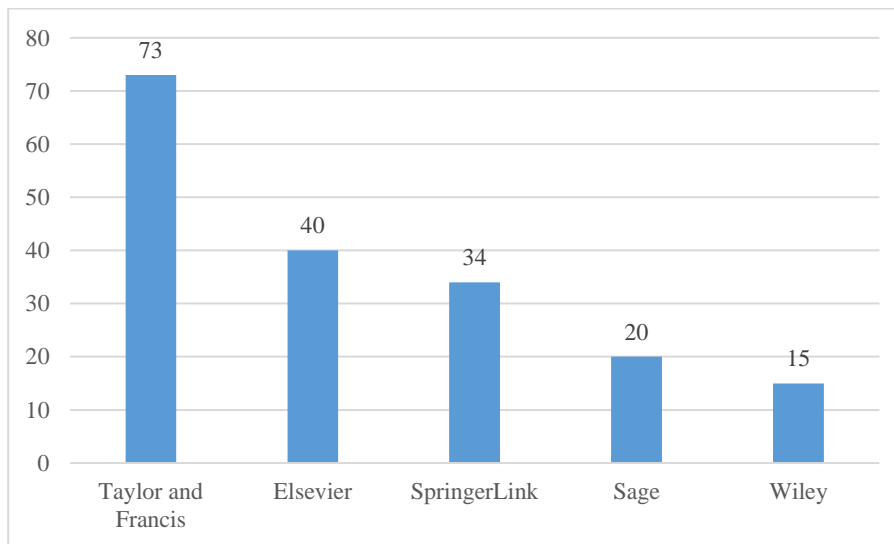
Table 1

Databases

| #	Database	Frequency
1.	Taylor and Francis	73
2.	Elsevier	40
3.	Springer	34
4.	Sage	20
5.	Wiley	15

Figure 2

Database Trends

Journals

The analysis revealed a scattered image of 122 different journals. The majority of the journals, 50.54%, published only one article over three decades, and a further 10.43% published two. The top ten journals combined published almost one-quarter of the teaching quality research. Still, none of them could be regarded as clearly the most dominant, each accounting for a maximum of 5.49% of all studies included in this review. Moreover, publishing journals come from various scientific backgrounds, such as engineering, medicine, economics, and many more. The overall result from the journal analysis is that teaching quality is of interest to researchers of various backgrounds. TQ research does not operate in an independent environment, but instead, it is influenced by various fields that interface with the field.

Figure 3

Top Ten Journals
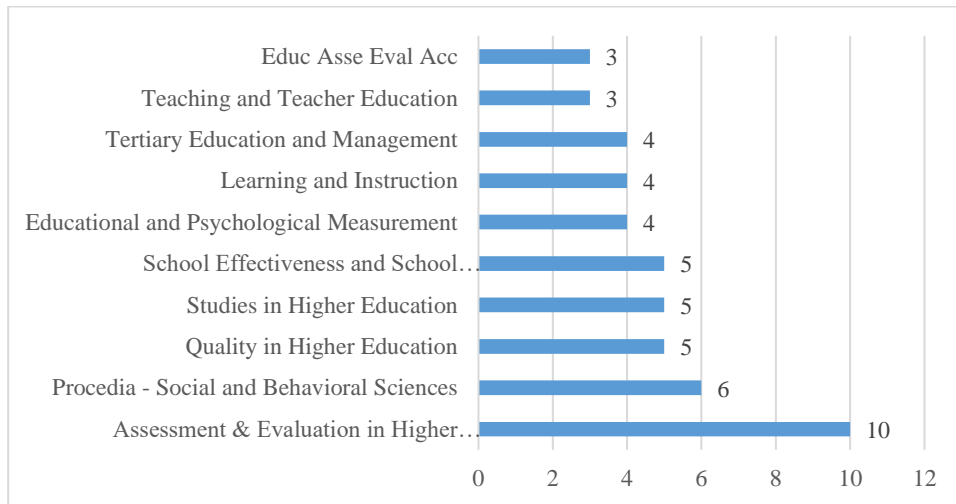
Among all 122 journals, Assessment & Evaluation in Higher Education with 10 studies hosted 5.49% of all studies and was the most productive journal. Procedia - Social and Behavioral

Sciences having 3.29% of all studies was in the second rank and the rest of the journals had in maximum of 2.74% of the studies which is half of the top rank journals or had just one study.

