

*Review article*

## **Bibliometric Analysis of Research on Peer Feedback in Teaching and Learning**

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### **ABSTRACT**

A growing body of literature has highlighted the pivotal role of peer feedback in teaching and learning. However, a paucity of studies explore the trend of literature in this research area, particularly using a bibliometric approach. Therefore, this study was conducted to reveal the major trends in the research area and construct an intellectual landscape of the relevant studies in the field. Bibliometric details of a total of 276 research articles, published from 1985 to 2020 (August), were retrieved from the *Scopus* database for further analysis. In particular, the publication trend, the most productive countries, the most productive authors, the top ten source titles, and keywords used in the research area, were explored using bibliometric indicators. The rapid growth of publications on peer feedback was observed since 2010, with a sharp peak noted in 2019. Furthermore, writing context was found as the central focus of peer feedback research. Among others, three key themes that surfaced out of term-occurrence analysis included: impacts/effects of using peer feedback approach, sub-themes concerning peer feedback implementation, and peer feedback in writing context. Additionally, from the review of 30 top-cited publications, 3 prominent themes: effects of using peer feedback approach, effective or ineffective peer feedback,

and potential challenges or issues in peer feedback implementation emerged. Based on the findings, this paper concludes with some recommended avenues for future research.

*Keywords:* Bibliometric analysis, citation counts, peer feedback, publication trend, teaching and learning

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## INTRODUCTION

The term “peer feedback” has been defined as “a communication process through which learners enter into dialogues related to performance and standards” (Liu & Carless, 2006, p. 280). As it was addressed, students make evaluations and judgments (Nicol et al., 2014). The role of peer feedback (PF) in student learning has long been documented in the literature. According to Vygotsky (1978), learning occurs when a learner is led to achieving a goal beyond his unassisted efforts with the assistance from his/her peer, who is ‘the more knowledgeable other’. In other words, with peer scaffolding, a learner can close the gap between what he/she is able to do independently and what he/she can potentially do with the help of a more competent peer in the zone of proximal development. As peers share the common ground of understanding languages, problems, and knowledge (Cho & MacArthur, 2010), PF might be easier to understand than expert feedback. For example, it was found that learners with high language anxiety might have difficulties processing teachers’ corrective feedback successfully (Sheen, 2008). Providing PF is cognitively engaging (Carless & Boud, 2018) as it involves higher-order thinking processes, such as application of criteria, diagnosing problems, and suggesting solutions (Nicol et al., 2014), it can be used effectively to facilitate student learning. This is echoed by Strake and Kumar (2010) when it was postulated that effective PF can have positive impacts on students’ critical thinking skills and self-regulated learning.

Furthermore, recent empirical studies have lent credence to the fact that PF can be used as an effective instructional strategy to facilitate student learning, particularly in promoting students’ deep self-reflection (Al-Qunayeer, 2019; Chien et al., 2019; Dressler et al., 2019; Li & Li, 2017; Mulder et al., 2014; Vorobel & Kim, 2017; Wu et al., 2015; Yang, 2015; Yu, 2019; Zheng et al., 2017), enabling students to obtain new ideas and perspectives to work on the task (Liu, 2016; Noroozi & Hatami, 2019; Shang, 2019; Yang, 2015), providing opportunities for students to get peer support on language-related issues (Akiyama, 2017; Li & Li, 2017; Montero-Fleta et al., 2015; Qing, 2019; Yu, 2019) as well as opportunities to learn from a variety of sources (Ge, 2019; Wu, 2019; Yu, 2019).

Although PF has been widely researched in teaching and learning, there is limited published data on the trend of literature in this research area, particularly using a bibliometric approach. Hence, to provide a general overview of the main themes and current dynamics of PF publications in teaching and learning and to synthesize the existing literature so that important issues can be highlighted, bibliometric analysis and a critical review of the top-cited PF publications were undertaken. The findings, particularly on the potential research areas, will be of particular interest to practitioners interested in using PF as an instructional approach and scholars who wish to expand their investigation in this research domain. Moreover, as Zhang (2020) described, a bibliometric analysis may also function as a ‘mini-guide to assist scholars and students

new to the particular research domain. In particular, this study will address the following research questions:

- What is the current trend of publications on peer feedback (PF) in teaching and learning regarding the number of publications, citations per year, publication countries, the most productive authors, and top 10 source titles?
- What are the most popular themes in publications on PF in teaching and learning?
- What are the significant issues raised in 30 top-cited publications on PF in teaching and learning?

