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Preservice Teachers' Reflections on English Teaching Practicum for Professional Development: A Bibliometric Analysis

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Annotation. This study examines the trends of preservice teachers' (PSTs) reflections on English teaching practicum for professional development. The relevant studies were searched and selected from the dataset of the Scopus database for analysis. The bibliometric analysis using the VOSviewer program was executed from 1989 to 2021, split into the earlier and recent periods. Results revealed the most used keywords and words, cited authors, journals and countries, and tech-based methods of PSTs' reflections.

Keywords: bibliometric analysis, citation analysis, preservice English teachers, teaching reflection, teacher education program, teacher training.

Introduction

In recent years, developments in the teacher education field have led to renewed interest for preservice teachers (PSTs) in teaching reflections on English teaching practicum for professional development. While numerous elucidations of the reflection practice may exist, it is normally approved that PSTs' reflections involve a learning process through and from teaching experience (Arslan, 2019; Dikilitas & Comoglu, 2020; Dubiner, 2018). Teaching reflection increases PSTs' awareness of teaching practice with critical analysis to show the direction toward new knowledge in the English teaching field and reframe

their development in the teaching profession (Tour & Barnes, 2021). Whatever form of reflection in English teaching practicum, PSTs might learn and grow during the reflection process (Arslan, 2019; Garza & Smith, 2015; Setyaningrahayu et al., 2019). Hence, PSTs might undertake teaching reflections to enable them to learn from English teaching practicum for future professional development due to the fundamental learning and growth.

Teaching reflection on English teaching practicum is an essential element of professional practice for PSTs' professional development (Arslan, 2019; Dikilitas & Comoglu, 2020; Dubiner, 2018). Some research emphasizes the need for reflection on teaching practicum in English teacher education (e.g., Arslan, 2019; Dubiner, 2018; Tour & Barnes, 2021). Teacher education has highlighted the importance of teaching practicum and transforming theory into practice for professional development (Maaranen & Stenberg, 2017; Ranjbari et al., 2020). When teaching reflection is implemented in English teaching practice, it is believed to encourage PSTs to integrate theoretical knowledge and professional practice for professional development (Arslan, 2019). Hence, PSTs should practice teaching reflection in various forms from their teaching practicum experience. In this sense, teaching reflection is early experienced by PSTs from English teaching practicum to get well-prepared for the teaching profession and improve their competence. This case points to the weightiness of PSTs' reflections for professional development.

The limited studies examining methods of PSTs' reflection in English teaching practicum for professional development were shown so far (e.g., Fernandez-Batanero et al., 2020; Major & Watson, 2017; Phuong et al., 2017; Poekert et al., 2020). These studies did not specifically focus on methods of PSTs' reflections, but they involved research on the PSTs' professional development in general. The reflection methods were limited, such as using video to analyze PSTs' teaching (Gaudin & Chalies, 2015), small-group problem-based learning (Koh & Tan, 2016), and reflective thinking via blogging (Garza & Smith, 2015) in such studies. Due to the limited accessibility of research on methods of PSTs' reflection, the absence of a complete study reporting the most preferred methods of reflections on English teaching practicum for professional development grips the attention of the researchers. In this regard, the present study also attempts to guide future research on portraying the trend methods of PSTs' reflection on English teaching practicum.

When the significance of PSTs' reflections in English teaching practicum for professional development is considered, it is summarized that the study focused on this issue is pivotal. In this regard, as one of the first bibliometric studies, the current study attempts to investigate academic research trends of PSTs' reflections on English teaching practicum for professional development in the Scopus database.

Literature Review

PSTs' reflections on English teaching practicum within the teacher education program

PSTs are defined as "people for whom practicum is constructed and through which they gain experience of the practicalities of teaching in schools" (Lawson et al., 2015, p. 2). PSTs are supported by teacher mentors from schools and teacher educators from universities to carry out teaching practicum (Lawson et al., 2015). The reflection ability is typically considered an essential element of PSTs' professional development during English teaching practicum in teacher education programs with different dimensions of reflective practice (Arslan, 2019; Dikilitas & Comoglu, 2020; Dubiner, 2018).

A prominent theorist, Schon (1996), stated that reflective practice is a critical process in perfecting a person in a particular discipline, such as PSTs conducting teaching practicum in teacher education programs. Schon (1996) defines reflective practice as considering one's experience as PSTs applying their knowledge to teaching experience in a teaching practicum while being trained by professionals such as teacher educators. A conscious reflection happens throughout the action in a teaching practicum (Meierdirk, 2016). In reflective practice, PSTs are encouraged to use a strategy to explore new knowledge from the fruitful class for problem-solving and improving teaching practice (Gungor, 2016). Hence, PSTs should think and learn from teaching practicum experience to evaluate the teaching actions so that they might have a new insight into the ways to suggest new strategies for better teaching practices.

PSTs' reflections on practice and beliefs are stressed during teaching practicum in teacher education programs across the world to produce their minds to continue growth for teacher professional development (Aimah et al., 2020; Arslan, 2019; Dikilitsş & Comoglu, 2020; Dubiner, 2018; Setyaningrahayu et al., 2019). Arslan (2019) described the reflective practice as an active and deliberate thought process addressing practical problems in teaching practicum to consider underlying beliefs and knowledge for problem-solving. Reflective practice enables PSTs and their students to identify and understand classroom context, develop general instruction for teaching quality (Gungor, 2016), and understand meaningful learning (Žibėnienė & Barkauskaitė, 2018). Thus, during teaching practicum, PSTs are encouraged to engage in technical reflection and critical thinking (Žibėnienė & Barkauskaitė, 2018).