Authorships

To control for false duplicates, initials were checked. Filtering out duplicate author listings yields 443 individual authors contributing to the 182 articles. The majority of authors published only one article on TQ (93.00%). Of thirty-one authors who published more than one article, the majority published two (61.29%). Eckhard Klieme, publishing 7 papers, is the most productive author in the field. Table 4.2 shows the most productive authors in the field.

Table 2

The Most Productive Authors

#	Author's Name	Number of Papers
1.	Eckhard Klieme	7
2.	Miguel A. Mateo	4
3.	Juan Fernandez	4
4.	Jasmin Decristan	4
5.	Gerhard Büttner	4
6.	Benjamin Fauth	4
7.	Anna-Katharina Praetorius	4

Considering only the first author of each paper, there were 169 authors. The majority of authors published only one article on TQ (93.49%). Among those eleven authors that published more than one article, nine authors published two. The two authors Anna-Katharina Praetorius and Juan Fernandez are the most productive authors in the field, each having published three articles of relevance to this review. Table 3 shows the first authors with more than one paper.

Table 3

The Most Productive First Authors

#	Author's Name	Number of Papers
1.	Anna-Katharina Praetorius	3
2.	Juan Fernandez	3
3.	Benjamin Fauth	2
4.	Brett Vaughan	2
5.	David Kember	2
6.	Hongbiao Yin	2
7.	Julie Cohen	2
8.	Rikkert M. van der Lans	2
9.	Stefano Bianchini	2
10.	Wim J.C.M. van de Grift	2

#	Author's Name	Number of Papers
11.	Zenawi Zerihun	2

Over the three decades of research, most papers were published by two authors (29.12%), followed by single authorship (25.27%) and co-authorship between three authors (21.42%). While still 12.63% of papers were published in collaboration between four authors, authorships between more than four authors were unpopular. The highest amount of authors contributing to one research paper was thirteen and could be observed in just one paper.

Table 4

Authorships

#	Authorship	Frequency
1.	Single Author	46
2.	Two Authors	53
3.	Three Authors	39
4.	Four Authors	23
5.	Five Authors	9
6.	Six Authors	6
7.	Seven Authors	2

#	Authorship	Frequency
8.	Eight Authors	1
9.	Nine Authors	1
10.	Ten and more Authors	2

The presence of a large number of individual authors who have only published one or two articles creates a fragmented landscape and suggests that only a small group of highly productive researchers have expertise in the field. The trend of increasing co-authorships is also evident in other research areas. As more researchers become interested in a particular field, it becomes easier for them to collaborate with others. Collaboration offers advantages such as the exchange of complementary knowledge and experience, which is particularly important when approaching a field from multiple disciplines. Working in a team of researchers accelerates the research process. Furthermore, universities are actively promoting research collaborations to enhance their reputation. Overall, advancements in technology have facilitated collaboration by enabling efficient communication channels.