## LITERATURE REVIEW

Bibliometric analysis is defined as “the process of extracting measurable data through statistical analysis of published research studies and how the knowledge within a publication is used” (Agarwal et al., 2016, p. 297), which involves one to organise, classify and quantitatively evaluate the patterns emerged from the data (Gupta, 1988). Numerous studies have provided evidence to support the use of bibliometric analysis in doing the scientific evaluation, such as in revealing historical development (Young & Belanger, 1983), quantifying existing trends (Durieux & Gevenois, 2010), helping researchers to obtain reliable indicators showing the quality of publications (Góngora-Orjuela, 2010) and keep track of the scope of a given research domain (Chang et al., 2015), increasing the objectivity of review studies (Zupic &

Čater, 2015), detecting major themes in a field (de Bellis, 2009) and predicting the research trends in the future (Ma et al., 2016). Arik and Arik (2017) highlighted that bibliometric analysis is deemed important in social sciences and humanities. For instance, bibliometric analyses were conducted to look into scientific production of educational technology in higher education (Rodríguez-Jiménez et al., 2019), second language writing (Arik & Arik, 2017), technology-enhanced language learning (Chen et al., 2018), applications of wearable devices in English education (Cheng & Yao, 2019) and early childhood education (Khodabandelou et al., 2018). Metrics such as the number of publications and citation counts, h-index, Journal Impact Factor, the Eigenfactor, and article-level metrics can be used to measure the scholarly impact of an individual researcher and institution (Agarwal et al., 2016). However, it was highlighted that number of publications alone is insufficient to inform the actual impact of publications. The number of citations that reflect the extent to which a publication has been useful to other researchers can indicate the global impact and influence of an author’s research. In the present study, metrics such as the number of publications, citation counts, citations per year, h-index, keyword, and term co-occurrence analyses were explored to overview publications on PF in teaching and learning.

## METHODS

The data used in the bibliometric analysis were obtained from the *Scopus* database as of

8 August 2020. *Scopus* is acknowledged for its prestige and rigour as a large depository of peer-reviewed literature. Owing to its superior coverage of high-quality journals across different fields (Mongeon & Paul-Hus, 2016), it is widely used to perform bibliometric analyses (e.g. Ahmi & Nasir, 2019; Kollé et al., 2018; Sweileh, 2018). Initial query was performed with keywords such as “peer feedback” and “peer review”. However, many false-positive results were yielded. After several iterations, a query string of TITLE (“peer feedback”) was finally used to conduct the literature search, following the four-phase PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines

(Moher et al., 2010), as shown in Figure 1. Initial search has yielded a total of 441 document results. Following the procedure of other bibliometric studies (see Muritala, 2020; Özdağoğlu et al., 2019; Sweileh, 2020) and critical analysis (see Sivarajah et al., 2017), only journal articles were considered. As indicated by Kraus et al. (2020, p. 1034), as the most ‘valuable’ source in research, searching limited to ‘journal articles only’ can help “to create a more transparent process that can be applied globally”.

Muritala (2020) also found that most online reviews considered only journal articles, suggesting that it is still possible to have a critical appraisal of a research topic