Systematic review and meta-analysis of PSTs' reflective practices showed little of the research. They did not center on PSTs' reflection on English teaching practicum, but they generally focused on the reflection in teaching practicum within teacher education programs (Lawson et al., 2015). The limited previous research calls for the present study to be conducted through a bibliometric analysis.

Methods of PSTs' reflections on English teaching practicum for professional development

PSTs' attentions during teaching practicum are vital to increasing their understanding of teaching practice for professional development (Gu, 2013). Dikilitas and Comoglu (2020) encouraged PSTs to observe, analyze and evaluate their teaching through learning experiences. Additionally, PSTs' professional capacity could be enhanced using reflection materials through PSTs' professional learning values from the teaching (Irwan & Putra, 2021). Hence, in countering the practice of teacher professional development process for the future (Safari & Davaribina, 2021), PSTs get the chance to develop reflection skills supported by teacher mentors and teacher educators. Reflection skills enable them to (re)frame teacher professional identity (Dikilitas & Comoglu, 2020; Nue & Manara, 2022; Yagata, 2017).

Reflection is considered an essential element of PSTs' professional skills for professional development (Gu, 2013; Yagata, 2017). Reflection as performance in the workplace resulting from reflective practice processes for decision making and problem-solving in the fieldwork (Meierdirk, 2016), modifying the actions according to the results of reflection (Salajan & Duffield, 2019), and leading PSTs to professional development (Mermelstein, 2018). To run the process, PSTs need reflective practice methods to focus more on learning from real teaching conducted in the classroom, allowing them to interpret their teaching experience contextually (Meierdirk, 2016). Therefore, PSTs need to undertake reflective practice focusing more on practical issues during teaching practicum (Dikilitas & Comoglu, 2020; Setyaningrahayu et al., 2019).

Research on methods of PSTs' reflections on English teaching practicum for professional development was conducted (see Garza & Smith, 2015; Kiviniemi et al., 2020; Koh & Tan, 2016; Salajan & Duffield, 2019; Setyaningrahayu et al., 2019; Shavit & Moshe, 2019). Salajan and Duffield (2019) reported fruitful reflection through video observations to gauge PSTs' reflective practice competencies during teaching practicum. Garza and Smith (2015) applied blogs-based teaching reflection as a space for joint sharing of ideas and resources, co-constructive learning, and a thinking tool. Blogging also facilitated a community in providing support and encouragement for PSTs' reflections to reveal the technical teaching aspect during class observation (Garza & Smith, 2015), reflective thinking to understand the teaching instruction, and transfer learning to re-teaching practicum (Garza & Smith, 2015). In addition, Anderson (2018) recommended integrating an approach to teacher development to enhance PSTs' capacity as a teacher.

Method

With the intention of providing a guide for future studies by identifying the trend studies in the field of research and comparing the existing research on the issue, the research questions are formulated as follows:

- 1. What are the most-used keywords in studies of PSTs' reflections on English teaching practicum for professional development in Scopus?
- 2. What are the most-used words in the abstract section in studies of PSTs' reflections on English teaching practicum for professional development in Scopus?
- 3. Who are the most-cited authors conducting studies of PSTs' reflections on English teaching practicum for professional development in Scopus?
- 4. What are the most-cited journals publishing studies of PSTs' reflections on English teaching practicum for professional development in Scopus?
- 5. What are the most-cited countries which published studies of PSTs' reflections on English teaching practicum for professional development in Scopus?
- 6. What are the most-used methods of PSTs' reflections on English teaching practicum for professional development in Scopus?

Under the scope of the study, the trends of PSTs' reflections on English teaching practicum for professional development through the Scopus database were examined. Bibliometric analysis was used and mainly adopted since it provides visualization so that researchers can recognize the relationships between the key concepts (Yilmaz et al., 2019). The bibliometric analysis identifies the trends in a field (Kasemodel et al., 2016) by investigating studies carried out in a certain area among researchers in institutions (Marti-Parreno et al., 2016; Sonmez, 2020). Hence, the bibliometric analysis applied in this study meets the aim of examining the trend studies in PSTs' reflections on English teaching practicum for professional development. In this regard, through bibliometric analysis utilizing the VOSviewer program, the present study would uncover the most-used keywords, words in the abstract sections, cited authors, journals, countries publishing the studies, and used methods of PSTs' reflections.

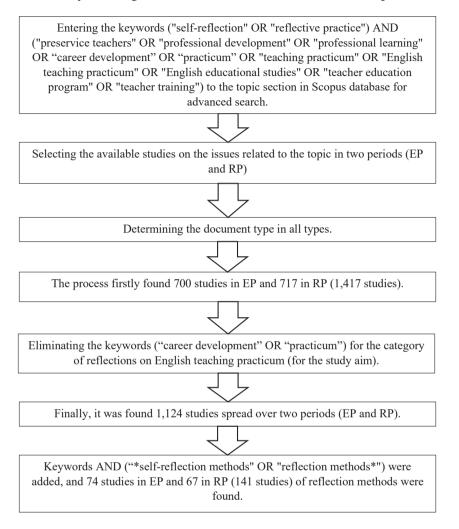
In the present study, the bibliometric analysis would contribute to the field of the study for further investigation of the studies of PSTs' reflections on English teaching practicum for professional development. The analysis used a variety of indicators, for instance, a number of publications and citations, to gauge the trend productivity and effect of the studies and serve enlightening outline of the research, particularly in terms of the most-used keywords, words in the abstract sections, cited authors, journals and countries, and methods of PSTs' reflections. Also, the future researcher would benefit from the bibliometric analysis as a guide for future studies by portraying the trend and informative overview of the research in the PSTs' reflections on English teaching practicum for professional development and comparing the existing research on the issue.