Figure 4

Authorship Trend
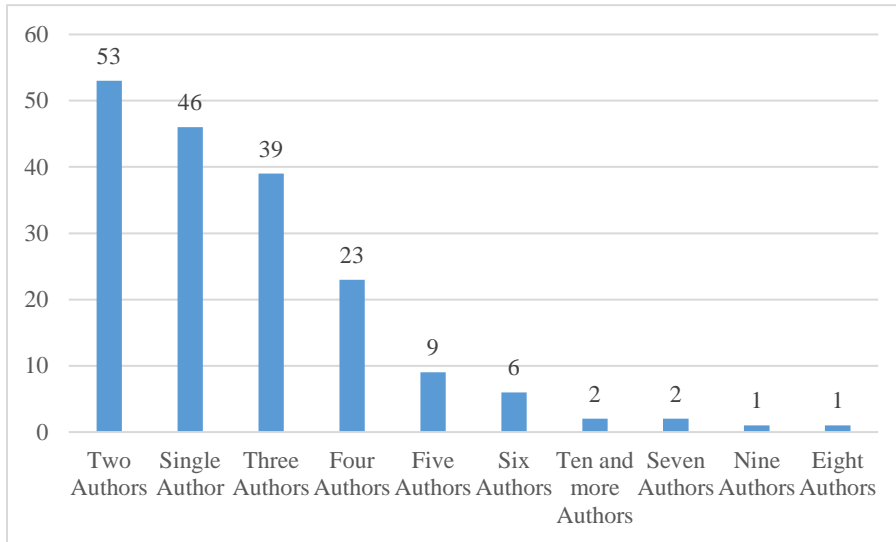
Studied Countries

Each paper studied between zero and fifteen countries. Thirty-nine different countries have been studied overall and most of the studies were dominated by USA and UK. Five papers among all did not study any specific country and nine papers studied more than one country. In Asian countries, only China had a significant number of studies and other Asian countries were studied once or twice.

Table 5

Studied Countries

#	Country	Frequency
1	USA	37

#	Country	Frequency
2	UK	22
3	China	17
4	Germany	17
5	Australia	15
6	Spain	10
7	More than one countries	9
8	Netherlands	9
9	South Africa	4
10	Canada	3
11	Ethiopia	2
12	Georgia	2
13	Hong Kong	2
14	Italy	2
15	Scotland	2
16	Sweden	2
17	Taiwan	2

#	Country	Frequency
18	Thailand	2
19	Turkey	2
20	Malaysia	1
21	Belgium	1
22	Croatia	1
23	Cyprus	1
24	Greece	1
25	India	1
26	Iran	1
27	Ireland	1
28	Lithuania	1
29	New Zealand	1
30	Portugal	1
31	Romania	1
32	Saudi Arabia	1
33	Switzerland	1

#	Country	Frequency
34	Vietnam	1
35	Wales	1

The studies of this review had 35 different study locations. Considering the studies which were conducted in more than one country, a total of 39 countries could be enumerated. As table 4.5 implies, The United States, with a total of 37 studies (20.32%), is the county with the most numbers of conducted studies. The United Kingdom is the location of 22 studies (12.8%), China with 21 studies (9.34%), Germany, hosts 17 studies (9.34%), Australia as 15 studies (8.24%), Spain is the conduction country of 10 studies (5.49%), and the Netherlands with 9 studies (4.94%) were respectively in the next ranks. Also, 9 studies (4.94%) were conducted in more than one country one of which was fulfilled in 15 different countries.

Figure 5

Top Ten Country Trend
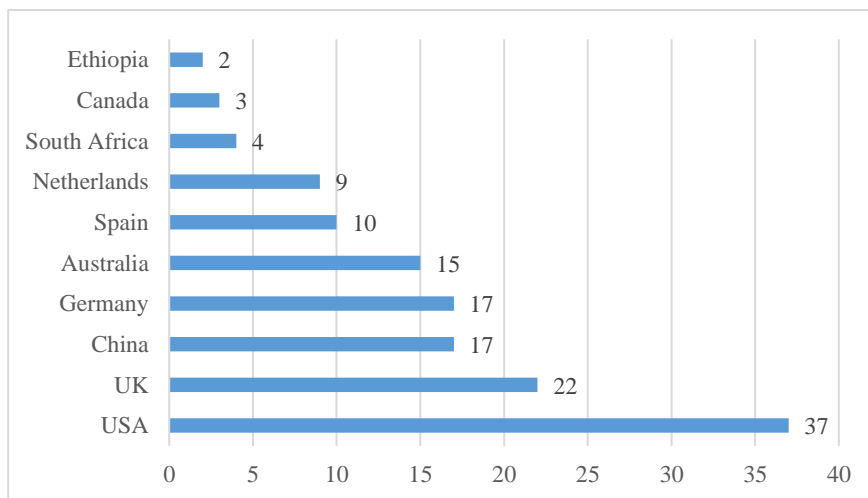
Annual Publications

As shown in Figure 4.6 the number of annual publications on the topic of teaching quality ninefolded over the thirty years. Publications almost stagnated between 1990 and 2011 and only started to increase by the year 2012. The increase was most remarkable at the year 2012 when the yearly publications almost reached the top. Overall, this development indicates that academic interest in the field rose considerably. A second boost occurred in 2017 which shows that the quality of teaching got even more attention lately.