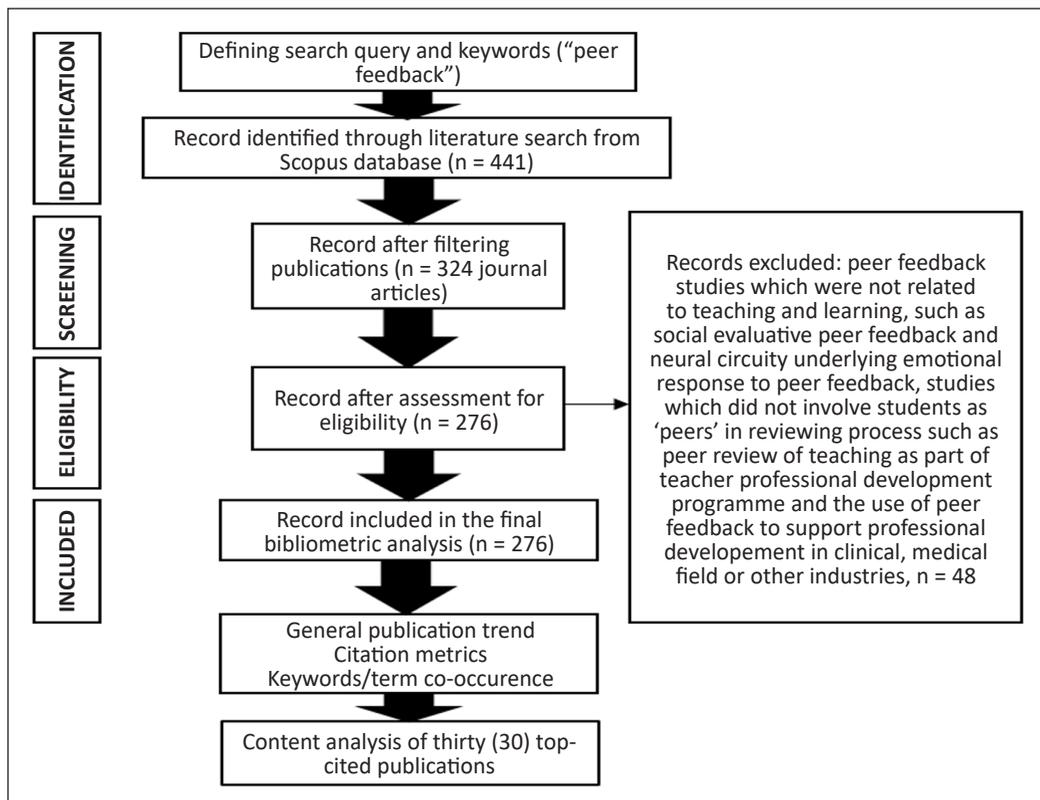


Figure 1. Data collection procedures

with published journal articles only. As a result, a total of 324 journal articles were identified from the database. As the main focus of this study is on PF in the teaching and learning context, a few rounds of screening were performed through reading the titles, abstracts, or main texts to exclude irrelevant studies. As a result, the final database, which consists of 276 articles, was used to conduct the bibliometric analysis. *VOS viewer*, which is a computer program developed to create, visualise and explore bibliometric science maps (Van Eck & Waltman, 2010), was used to conduct the keyword and term co-occurrence analyses, *Harzing's Publish and Perish software* was used to calculate citation metrics while *Microsoft Excel* was used to calculate the frequencies of the published materials and compute the relevant graphs and charts. Finally, the last step involved a critical review of the 30 most-cited PF publications to highlight the significant themes and issues raised.

## RESULTS AND DISCUSSION

Based on the data obtained, the bibliometric attributes, such as publication and citation by year, countries/regions of publication, the 10 most active source titles, and the top 10 most influential authors in the field were analysed and presented.

### Publication Trend

#### The number of Publications and Citations.

Figure 2 depicts how publications on peer feedback (PF) have been distributed from the very beginning of 1985 (the first recorded occurrence) to 8 August 2020, which amounts to 276 publications. It was noted that the production of publications in last year alone, reaching 48, represents 17.4% of the total production. In general, the data up to 2019 demonstrates a positive growth of publication trends over time, reflecting the growing interest of scholars in PF studies. However, it was noted that the early development of publications on PF is quite slow until 2010, in which the