Data collection

Constructing the dataset from the Scopus database was initially conducted for the procedure. In this study, the Scopus database was a source for dataset construction. Several rationales were argued to justify the Scopus database as the choice. First, the Scopus database tends to be a trending and the most extensive database with more coverage for all qualified research studies. Second, it provides an ideal and valid data source for bibliometric analysis that enables researchers to extract bibliographic data regarding the articles relevant to this study's issue. Third, for making citation reports for each domain, such as extracting productive author, institution, and country, the Scopus database allows researchers to further analyze the selected articles according to the domains. In addition, the present study only focused on the Scopus database by which the results would take more concentration on one kind of database purposed the high quality and quantity responsibilities of the present study results.

To construct the dataset, the studies on the issues related to PSTs' reflections on English teaching practicum for professional development in the study period were selected. The analysis was executed from 1989 to 2021, split into two periods of study – the earlier period (EP): 1989–2014 and recent period (RP): 2015–2021 – to analyze the expansion of scientific production of the research topic over time. The keywords ("self-reflection" OR "reflective practice") AND ("preservice teachers" OR "professional development" OR "professional learning" OR "career development" OR "practicum" OR "teaching practicum" OR "English teaching practicum" OR "English educational studies" OR "teacher education program" OR "teacher training") were then entered to the topic section. It firstly found 700 studies in EP and 717 in RP (1,417 studies) of the selected topic by those keywords (the search was conducted in November 2021). When the keywords ("career development" OR "practicum") were eliminated for the category of reflections on English teaching practicum, the 1,124 studies spread over two periods (EP and RP) were found and downloaded in CSV format for analysis through bibliometrics. Furthermore, to determine the used methods of PSTs' reflections on English teaching practicum in the existing research, the keywords AND ("*self-reflection methods" OR "reflection methods") were added, and 74 studies in EP and 67 in RP (141 studies) of reflection methods were found. The process of selecting the studies on the issues related to the topic in this study is shown in Figure 1.

Figure 1 *The Process of Selecting the Studies on the Issues Related to the Topic*



Data analysis

To uncover the network and overlay visualizations of the most-used keywords and words in the abstract section, the most-cited authors, the most-cited journals, mentioned countries, and the most-used methods of PSTs' reflection on English teaching practicum in the studies, the VOSviewer program was used for bibliometric analysis. The analysis procedures, including co-occurrence and citation analyses, were executed by transferring the data gained from the Scopus database to VOSviewer software as a functional and beneficial device for visualizing bibliometric networks (Van Eck & Waltman, 2010; Deveci, 2022). The co-occurrence analysis was to uncover relationships among extract-

ed keywords (periodical or current topic), wherein keywords converging into a cluster represent a common theme of the issue regarding the studies of preservice teachers' reflections on English teaching practicum for professional development. Co-occurrence analysis reveals the development of the study field over time (Zhao, 2017). Meanwhile, the citation analysis allowed for quantitative analysis of publications, with more citations presumed to indicate more significant influence. Citation analysis reveals the similarities and differences between influential countries, institutions, or authors (Deveci, 2022).

The data were analyzed through the following steps. First, finding the most-used keywords in the studies was done by generating a visualization map based on the text data, co-occurrence analysis, and author keywords were chosen, and then by determining ten as the minimum number of keyword occurrences. Second, to find the most-used words in the abstract section, the abstract fields and binary counting method were chosen, and it determined ten as the minimum number of occurrences. Third, to find the most cited (citation) authors conducting the studies, the citation analysis and authors were chosen, and it determined three as the minimum number of documents of an author and one as the minimum number of citations of an author, Fourth, to determine the most-cited journal publishing studies, the citation analysis and sources were chosen, and it adjusted five as the minimum number of documents of a source and five as the minimum number of citations of a source. Fifth, to specify the most-cited countries publishing the studies, the citation analysis and countries were chosen, and it determined twenty-five maximum number of countries per document and selected five as the minimum number of documents of a country and one as the minimum number of citations of a country. Finally, to determine the most-used methods of PSTs' reflections, the keywords obtained from the dataset were selected, and the keywords and the title of the studies regarding the reflection methods based on the theoretical framework were then analyzed.

Results

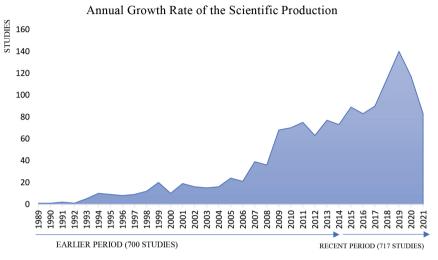
The results indicated 700 studies of the selected study topic in EP over 25 years, while they revealed 717 studies in RP, for seven years, with an annual growth rate of 3.85% in EP, 14.29% in RP, and 3.03% in the whole period. The result of the initial search of the studies for the two periods is shown in Table 1. The annual growth rate of the scientific production related to studies can be seen in Figure 2.