Figure 6

Publication Trend
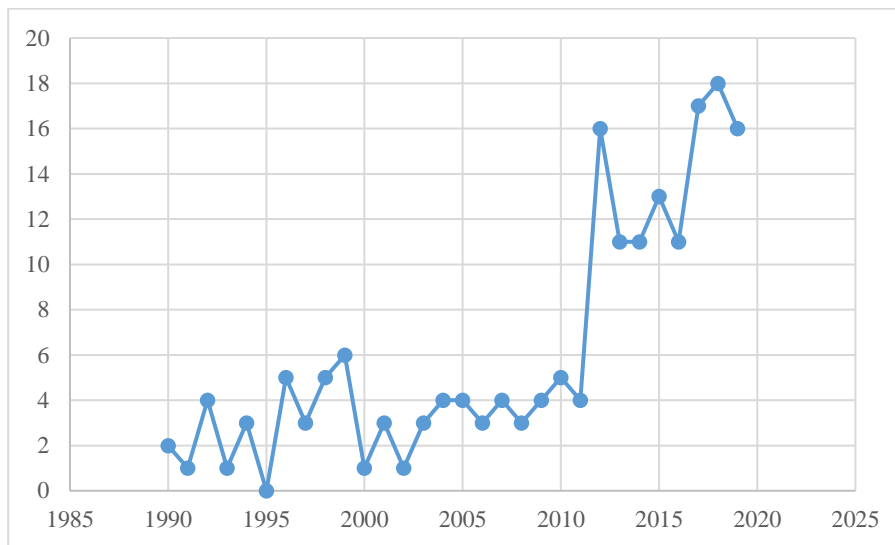
According to table 6 which organizes the studies based on their date of publishing, 122 studies (68%) were conducted in the 2010s, 30 studies (16%) in the 2000s, and 30 studies in the 1990s. This table also enumerates the studies based on their publication in each year based on which, the year 2018 with 18 studies (9.89%) being conducted, is the year with the most number of studies. The year 2017 has 17 of studies (9.34%) which makes it the second most fruitful year. Also, there

have been no studies, regarding Teaching Quality, conducted in 1995. Figure 4.2 demonstrates the number of annual publications on the topic of teaching quality.

Table 6

Annual publications

Decade	Year	Frequency	
2010s	2019	16	122
	2018	18	
	2017	17	
	2016	11	
	2015	13	
	2014	11	
	2013	11	
	2012	16	
	2011	4	
	2010	5	
2000s	2009	4	30
	2008	3	
	2007	4	
	2006	3	
	2005	4	
	2004	4	
	2003	3	

	2002	1	
	2001	3	
	2000	1	
1990s	1999	6	30
	1998	5	
	1997	3	
	1996	5	
	1995	0	
	1994	3	
	1993	1	
	1992	4	
	1991	1	
	1990	2	
Total		182	

Themes

Table 7 is dedicated to the dominant themes of the studies. According to the table, Teaching Quality Assessment, being the main theme of 51 studies, is the trend theme of our review with 28.02 percent of frequency. Teaching Quality Improvement theme, allocating 35 studies (19.23%) is the second trend theme. Also, 29 studies (15.93%) had Students' Perception of Teaching Quality as the theme of study. Teaching Effectiveness (13.18%), Teaching Quality Control (9.34%), Teaching-Research Nexus (4.94%), Teacher-Student Interactions (4.39%), Student Outcomes