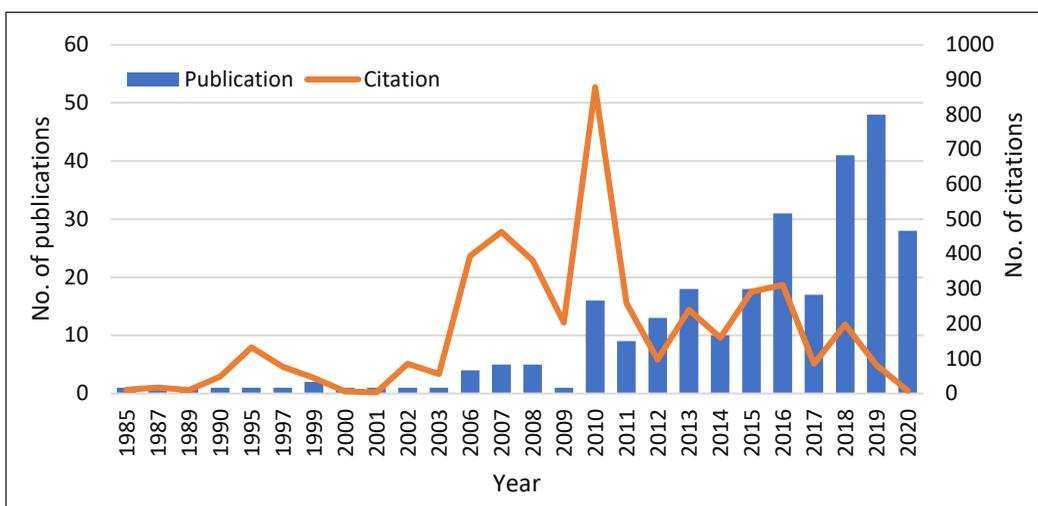


Figure 2. Publication and citation by year

total citation counts have reached their peak of 878, with the highest h-index ( $h=11$ ) recorded in the same year (see Table 1). Since then, the number of publications has increased in its volume almost every year.

The first peak of citations ( $TC=463$ ) was observed as early as 2007. However, a closer examination of the three top-cited publications in 2007 revealed an interesting fact that these studies (Ertmer et al., 2007;

Guardado & Shi, 2007; Tseng & Tsai, 2007) share the same research focus, i.e. related to online PF. It is worth noting that the year 2007 has witnessed widespread use of the smartphone, an internet-enabled device due to the digital revolution, thus propagating numerous opportunities for diffusion of *digital technology* in classroom learning. It *helps to explain* the marked shift of the focus of studies and *notable*

Table 1  
Publication and citation by year

Year	TP	P (%)	CP (%)	NCP	TC	C/P	C/CP	h	g
1985	1	0.36	0.36	1	11	11	11	1	1
1987	1	0.36	0.72	1	17	17	17	1	1
1989	1	0.36	1.09	1	10	10	10	1	1
1990	1	0.36	1.45	1	48	48	48	1	1
1995	1	0.36	1.81	1	132	132	132	1	1
1997	1	0.36	2.17	1	77	77	77	1	1
1999	2	0.72	2.90	2	45	22.50	22.50	2	2
2000	1	0.36	3.26	1	6	6	6	1	1
2001	1	0.36	3.62	1	3	3	3	1	1
2002	1	0.36	3.99	1	85	85	85	1	1
2003	1	0.36	4.35	1	56	56	56	1	1
2006	4	1.45	5.80	4	394	98.50	98.50	3	4
2007	5	1.81	7.61	5	463	92.60	92.60	5	5
2008	5	1.81	9.42	5	381	76.20	76.20	5	5
2009	1	0.36	9.78	1	203	203	203	1	1
2010	16	5.80	15.58	15	878	54.88	58.53	11	16
2011	9	3.26	18.84	8	259	28.78	32.38	6	9
2012	13	4.71	23.55	12	97	7.46	8.08	6	9
2013	18	6.52	30.07	17	240	13.33	14.12	11	15
2014	10	3.62	33.70	9	160	16.00	17.78	7	10
2015	18	6.52	40.22	18	292	16.22	16.22	10	17
2016	31	11.23	51.45	29	311	10.03	10.72	10	17
2017	17	6.16	57.61	16	85	5.00	5.31	5	8
2018	41	14.86	72.46	29	198	4.83	6.83	9	12
2019	48	17.39	89.86	28	82	1.71	2.93	5	6
2020	28	10.14	100.00	7	8	0.29	1.14	1	1
<b>Total</b>	<b>276</b>	<b>100.00</b>		<b>215</b>	<b>4541</b>	<b>1096.33</b>	<b>1111.84</b>	<b>107</b>	<b>147</b>

Notes. TP=total number of publications; P= percentage; CP= cumulative percentage; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication; h=h-index; g=g-index

contribution of publications after 2010, despite some slight fluctuations in the number of publications and citations over the years. It is anticipated that PF publications will continue their momentum after 2020 as the exponential increase of online learning after the *Covid-19* outbreak (Dhawan, 2020) might create more opportunities for PF integration in view of its significant value in online learning (Van Popta et al., 2017).