Table 1 *The Result of Initial Search of the Studies Published in Scopus Database* (N = 1,417)

	EP (1989–2014	É)		RP (2015–2021	1)
Year	Studies (N = 700)	%	Year	Studies (N = 717)	%
2014	73	10.43	2021	83	11.58
2013	77	11.00	2020	117	16.32
2012	63	9.00	2019	140	19.53
2011	75	10.71	2018	115	16.04
2010	70	10.00	2017	90	12.55
2009	68	9.71	2016	83	11.58
2008	36	5.14	2015	89	12.41
2007	39	5.57			
2006	21	3.00			
2005	24	3.43			
2004	16	2.29			
2003	15	2.14			
2002	16	2.29			
2001	19	2.71			
2000	10	1.43			
1999	20	2.86			
1998	12	1.71			
1997	9	1.29			
1996	8	1.14			
1995	9	1.29			
1994	10	1.43			
1993	5	0.71			
1992	1	0.14			
1991	2	0.29			
1990	1	0.14			
1989	1	0.14	,		

Figure 2 illustrates the initial search of the studies. Based on the average number of documents, two study periods were identified, with 2015 as the cutting edge. Hence, the study analyzed the recent period (RP) extending up to 2021 enclosed (e.g., seven years) and the earlier period (EP), which includes the number of years differing from RP (e.g., 26 years) running from 2014 to 1989, the backward direction.

Figure 2
Annual Growth Rate of the Scientific Production Related to Studies in EP and RP



The most-used keywords in studies

The most-used keywords in the studies were obtained from the procedures: first, to generate a visualization map based on the text data, co-occurrence analysis and author keywords were chosen. Second, by determining ten as the minimum number of keyword occurrences, the result showed that there were 47 as the number of keywords to be elected. From the process, the visual map found through co-occurrence keywords analysis can be displayed in Figure 3.

Figure 3
The Most-Used Keywords in the Field of Studies

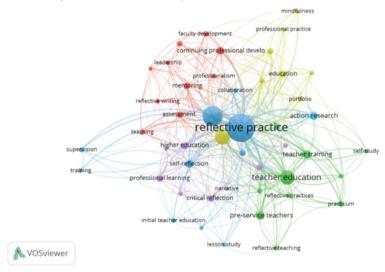


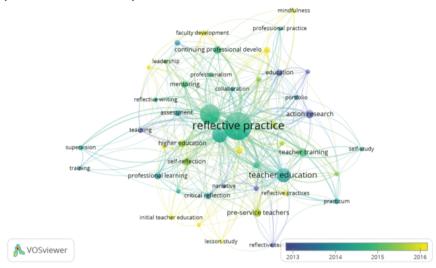
Figure 3 points out that six clusters appeared. The most-used keywords in the studies were *reflective practice* (total studies 433), *professional development* (total studies 226), and *reflection* (total studies 134). The results indicate that research mostly centered on reflective practice for teacher professional development in education rather than in other fields. The top ten of the most-used keywords in the studies of PSTs' reflections on English teaching practicum for professional development are shown in Table 2. Additionally, some research focused on EFL preservice teachers, while others focused on program evaluation for professional development.

Table 2 *The Most-Used Keywords in the Field of Studies*

No	Keyword -	Studies (N	Total	%	
110		EP (1989-2014)	RP (2015–021)	Total	70
1	Reflective practice	213	220	433	38.52
2	Professional development	139	87	226	20.11
3	Reflection	107	27	134	11.92
4	Teacher education	82	37	119	10.59
5	Action research	32	8	40	3.56
6	Preservice teacher	6	33	39	3.47
7	Teacher training	19	19	38	3.38
8	Self-reflection	17	18	35	3.11
9	Continuing professional development	14	20	34	3.02
10	Mentoring	13	13	26	2.31

It can be stated that the studies of PSTs' reflections on English teaching practicum for professional development in teacher education expanded from EP to RP with different use of keywords. *Reflective practice* was the most used keyword (see Table 2). In a similar vein, from the analysis of the keyword distribution by years as displayed in Figure 4, the research mostly centered on the subjects in topic area of reflective practice mostly from 2013 of EP to 2016 of RP. It illustrated studies thematizing reflective practice for PSTs' professional development.

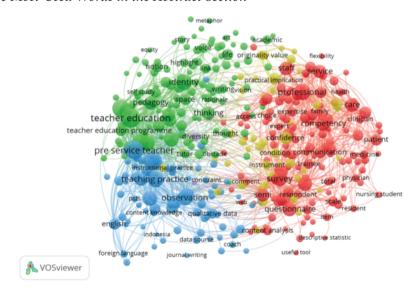
Figure 4
The Keyword Distributions by Year in the Research



The most-used words in the abstract section

The abstract fields and binary counting method were chosen to find the most-used words in the abstract section. By determining ten as the minimum number of occurrences, it was informed 400 as the number of terms to be picked. The visual map found through the analysis is displayed in Figure 5.

Figure 5 *The Most-Used Words in the Abstract Section*



As displayed in Figure 4, the most-used words in the abstract section were visualized in five clusters. *Classroom* (total studies 128), *professional* (total studies 108), and *Identity* (total studies 97) were the evidence of the most-used words in the abstract section (see Table 3). Additionally, the most-used words in the form of phrases were *teacher education* (total studies 139), *preservice teacher* (total studies 137), and *teacher educator* (total studies 117) (see Table 3). These results mean that the research mostly centered on the professional development of PSTs or student teacher in the teaching practicum of the teacher education program. The top ten of the most-used words in the abstract section in the studies regarding PSTs' reflections on English teaching practicum for professional development are shown in Table 3.