(3.29%), and Online Teaching (1.64%) with respectively 24, 17, 9, 8, 6, and 3 number of all studies are the next trend themes in the Teaching Quality research in last three decades.
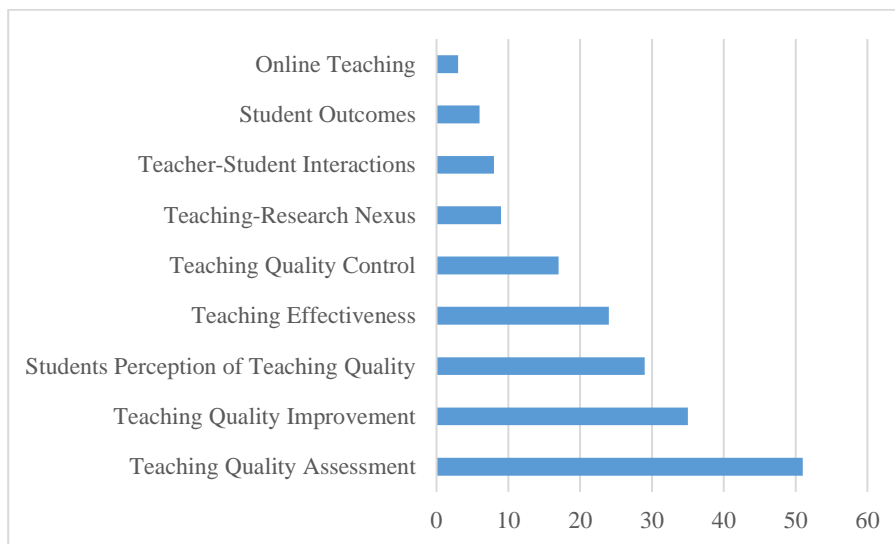
Table 7

 Themes

#	Themes	Frequency
1.	Teaching Quality Assessment	51
2.	Teaching Quality Improvement	35
3.	Students' Perception of Teaching Quality	29
4.	Teaching Effectiveness	24
5.	Teaching Quality Control	17
6.	Teaching-Research Nexus	9
7.	Teacher-Student Interactions	8
8.	Student Outcomes	6
9.	Online Teaching	3

Teaching Quality Assessment was studied by the majority of papers, 28.02%, and the second most often studied topic, Teaching Quality Improvement, was assessed by a lower share of 19.23% of papers. This difference in relative share shows that the assessment of teaching quality was very focused on the topic of teaching quality research. In conclusion, TQ research is highly focused on

one theme: Teaching Quality Assessment. To enable practitioners to consult scientific findings, research should be more versatile. An explanation for the low and decreasing share of other themes might be that many subjects are also discussed in general education research and that their similarity to the private sector may not require specialized research. But it is believed that practitioners are confronted with more problems that could be assessed scientifically. A dialogue between scientists and practitioners could provide useful insights into other relevant topics.

Figure 7

Theme Trend

Research Design

Table 8 enumerates the studies based on their research designs and methods. As the table implies, the majority of the studies have been in the form of surveys. Of 182 studies, 39 studies (21%) have been conducted in a survey design which made it the most used design in Teaching Quality research. Case studies with 17 studies (9%) and action research with 14 studies (7%) are the next most used designs.

Table 8

Study Designs

#	Study Design	Frequency
1.	Survey	39
2.	Case Study	17
3.	Action Research	14
4.	Factor Analyses	12
5.	Longitudinal Study	10
6.	Correlational Design	10
7.	Experimental Design	8
8.	Mixed Method Design	7
9.	Quantitative Studies	7
10.	Regression Model	7
11.	Empirical Research	6
12.	Structural Equation Modelling	6
13.	Generalizability (G) theory	5
14.	Multi-component Approach	5

#	Study Design	Frequency
15.	Fuzzy Level Analysis	4
16.	Review	4
17.	Descriptive Research	3
18.	Phenomenological Research	3
19.	Reference Model	3
20.	ANOVA Design	2
21.	Discursive Approach	2
22.	Interventional Study	2
23.	Quasi-experimental Study	2
24.	Doctrinal Approach	1
25.	Market Approach	1
26.	Traditional Method	1
27.	Value-added Methodology	1