**Countries of Publication.** The articles featured in the sample come from 43 countries worldwide, with the top 10 publishing countries listed in Table 2. United States tops the list with 67 publications and 51 cited publications, followed by Netherlands ( $TP= 28$ ,  $NCP= 27$ ), China ( $TP= 21$ ,  $NCP= 17$ ), United Kingdom ( $TP= 20$ ,  $NCP= 18$ ) and Taiwan ( $TP= 17$ ,  $NCP= 15$ ). In terms of total citations, United States is the leading country with a total of 1297 citations, followed by the Netherlands ( $TC= 822$ ), Hong Kong ( $TC= 567$ ), and Taiwan

( $TC= 462$ ). Considering the value of the h-index, countries such as United States ( $h=15$ ), Netherlands ( $h=12$ ), and Taiwan ( $h=10$ ) play the leading roles in the overall body of research work.

**Top 10 Source Titles.** Table 3 shows the top 10 source titles where the PF articles have been published. These 10 source titles represent 24.28% of the total publications identified. The journal which published the most PF studies was *Assessment and Evaluation in Higher Education* (6.52%), followed by *Computers and Education* (2.90%), *European Journal of Psychology of Education* (2.17%), and *System* (2.17%).

**Citation Analysis.** Table 4 gives an overview of citation metrics for all the 276 PF articles. Citation analysis is one of the most prevalent methods used to measure the impact of a research publication (Ding & Cronin, 2011). As depicted, a total number of 4541 citation counts have been reported

Table 2  
Top 10 countries that contributed to the publication

Country	TP	NCP	TC	C/P	h	g
United States	67	51	1297	19.36	15	35
Netherlands	28	27	822	29.36	12	28
China	21	17	146	6.95	7	11
United Kingdom	20	18	189	9.45	7	13
Taiwan	17	15	462	27.18	10	17
Canada	15	11	136	9.07	5	11
Hong Kong	15	13	567	37.8	8	15
Macao	14	12	146	10.43	7	12
Australia	13	10	88	6.77	6	9
Germany	13	11	210	16.15	5	13

Notes. TP=total number of publications; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; h=h-index; g=g-index

Table 3  
*Top 10 source title*

Source title	TP	P (%)
Assessment and Evaluation in Higher Education	18	6.52
Computers and Education	8	2.90
European Journal of Psychology of Education	6	2.17
System	6	2.17
Educational Technology and Society	5	1.81
Learning and Instruction	5	1.81
Medical Science Educator	5	1.81
Teaching in Higher Education	5	1.81
Turkish Online Journal of Distance Education	5	1.81
Innovations in Education and Teaching International	4	1.45
Total	67	24.28

Notes. TP= Total publication; P= percentage

Table 4  
*Citations metrics*

Metrics	Data
Papers	276
Citations	4541
Years	35
Cites_Year	129.74
Cites_Paper	16.45
Cites_Author	2200.32
Papers_Author	144.99
Authors_Paper	2.54
h_index	31
g_index	60

in 35 years, and an average of 129.74 citation counts per year was recorded.

**Top 10 Most Productive Authors.** Based on the total number of publications, the top ten authors in the field are listed in Table 5. In total, there are four authors from the Netherlands, two authors from Germany and United States, respectively, and 1 author from Macao and Hong Kong, respectively.

It was found that Yu. S affiliated with Universidade de Macau, Macao is the most productive author contributing 15 PF publications. The highest number of cited publications (NCP=13) and h-index (h=7) were also recorded. Strijbos, J. W., affiliated with Ludwig-Maximilians-Universität München, Germany, and Schunn, C.D., affiliated with the University of Pittsburgh, United States are among the most prolific authors. The latter contributed 7 and 6 publications, respectively. As for total citation counts, Schunn, C.D. (TC=280), Prins, F.J. (TC= 199), and Strijbos, J.W (TC=198) are among the leading authors. Prins, F.J. and Schunn, C.D. have received the highest average citations per publication. In terms of h-index, Schunn, C. D and Lee, I. are also among the most influential authors, with an h-index of 5.