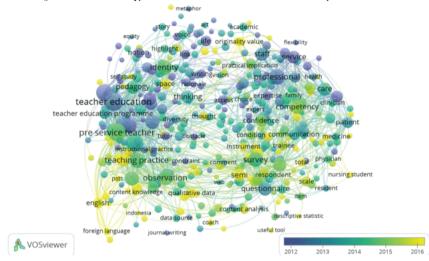
In line with the results in Table 3, from the observation, the amount of research using the words in the abstract section was distributed in 2012, showing the area of research thematizing teacher education. The distribution can be displayed in Figure 6. It reveals that the studies mainly focused on PSTs in teacher education programs in the topic area of professional development indicated with the words in the abstract section with a more significant number of studies conducted from 2012 in EP to 2016 in RP.

 Table 3

 The Most-Used Words in the Abstract Section

No	Т	Studies (N	Total	0/	
INO	Term	EP (1989–2014)	RP (2015–2021)	Iotai	%
1	Teacher education	104	35	139	12.37
2	Preservice teacher	25	112	137	12.19
3	Classroom	106	22	128	11.38
4	Teacher educator	65	52	117	10.41
5	Teacher education program	88	24	112	9.96
6	Professional	52	56	108	9.61
7	Teaching practice	46	53	99	8.81
8	Identity	41	56	97	8.63
9	Observation	54	41	95	8.45
10	Student-teacher	10	83	93	8.27

Figure 6The Amount of Research Using Words in the Abstract Section by Year



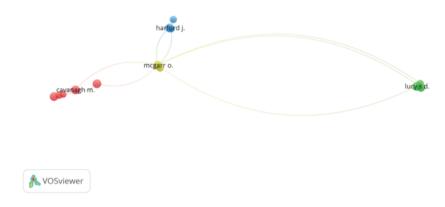
The most-cited authors conducting the studies

The citation analysis and authors were chosen to find the most cited (citation) authors who conducted studies. By determining three as the minimum number of documents of an author and one as the minimum number of citations of an author, the result showed 35 as the number of authors to be picked. The visual map is presented in Figure 7. It indicates that *Macruairc* (citations 204; total documents 3), *Harford* (citations 204; total documents 4), and *Day* (citations 203; total documents were the most-cited authors. The top ten of the most-cited authors who conducted the studies are shown in Table 4.

Table 4 *The Most-Cited Authors Conducting the Studies (Citation Analysis)*

No	Author	Docu	Documents		Citations
110	Author	EP (1989-2014)	RP (2015–2021)	- Total	Citations
1	Macruairc	3	0	3	204
2	Harford	3	1	4	204
3	Day	4	0	4	203
4	Farrell	5	3	8	121
5	Clarke	5	0	5	115
6	Cavanagh	2	2	4	54
7	Camburn	1	2	3	51
8	Mcgarr	2	2	4	51
9	Jones	4	0	4	48
10	Watts	3	1	4	46

Figure 7
The Most-Cited (Citation) Authors Conducting the Studies

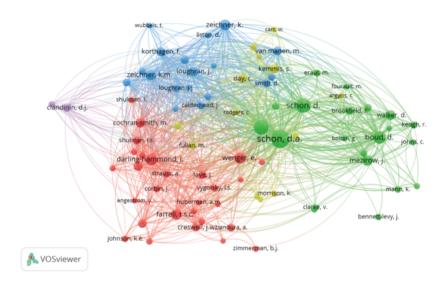


Additionally, co-citation analysis and cited authors were chosen to determine the most-cited (co-citation) authors conducting the studies. By adjusting 50 as the minimum number of citations of an author, there were 82 as the number of authors to be elected. The analysis results show that *Schon*, *D. A.* (total co-citations 499), *Dewey*, *J.* (total co-citations 342, and *Schon*, *D.* (total co-citations 333) were the most-cited authors. These authors co-authored with others to publish papers. The visual map found through the analysis is displayed in Figure 8, and the top ten of the most-cited authors who conducted the studies are shown in Table 5.

Table 5 *The Most-Cited Authors Conducting the Studies (Co-Citation Analysis)*

No	A 41	Co-ci	Total	
110	Author	EP (1989-2014)	RP (2015–2021)	Iotai
1	Schon, D.A.	220	279	499
2	Dewey, J.	156	186	342
3	Schon, D.	125	208	333
4	Boud, D.	91	153	244
5	Darling-Hammond, L.	51	159	210
6	Wenger, E.	75	112	187
7	Zeichner, K.	108	72	180
8	Farrell, T.S.C.	26	149	175
9	Mezirow, J.	51	112	163
10	Zeichner, K.M.	50	106	156

Figure 8
The Most-Cited (Co-Citation) Authors Conducting the Studies



The most-cited journals publishing the studies

The citation analysis and sources were chosen to determine the most-cited journal publishing studies. By adjusting five as the minimum number of documents of a source and five as the minimum number of citations of a source, the result reported 55 as the number of sources to be picked. The visualization map gained through the analysis is demonstrated in Figure 9. It points out that the most-cited journals in the studies were *Teaching and Teacher Education* (citations 1,816; total documents 37), *Reflective Practice* (citations 722; total documents 106), and *Journal of Education for Teaching* (citations 400; total documents 14). The top ten of the most-cited journals publishing the studies (citation analysis) is shown in Table 6.