Figure 8

Top Five Research Designs

Scales

In Table 4.9 the scales or instruments used for data collection in studies are ranked based on their usage frequency. Questionnaires, the data collection instruments of 70 studies (38%), are the number one most used scales in this review. Different forms of evaluation have been used in 48 studies (26%) and in 23 studies (13%) observation was the main data collection scale. Different activities, interviews, reports, and feedback in respectively 13 (7%), 11 (6%), 10 (5%), and 7 studies (4%) were the data collection scales of Teaching Quality research.
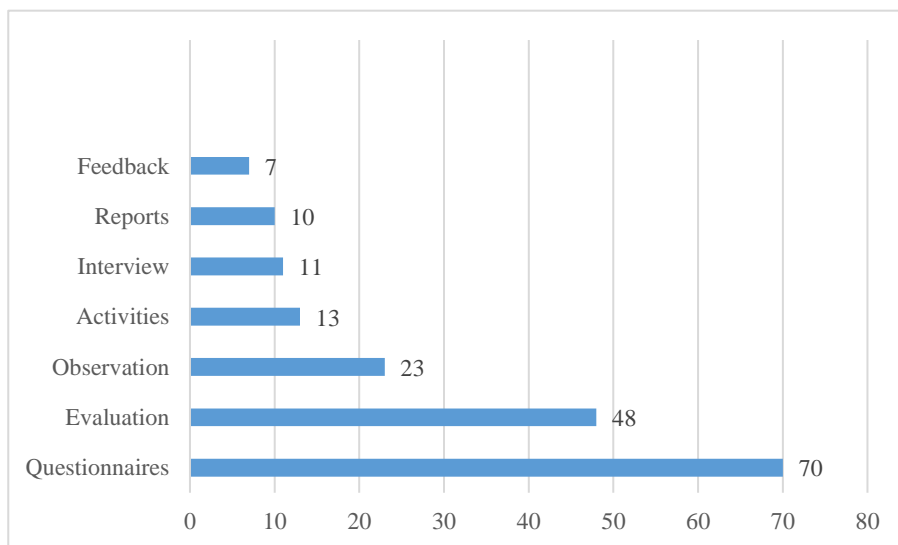
Table 9

Data Collection Scales

#	Scale	Frequency
1.	Questionnaires	70
2.	Evaluation	48
3.	Observation	23
4.	Activities	13
5.	Interview	11
6.	Reports	10
7.	Feedback	7

Figure 9

Scale Trend

Discussion, Conclusion, and Implications

This review analyzed the status of teaching quality research and how it developed globally between the years 1990 and 2019, the time of conducting this very study. We found that the relevance of the field, assessed by annual publications, increased significantly over the years, a raise that began in 2012. Five different databases were the publishers of the 182 articles included in this review, highlighting that teaching quality is no isolated research field, but instead highly cross-disciplinary. The number of annual publications on the topic of teaching quality was nine-folded over the thirty years. Publications almost stagnated between 1990 and 2011 and started to increase by the year 2012. The increase was most remarkable at the year 2012 when the yearly publications almost reached the top. Overall, this development indicates that academic interest in the field rose considerably. A second boost occurred in 2017 which shows that the quality of teaching got even more attention lately. More precisely, 122 studies (68%) were conducted in the 2010s, 30 studies (16%) in the 2000s, and 30 studies in the 1990s and the year 2018 with 18 studies (9.89%) being conducted in, is the year with the most number of studies. The year 2017 has 17 of studies (9.34%) which makes it the second most fruitful year. Also, there have been no studies conducted in 1995 regarding Teaching Quality.

In this review, an examination of thirty-nine countries was conducted, revealing noticeable variation. Our analyses, however, indicated that the USA and UK are the most influential countries. Nonetheless, more countries have entered the field as time has progressed. Notably, Asian countries have experienced a rapid increase in their research activities in recent years. If this upward trend continues, their knowledge in the field could expand, leading to a more comprehensive exploration of phenomena against diverse backgrounds.

The practice-oriented nature of teaching quality research is evident in the research strategies employed, predominantly survey research and case studies, as well as the data sources utilized,

with survey methods being particularly prominent. Paradoxically, these trends also present limitations in terms of practical relevance, as their reliability is limited and their findings are challenging to generalize. The neglected utilization of meta-analyses to pool findings or literature studies to apply them in further analyses hinders the field from deriving definitive conclusions that can be effectively implemented by practitioners.