**The Most Popular Themes in Research Author Keyword Analysis.** A word cloud was generated to depict the top 100 author









2012) and student ability to make judgments on their peers' oral presentation skills (Patri, 2002) were reported. Combined peer comments and ratings were considered effective in improving dance performance (Hsia et al., 2016). Both qualities were found to significantly predict students' question-generation performance (Yu & Wu, 2013). Liu and Carless (2006) also proposed integrating peer feedback with peer assessment to foster peer feedback effectiveness. Also, Gielen et al. (2010b) findings confirmed that PF could be used to substitute teacher feedback as there was no significant difference in students' progress on essay marks in both conditions. Moreover, more progress was observed in the extended feedback condition with question form. Li et al. (2010) shared interesting findings, in which a significant relationship between the quality of PF provided for others and the quality of the students' final projects was found. Similarly, in another study (Dominick et al., 1997), students who were only involved in feedback-giving also demonstrated effective team behaviour, just like feedback groups. These two studies have thus suggested that students' active engagement during peer review can help them to perform better. However, if PF consists of only general and social comments, it might be harmful to student learning. As evidenced in Xie et al.'s (2008) study, PF negatively affected students' reflective thinking skills. Students' test anxiety increased in peer feedback conditions (Van den Boom et al., 2007). In another study (Ertmer, 2007), no significant improvement in students' postings was reported.

The positive effects of using the PF approach were found not only at the tertiary level of education, as evidenced in these studies (Dominick, 1997; Hsia et al., 2016; Li et al., 2010; Patri, 2002; Tseng & Tsai, 2007; Xie, 2012), but also at secondary (Gielen et al., 2010b; Phielix et al., 2010, 2011) and primary level (Brakel, 1990; Yu & Wu, 2013). Though it was found that most of these studies involved online PF (e.g. Hsia et al., 2016; Li et al., 2010; Tseng & Tsai, 2007; Phielix et al., 2010, 2011; Xie, 2012; Yu & Wu, 2013), successful implementation of PF in offline mode, either face-to-face or paper-based (see Brakel, 1990; Gielen et al., 2010b; Patri, 2002) was also reported. Most of these studies were conducted in writing context (Brakel, 1990; Gielen et al., 2010b; Phielix et al., 2010, 2011) and involved mostly online tasks or projects such as itinerary projects (Tseng & Tsai, 2007), online discussion (Xie, 2012) and question generation (Yu & Wu, 2013), Webquest projects (Li et al., 2010), weblogging journals (Xie et al., 2008) and discussion postings (Ertmer, 2007), thus calling for further exploration into the effects of PF in other contexts.

The advantages and disadvantages of technology-supported PF activities can be discussed from the affective, practical and technical aspects (Chen, 2014). Helping students overcome their concerns about non-native accents, social norm bias and cultural barriers might induce heavy workload feelings. Affordances of technology allow students to respond spontaneously, rehearse their responses, work at their own pace, express ideas, build considerable audience

awareness and a sense of responsibility. However, issues such as confusion and the time-consuming nature of the tasks were also highlighted. While technical functionalities provided students with many learning opportunities, such as easy retrieval for reflection work, authentic and communicative learning, more space in giving comments and reduced face-threatening experience, technical problems such as unstable servers, slow connections, and low accessibility to system etc. were also evident.

#### **Effective vs Ineffective Peer Feedback.**

Many studies (n=5) have significant findings concerning the different types of PF or feedback features deemed more helpful for student learning. For example, while Gielen et al. (2010a) found that PF with the presence of justification has a significant impact on students with low pre-test performance in writing, Nelson and Schunn (2009) revealed that decreased understanding was associated with feedback with explanations to problems. Furthermore, didactic feedback, characterised by lengthy explanations given to guide the peers, was also reported to have possible countereffects on the quality of student projects (Tseng and Tsai, 2007). While many studies offered corroborating evidence on the effective use of suggestion or solution feedback, such as in contributing to increased understanding (Nelson & Schunn, 2009) and successful feedback uptake (Van der Pol et al., 2008) as well as its significance at the beginning of peer assessment activities (Tseng & Tsai,

2007), Gielen et al. (2010a) found that the presence of suggestions, together with other quality criteria, such as appropriateness, specificity and clear formulation did not have a significant impact on performance improvement.

Similarly, even though elaborated specific feedback, which consists of information on the position, error type and suggestions on how to proceed, was perceived as more adequate, it was less effective than concise general feedback (Strijbos et al., 2010). Therefore, it is unexpected as feedback features such as the location of the problem and summary of performance were associated with increased understanding, which was the only significant mediator of feedback implementation (Nelson & Schunn, 2009). In Tseng and Tsai's (2007) study, it was found that reinforcing feedback, which is characterised by positive or supporting expressions, was helpful to promote better quality student projects. On the other hand, the possible countereffect of corrective feedback on the quality of student projects was also reported (Tseng & Tsai, 2007).