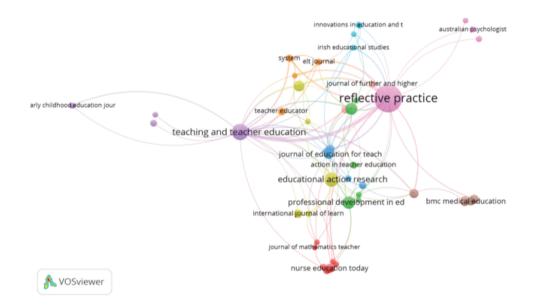
 Table 6

 The Most-Cited Journals Publishing the Studies (Citation Analysis)

No	Source	Documents		Total	Citations	
110	Source	EP (1989-2014)	RP (2015–2021)	Total	Citations	
1	Teaching and Teacher Education	29	8	37	1,816	
2	Reflective Practice	45	61	106	722	
3	Journal of Education for Teaching	8	6	14	400	
4	Educational Action Research	22	6	28	370	
5	Journal of Advanced Nursing	8	0	8	305	

NI.	C	Docu	Total	Civilia	
No	Source	EP (1989–2014)	RP (2015–2021)	lotai	Citations
6	System	10	0	10	301
7	Medical Teacher	8	2	10	296
8	Medical Education	7	0	7	214
9	Journal of Continuing Education	4	8	12	210
10	Educational Research	12	0	12	195

Figure 9The Most-Cited Journals Publishing the Studies (Citation Analysis)

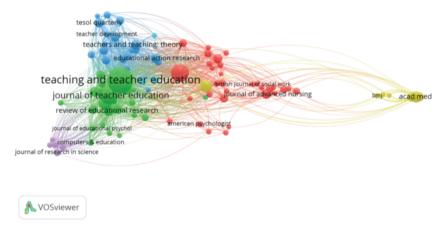


In addition, the co-citation analysis and cited sources were chosen. By adjusting 50 as the minimum number of citations of a source, the result reported 90 as the number of sources to be elected. The visualization map gained through the analysis is demonstrated in Figure 10. It reveals that the most-cited journals in the studies were *Teaching and Teacher Education* (total co-citations 1,385), *Journal of Teacher Education* (total co-citations 671), and *Reflective Practice* (total co-citations 652). The top ten of the most-cited journals publishing the studies (co-citation analysis) is shown in Table 7.

Table 7 *The Most-Cited Journals Publishing the Studies (Co-Citation Analysis)*

No	Source -	Co-cit	Total	
NO	Source	EP (1989–2014)	RP (2015–2021)	Iotai
1	Teaching and Teacher Education	1,065	320	1,385
2	Journal of Teacher Education	175	496	671
3	Reflective Practice	493	159	652
4	Educational Researcher	0	357	357
5	The Reflective Practitioner	0	280	280
6	Acad Med	0	257	257
7	Review of Educational Research	0	230	230
8	Teachers College Record	41	177	218
9	Teachers and Teaching: Theory and Practice	168	41	209
10	Educational Leadership	0	207	207

Figure 10
The Most-Cited Journals (Co-Citation Analysis)



The most-cited countries publishing the studies

The citation analysis and countries were chosen to specify the most-cited countries publishing the studies. The maximum number of countries per document was determined as 25. Then it was selected five as the minimum number of documents of a country and one as the minimum number of citations of a country. Results showed 36 as the number of countries to be selected. The most-cited countries publishing the studies were visualized in seven clusters (see Figure 11). Figure 11 indicates that the most-cited countries publishing the studies were such as *the United States* (total documents 382; citations 4,124),

the United Kingdom (total documents 264; citations 3,564), and *Australia* (total documents 200; citations 2,009). The top ten of the most-cited countries publishing the studies is shown in Table 8.

Table 8 *The Most-Cited Countries Publishing the Studies*

N.T	C	Docu	Total	Civit		
No	Country	EP (1989–2014)	RP (2015–2021)	Total	Citations	
1	The United States	232	150	382	4,124	
2	The United Kingdom	143	121	264	3,564	
3	Australia	101	99	200	2,009	
4	Canada	36	59	95	1,343	
5	Ireland	15	31	46	598	
6	Turkey	13	24	37	144	
7	Spain	14	16	30	212	
8	New Zealand	12	17	29	311	
9	South Africa	10	18	28	128	
10	Malaysia	11	13	24	40	

Based on the evaluation as seen in Figure 12, it is clear that the citations of the studies were distributed in the countries which primarily began in 2012 of EP and 2016 of RP, mainly in *the United States, the United Kingdom, Australia,* and *Canada.* Additionally, the amount of research in countries distributed over the years indicated that the research had been primarily published in all those countries and in *Spain, Turkey, Germany, Iran,* and *South Korea.*

Figure 11 *The Most-Cited Countries Publishing the Studies*

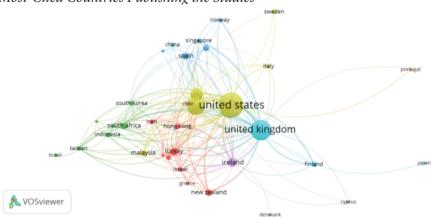
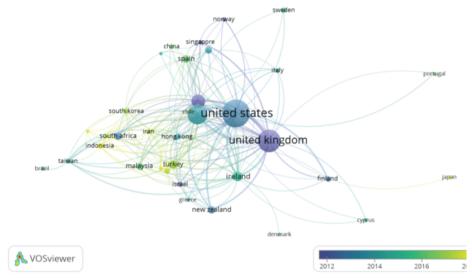


Figure 12
The Citations of the Research Distributed in Countries by Years



The most-used methods of PSTs' reflections

The keywords obtained from the dataset were selected to determine the most-used methods of PSTs' reflections on English teaching practicum. The keywords and the title of the studies regarding the reflection methods based on the theoretical framework were then analyzed. The results show that among the available research, 74 studies in EP and 67 in RP (141 studies) used different methods of PSTs' reflections (see Table 9).