The field addressed a range of nine different themes. However, themes have been addressed by proper proportions of papers: while the top studied the theme of teaching quality assessment was studied in 28.02% of papers, the second most prominent topic, teaching quality improvement, was studied in 19.23% of the articles. The percentage drops with a reasonable difference until the last one, online teaching, which covers 1.64% of the studies. Analyzing the studies based on their research designs and methods indicated that the majority of the studies were in the form of surveys. Case studies were the next most used designs. Regarding the scales or instruments used for data collection in studies, questionnaires were the most used scales in this review.

Regarding the authorship of the articles, it was found that 443 individual authors were engaging in the conduction of 182 articles. The majority of authors published only one article on TQ. Eckhard Klieme, taking part in the conduction of 7 papers, was the most productive author in the field, and of 169 first authors Anna-Katharina Praetorius and Juan Fernandez were the most productive authors in the field, each having published three articles. Most of the papers were published by two authors followed by single authorship and co-authorship between three authors. While still 12.63% of papers were published in collaboration between four authors, authorships between more than four authors were unpopular. The highest amount of authors contributing to one research paper was thirteen and could be observed in just one paper. The high amount of individual authors who only published one or two articles poses a scattered field and indicates that

only a few top publishing researchers are specialized in the field. The increase in co-authorships shows that as more researchers become interested in a field, it becomes easier for them to find collaborators. Reasons for collaboration include the exchange of complementary knowledge and experience. It is especially needed when the field is approached from many different disciplines. Having a team of researchers speeds up the research process. Moreover, universities are increasingly promoting research collaborations to increase their reputation. In general, cooperation is easier today due to technical developments, which enable short communication ways.

The review indicated that 122 different journals, with the majority (50.54%) publishing only one article over three decades, were the source of our article pool. A further 10.43% of the journals published two studies and the top ten journals, combined, published almost one-quarter of the teaching quality research. Although none of them could be regarded as clearly the most dominant one, the journal of Assessment & Evaluation in Higher Education, publishing 10 articles was the richest. It is worth mentioning that the journals come from various scientific backgrounds, such as engineering, medicine, economics, and many more and the overall result from the journal analysis shows that teaching quality is of interest to researchers of various backgrounds. TQ research does not operate in an independent environment, but instead, it is influenced by various fields that interface with the field.

The overall conclusion regarding the maturity level of teaching quality research is that although different paths have been laid, researchers continued walking the main roads. In order to develop the field further, researchers are strongly advised to research the field from more diverse points of view. The data provided in this review can provide them with the required information as to which designs have been underused until today. Moreover, scientists should synthesize past findings on account of deriving definite conclusions. Only when research findings are tested

against various backgrounds and when past findings are validated, can definite findings be developed, which can eventually be consulted by practitioners.

Limitations and Directions for Future Research

A constraint of this examination is that the author alone performed the categorizations of all included articles, and the data extraction stage is vital to ensure the accuracy and proper representation of the field. Recognizing this limitation from the outset, the purpose of this paper was to maintain a highly transparent review process, allowing other researchers to test the findings. While personal replication is desired, it is also essential to make this work relevant to TQ research. Failing to publish the many interesting findings would be regarded as a loss.

Another limitation pertains to the exclusion of articles published in languages other than English. Egger et al. (1997) discovered that in the medical sciences, research is more likely to be translated into English if significant results are found. This limitation has implications for any further syntheses conducted on subfields based on this review, as it raises the possibility that additional topics have been addressed by research but were not reported in this review.

To overcome the limitations of this review, other researchers are strongly encouraged to replicate the work, either in part or in its entirety, to validate the findings. Full replications should take into account the limitations of this review, such as conducting it alone and limiting it to published, English articles and databases beyond those mentioned in chapter three. Given the infrequent utilization of meta-studies and literature reviews of literature in TQ research, researchers are strongly urged to employ these methods more frequently. The synthesis of existing knowledge facilitates growth and allows for the development of definitive findings. This review analyzed the trends of the past three decades as a whole. A full replication of the study regarding

the trends of each specific period of time with specific time intervals may be conducted. The high amount of 122 individual journals publishing relevant research may be analyzed with regard to the most prominent backgrounds to detect which scientific fields are the main stakeholders of TQ research.

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