#### **Potential Challenges / Issues of Peer Feedback Implementation.**

The analysis revealed that there were five (5) main issues which were highlighted in the selected PF studies, i.e. lack of high-quality PF (n=7), students' negative perceptions on PF (n=4), students' lack of confidence in providing feedback / in their peers' ability to provide feedback (n=3), sociocultural factors (n=3) and face-saving issue (n=2).

***Lack of High-Quality Peer Feedback.***

Nilson (2003) pointed out that intrusion of emotion into evaluation, ignorance of professional expectations and work standards and laziness in evaluating work or writing up feedback were the three main issues concerning the quality of student PF. PF was restricted to certain writing features, such as grammar, mechanics and style, while there was a lack of feedback on content and organisation (Lin & Yang, 2011). Similarly, in another study (Hsia et al., 2016), several students complained that peer comments were too brief or vague to understand. Meanwhile, in comparison with tutor feedback, Van den Boom et al. (2007) revealed a lack of intended feedback as students did not actively co-reflect peer's work. Van den Berg et al. (2006) also revealed that PF focused mainly on evaluating the product and content; a lack of process-oriented feedback was observed. Also, Ware and O'Dowd's (2008) study noted limitations of peers' metalinguistic comments. Even though 83% of the revision-oriented PF were scientifically accurate, the numerous favourable judgments given were not found to support the improvement of learner products (Hovardas et al., 2014). Patchan and Schunn (2015) also discovered that PF from low reviewers received more praise and less criticism. So, to overcome these inadequacies, a more rigorous training or scaffolding (Hovardas et al., 2014), which includes awareness-raising activities (Ware & O'Dowd, 2008) and guiding prompts (Gielen et al., 2010a), the use of both written and oral feedback (Van den Berg et al., 2006), feedback items which require students to

perform tasks or mini-assignments, such as identifying or highlighting parts of the work evaluated to obtain student feedback (Nilson, 2003), observation instruction method (Van Steendam et al., 2010), a follow-up face-to-face class discussion to clarify problematic comments (Guardado & Shi, 2007) and extra scaffolding for students with lower writing ability to produce more criticism (Patchan & Schunn, 2015) were proposed.

***Negative Perceptions on Peer Feedback.***

While students acknowledged that PF activity allows them to get access to multiple perspectives (Ertmer, 2007; Hsia et al., 2016), express their ideas (Ertmer, 2007) and that it was helpful, comparative and of sufficient depth to aid their learning (Cushing et al., 2011), issues such as the lack of quality online PF, misunderstandings which might be resulted from a lack of immediate interaction and uncomfortable feelings when interacting with an anonymous peer were raised (Guardado & Shi, 2007). Moreover, only 44% of the students found PF was highly useful, only 23% considered giving PF was truly helpful, and up to 63% did not wish to use PF again (Gielen et al., 2010b). Even though most students valued PF, instructor feedback was still perceived as more important than PF (Ertmer, 2007). The reasons given were the concern of not getting quality feedback, the time-consuming nature of the task and potential biases. Also, an unequivocal preference on teacher feedback over PF was reported in Zhang's (1995) study.

***Students' Lack of Confidence in Providing PF / in Their Peers' Ability to Provide PF.*** Students expressed their concerns about them being qualified to provide PF (Ertmer, 2007). Similarly, students expressed their hesitations in providing PF due to their limited language proficiency as non-native English speakers (Guardado & Shi, 2007). In another study (Hovardas et al., 2014), students stated that they took expert feedback (66.7%) into account more than PF (27.8%). The issue dwells on their reluctance to accept their peers as capable assessors.

***The sociocultural factors.*** Zhang's (1995) study traced student resistance to PF, which involved 86.4% Asian students, raising the sociocultural issue. Similarly, conducted in the Asian context (Hsia et al., 2016), cultural factor was highlighted as one of the possible reasons why students who accept peer ratings showed better dance skill performance than those with only online peer comments. Furthermore, students' difficulties in expressing their opinions on peers' performance were reported, drawing upon previous studies. It was highlighted that Asian students tend to have fewer in-class peer interactions and pay more attention to ratings than comments. Moreover, it was revealed that students' Japanese cultural background was one of the contributing factors which resulted in students' ignorance of PF (40.9%). These findings thus suggested a need to pay due attention to cultural contexts when conducting PF activities.