The method terms for reflections were not generally presented with specific method names. Still, they mainly had applied technology integration such as professional portfolio, video-based self-reflection, lesson video clips, peer video, blog-based professional development, microblogging about teaching, online video platform, online video-based learning community, peer video-based coaching initiative, and professional practice portfolio. In addition, some research applied the technology as method names such as e-portfolio, blogging, blogs, video clips, online video, digital video, and photography. Based on the frequencies, the top ten of the most-used methods of PSTs' reflections in the studies were reflective practice e-portfolio with total studies 29, reflective journal writing with total studies 21, and video-based self-reflection with total studies 16 (see Table 9). This case reveals that the trend methods of PSTs' reflections on English teaching practicum for professional development applied tech-based methods.

Table 9 *The Most-Used Methods of PSTs' Reflections in the Studies*

	•	Studies (
No	Reflection Methods	EP (1989–2014) (N = 74)	RP (2015–2021) (N = 67)	Total	%
1	Reflective practice e-portfolio	19	10	29	20.57
2	Reflective journal writing	9	12	21	14.89
3	Video-based self-reflection	8	8	16	11.35
4	Problem-based learning	5	8	13	9.22
5	Reflective teaching	7	5	12	8.51
6	Blog-based professional development	5	4	9	6.38
7	Collaborative reflection	4	4	8	5.67
8	Narrative writing	5	3	8	5.67
9	Reflective thinking	3	1	4	2.84
10	Peer mentoring	2	2	4	2.84
11	Peer observation	1	2	3	2.13
12	Online video platform	1	2	3	2.13
13	Online video-based learning community	1	1	2	1.42
14	Rating reflection	2	0	2	1.42
15	Photography	1	1	2	1.42
16	Practice-based coaching	0	1	1	0.71
17	Microblogging about teaching	1	0	1	0.71
18	Iterative approach	0	1	1	0.71
19	Journal instruction	0	1	1	0.71
20	Peer video-based coaching initiative	0	1	1	0.71

Discussion

The present study selected and analyzed 1,124 studies spread over two periods of study (EP and RP) of PSTs' reflections on English teaching practicum for professional development using the VOSviewer program. In addition, 74 studies in EP and 67 in RP (141 studies) were examined regarding the tech-based methods applied for PSTs' reflections. Indicated with the most-used keywords, the trend research mostly centered on reflective practice for teacher professional development in education rather than in other

fields (e.g., Leigh, 2016; Mulryan-Kyne, 2021). The result confirms Arslan's (2019) idea that reflective practice as an active and deliberate thought process addresses practical problems in teaching practicum for problem-solving in a teaching profession. It indicates the importance of PSTs conducting reflections on teaching practicum for professional development (Tour & Barnes, 2021). Some studies focused on PSTs' reflective practice for professional development in English education programs (Nguyen, 2020). The keyword distributions also indicate the research mostly centered on the subjects of reflective practice (Mulryan-Kyne, 2021) and professional development (Leigh, 2016). The present study suggests feature research to emphasize conducting studies of PSTs' reflections on English teaching practicum. It is pivotal to reflect during teaching practicum in the English education program (Arslan, 2019; Dikilitas & Comoglu, 2020; Dubiner, 2018).

The most-used words in the abstract section assert the research primarily focused on PSTs in teacher education programs (Nguyen, 2020). Arslan (2019) and Dubiner (2018) stated that reflective practice could encourage PSTs to integrate theoretical knowledge and professional practice for professional development. Furthermore, the amount of research using the words in the abstract confirms the trend studies centered on the research of PSTs' reflections in teacher education programs (Gungor, 2016; Mcgarr, 2020). Schon (1996) said that PSTs' reflections involved teaching practicum experience in teacher education. It is "a conscious reflection that occurs during the moment of action" in a teaching practicum (Meierdirk, 2016, p. 3) for professional development (Gu, 2013). In addition, the most-cited authors and journals show that *Macruairc* and *Harford* are prominent authors, and *Teaching and Teacher Education* and *Reflective Practice* were reputable journals in this field. It further emphasizes the necessity of English PSTs to conduct more reflective practices.

The amount of research in countries distributed over the years hints at the primary research in *Spain* (Agurtzane et al., 2019), *Turkey* (Gungor, 2016), *Germany* (Prilop, 2019), *Iran* (Moghaddam et al., 2020), and *South Korea* (Shin & Chang, 2016). They indicate that studies of reflective practice in PST education have been emphasized in these countries. Additionally, the research began from 2012 (EP) to 2018 (RP) mainly in *the United States* (Salajan & Duffield, 2019), *the United Kingdom* (Dubiner, 2018), *Australia* (Nguyen & Ngo, 2018), and *Canada* (Russel, 2018). These results indicate that these countries are the pioneers of the study issue. It suggests younger researchers employ research on PSTs' reflective practice.