***Face-saving issue.*** Students were found to use a polite tone and give general suggestions, trying to be inoffensive and avoid embarrassing others (Lin & Yang, 2011). However, some expressed their anxiety to give negative or corrective feedback for fear of hurting their peers (Cushing et al., 2011). It was highlighted that PF training should help students overcome reluctance or increase their comfort levels in criticizing or giving negative feedback to peers (Lin & Yang, 2011). Using pseudonyms instead of real names was suggested. Besides, it is crucial to explain the value of collaborative PF and procedures, establish a supportive context and create a scaffolding framework.

## CONCLUSION

This paper presents a comprehensive overview of the research trend of peer feedback (PF) studies in teaching and learning. A few conclusions were drawn as follows. First, the bibliometric analysis indicated positive growth in publications on PF since 2010, reaching its peak in the year 2019. Second, the growth trajectory of this literature since the beginning of the 21<sup>st</sup> century suggests that if the same trend continues, an increase in the figures can be expected. Third, given that the rise of online learning during the *COVID-19* pandemic might offer extra credence to online PF activity given its critical role in online teaching and learning, the upward trend of publications is highly anticipated.

Keyword and term analyses have revealed many topics or research themes

that have gained tremendous interest from scholars over the last 35 years (1985-2020). These topics include effects or impacts of PF, research sub-themes such as student performance, student motivation, students' perception, beliefs, attitude and experience, strategy and approach used, opportunities or benefits, challenges or problems, PF training, online PF, usefulness and effectiveness of PF approach in student learning and the use of PF in a second language or foreign language writing. Though writing is the central focus of PF studies in teaching and learning, this topic has also gained attention from other fields, evidenced by the clusters of medical education and clinical simulation in educational contexts.

Some potential avenues for future researchers are suggested as follows. Since certain research areas such as the effects/ effectiveness of peer feedback use, strategy use, and peer feedback use in writing context have gained a certain level of maturity in the field, future research can look into the use of peer feedback in other aspects, such as speaking context. Further review of the top-cited publications also confirmed the paucity of studies in this domain. It is worth noting that with the advancement of technology and rapid growth of communicative affordances of mobile media, which can better support the teaching of dynamic skills of speaking, it is anticipated that exploration into the role of mobile-assisted PF in promoting students' speaking skills will be of particular significance to practitioners in the field. Furthermore, despite such significant research advancements on the topic, as

demonstrated by the rich keyword variations, the density visualisation revealed that some terms related to tools, such as video and web, have a relatively lower density.

Therefore, future researchers might also consider exploring how PF, using more creative tools such as videos or web-based tools, can be incorporated to promote student learning in a pedagogically sound manner. Also, as the review found inconsistent findings regarding the effectiveness of different types/features of PF, there is a need for more research to be conducted in this aspect. Though subjected to different learning contexts, it is generally agreed that it needs to be acted on for PF to be effective. Even though elaborated PF is considered adequate, it might render passive and dependent students, as Tseng and Tsai (2007) highlighted. This issue thus deserves further investigation. With these issues in mind, further investigation into ways to raise a 'mindful reception' of PF among learners, as suggested by Gielen et al. (2010), would be practically and empirically crucial. Furthermore, as highlighted, learners' agreement with PF showed a significant relationship with its use for revision (Van der Pol et al., 2008); future researchers can thus explore how learners receive and integrate PF in improving their work. As issues such as the lack of high-quality PF, students' negative perceptions on PF, students' lack of confidence and sociocultural factors were highlighted as obvious challenges for successful PF implementation, future studies should endeavour to reduce such conflicts.

Limitations help to open up new vistas for future research. In this study, the literature search was conducted using the phrase ‘peer feedback’ on publication titles. Thereby some studies which did not use the key phrase in the titles were not listed. Future studies can use more keywords for the query or consider using a search strategy with titles, abstracts and keywords to expand the scope for analysis. Furthermore, since this study only focused on the *Scopus* database, future research can look into publications from other databases, such as *WoS*. Despite these limitations, this study has captured a bird’s eye view of the current trend of publications on PF in teaching and learning and shed some light on some potential research hotspots which can serve as a reference for researchers who are new in the research domain.

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