Finally, the most-used methods of PSTs' reflections show no name of the "reflection methods" terms as keywords and no specific method name in general. Still, they were mostly presented with technology integration. The most-used methods of PSTs' reflection in the studies, e.g., reflective practice e-portfolio (Nguyen, 2020), reflective journal writing (Moghaddam et al., 2020), video-based self-reflection (Setyaningrahayu et al., 2019), problem-based learning (Koh & Tan, 2016), reflective teaching (Hendriwanto, 2021), blog-based professional development (Garza & Smith, 2015), collaborative reflection (Gutierrez, 2019),

reflective thinking (Shavit & Moshe, 2019), peer mentoring (Nguyen & Ngo, 2018), and peer observation (Lakshmi, 2014). They indicate the trend methods of PSTs' reflections applying tech-based methods. This idea further emphasizes tech-based methods used as PSTs' reflection methods.

Conclusion

This study examined studies of PSTs' reflections on English teaching practicum for professional development through bibliometric analysis using the VOSviewer program. The results revealed the enlightening outline of the study in terms of the most-used keywords, words in the abstract sections, cited authors, journals and countries, and methods of PSTs' reflections. The most-used keywords in the research mostly centered on reflective practice for teacher professional development in education rather than in other fields. At the same time, the most words in the abstract section mainly focused on PSTs in the teacher education program. The prominent authors in this field are *Macruairc* and *Harford. Teaching and Teacher Education* and *Reflective Practice* are reputable journals publishing the studies, and they were primarily published in *the United States*, *the United Kingdom, Australia*, and *Canada*. Tech-based methods were the trend methods of PSTs' reflections on English teaching practicum for professional development.

This article provides a general overview of the trend studies of PSTs' reflection practices on English teaching practicum for professional development portrayed from the bibliometric analysis through VOSviewer. The trend studies of the study issue illustrate insightful guidance for researchers, younger researchers, in particular, to focus on future studies by seeing the lens of dominant keywords, prominent authors, reputable journals and pioneer countries publishing the studies, and trend tech-based methods of PSTs' reflections. Despite the valuable insights found in this article, a factor limits the generalization of the study results. Regarding the raw data of the study gardened only from the Scopus database, it is possible to garner more data from other databases for comprehensive understanding.

Research Implications

The study provides practical implications of a guide for future research by identifying the trend studies of PSTs' reflections on English teaching practicum for professional development and comparing the existing research on the issue. This research is valued for the future researcher, younger researchers in particular. They benefited from the bibliometric analysis using VOSviewer as a way in academic research to portray the trends and informative overview in this field and visualize bibliometric networks.

The findings suggest that: (1) future research should alternatively study the same topic but different fields in teacher education programs; (2) further studies should emphasize the necessity of PSTs conducting the reflective practice in the teacher education programs; (3) many chances are available for future research from other continents such as Africa, Asia, and Australia to conduct study on reflection practices; (4) future research emphasizes the use of methodological terms integrated with tech-based methods to uncover potential technologies integrated into reflection methods; and (5) future researchers need to conduct studies by garnering more studies published from other databases as lenses, such as WoS, Google Scholar, Microsoft Academic, etc., to gain a more comprehensive understanding.

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Conflicts of interest

The authors declare no conflict of interest.

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Būsimųjų anglų kalbos mokytojų refleksijos apie anglų kalbos mokymo praktiką siekiant profesinio tobulėjimo: bibliometrinė analizė

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Santrauka

Tyrimo tikslas – išnagrinėti būsimųjų mokytojų refleksijas apie anglų kalbos mokymo praktiką profesiniam tobulėjimui vystytis. Tam atlikta bibliometrinė analizė naudojant VOSviewer programą. Analizė apima 1989–2021 metus ir suskirstyta į du laikotarpius: ankstesnį laikotarpį (angl. EP), t. y. 1989–2014 m., ir pastarąjį laikotarpį (angl. RP), t. y. 2015–2021 m. Perkeliant surinktus duomenis iš Scopus duomenų bazės į VOSviewer programą buvo atlikta pasikartojimų ir citatų analizė. Tyrimu buvo siekiama atskleisti dažniausiai vartojamus raktinius žodžius, žodžius anotacijose, cituojamus autorius, žurnalus ir šalis bei būsimųjų anglų kalbos mokytojų refleksijos metodus. Iš 1124 apžvelgtų tyrimų buvo išnagrinėti 74 ankstesnio periodo (angl. EP) ir 67 pastarojo periodo (angl. RP) tyrimai. Iš viso išnagrinėta 141 tyrimas.

Rezultatai atskleidė, kad reflektyvi praktika, profesinis tobulėjimas ir refleksija buvo dažniausiai tyrimuose vartojami raktiniai žodžiai. Anotacijose dažniausi buvo mokytojų rengimas, būsimas mokytojas ir mokytojas-edukatorius. Žymiausi autoriai Macruairc ir Harford. Tokie žodžiai kaip mokymas ir mokytojų švietimas bei reflektyvioji praktika dominavo geros reputacijos žurnaluose. Daugiausia tyrimų paskelbta JAV, Jungtinėje Karalystėje, Australijoje ir Kanadoje. Būsimųjų anglų kalbos mokytojų refleksijos metodų žodžiai buvo reflektyviosios praktikos e-portfelis, reflektyvus žurnalų rašymas ir vaizdo įrašais pagrįsta savirefleksija. Šis tyrimas galėtų būti įžvalgus vadovas tolimesniems tyrimams, susijusiems su būsimųjų anglų kalbos mokytojų refleksijomis, atsižvelgiant į tyrimų kitimo tendencijas ir informatyvią apžvalgą bei palyginimus su jau esamais tyrimais.

Esminiai žodžiai: bibliometrinė analizė, citatų analizė, būsimieji anglų kalbos mokytojai, mokymo refleksija, mokytojų rengimo programa, mokytojų mokymai.

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