

Bibliometric Analysis of Research on the First-Year Experiences of University Students

Üniversite Öğrencilerinin Birinci Yıl Deneyimleri Üzerine Yapılan Araştırmaların Bibliyometrik Analizi

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Özet

Bu çalışmanın amacı, üniversite öğrencilerinin birinci yıl deneyimleri ile ilgili alanyazını sistematik olarak incelemektir. Bu amacı gerçekleştirmek üzere PRISMA-P tekniği kullanılmıştır. İnceleme, Scopus veri tabanında 2000-2019 yılları arasında yayımlanmış olan 161 çalışmayı içermektedir. Analiz sonuçları çalışmaların neredeyse yarısının 2015-2019 yılları arasında yapıldığını ve çalışma sayısında artış olduğunu göstermiştir. Bu konuda en üretken akademisyenler İskandinav ülkelerinden gelirken, ABD, Avustralya ve İngiltere çok sayıda makale yayımlayan ülkelerdir. Şaşırtıcı bir şekilde, bu çalışmalarda nicel araştırma deseninden daha çok nitel araştırma desenleri yürütülmüştür. Araştırmanın bilgi tabanının entelektüel yapısı, üniversitede ilk yılın, yükseköğrenime geçişin ve öğrenciyi okulda tutmanın önemini gözler önüne sermiştir. Akademik ve sosyal uyum en sık çalışılan konuların başında gelmektedir. Çalışma, ilk yıl deneyiminin yapısı ve süreçleri hakkındaki alan yazındaki anlayışa bir katkı sunmaktadır.

Anahtar Kelimeler: bibliyometrik analiz, ilk yıl deneyimi, üniversite öğrencileri, yükseköğretim.

Abstract

The purpose of the current study is to systematically review the literature on the first-year college student experience. The study used Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) to review the studies. The review included 161 studies from 2000 to 2019 within the Scopus database. Results indicated that almost half of the studies were conducted between 2015 and 2019 such that there is an increase in the number of studies. Most productive scholars were from Nordic Countries on this topic while the US, Australia, and UK published a high number of articles. Surprisingly, there were more qualitative studies than quantitative ones. Intellectual structure of knowledge base of research underlined the importance of first-year in college, transition to higher education, and student retention. Academic and social integration was the most frequently studied topic. The study broadens our understanding of the structure and processes of the first-year experience.

Keywords: bibliometric analysis, college students, first-year experience, higher education.

The first-year experience in higher education has attracted the attention of institutions, academics, and administrators for over a half-century. It is a unique experience for students since they have to grapple with the challenging consequences of the dramatic changes in their lives (Feldman, 2005 & 2018). A comprehensive glance on the literature puts forward important conclusions about the trends of the studies. Previous research indicates that when students spend the majority of their time on their studies and try to interact with campus groups, they are more likely to persist (Feldman, 2005; Pascarella, 2005).

On the other hand, studies indicate that the topic itself is quite diverse and extensive (Harvey & Drew, 2006; Nagda et al., 2005; Pope et al., 2005). However, some themes such as retention, success, assessment, persistence, institutional and personal factors, adjustment and support, learning and teaching are recurring in many of the studies. Moreover, most of these studies are also carried out in a single institution with relatively small samples (Aypay et al., 2012; Harvey & Drew, 2006).

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The studies on first-year experiences of college students emphasize expectations and feelings of students in addition to their experiences. Students in higher education expect effective teaching including interactive activities (Sander et al., 2000). Crisp and his colleagues (2009) examined first year student expectations and found that students cared about constructive dialogue with staff. Smith and Wertlieb (2005) focused on alignment between first year expectations and experiences. The authors depicted that academic and social expectations of the first-year students did not align with their first year experiences. Gap or mismatch between expectations and experiences put forward different feelings for students. Match between expectations and experiences yields a satisfaction and happiness while mismatch between expectations and experiences cause to frustration and sadness. To illustrate, Krallman and Holcomb (1997) found that unrealistic academic, personal, and social expectations led to disillusionment and failure in university students.

The another significant topic related to first-year experiences of college students is academic and social integration. Tinto (1975) stated that students adapting to academic and social system of university insist on their education. Further, literature indicated that first-year experience has crucial importance for providing academic and social integration of the students (Ishitani, 2016; Kairamo, 2012; Long et al., 2006; Yorke & Thomas, 2003). Sevinç-Tuhanioglu (2017) investigated first-year experiences of students in personal and environmental domains such that academic integration included academic proficiency, faculty support, and faculty empathy while social integration included social acknowledgement, affiliation, peer support, isolation, and class comfort.

Theoretical background of the first-year experience of college students is based mostly on student retention studies. Positiveness of first-year experiences provide student retention whereas negative first-year experiences cause student attrition. Spady (1971) declared that courses and faculty members have an impact on interaction between student and environment in the model of undergraduate dropout. Tinto (1975) explained student retention through academic and social systems and commitments. Bean (1980) linked student retention to life satisfaction of the students. Pascarella (1980) underlined importance of informal interactions in Student-Faculty Informal Contact Model.

Few studies were theoretically grounded and carried out a systematic exploration of first-year student experience (Harvey & Drew, 2006). Comprehensive reviews were not carried out on first-year students since the preparation of a report by Harvey and Drew (2006). Feldman, who published two books on this topic (2005, 2018) did an excellent job analysing particular issues in regard to college students' first year experience. However, in our age of rapid change, factors such as the demographics and generational needs of students or the nature and context of institutions are altered briskly.

Hence, experiences of first-year college students need to be examined with a closer scrutiny at different intervals so as to develop ways to help students to cope with the challenges surrounding them. In this regard, a systematic analysis of the literature on first-year college students' experiences might yield useful findings. To our knowledge, few studies exist in the literature that cover the breadth of previous studies on the first-year college experience. This study attempts to address the gap in the literature and carries out a systematic analysis of existing studies on the first-year college experience.

The study particularly aims to explore published research on the first-year college experience. More specifically, the study seeks answers to the following questions:

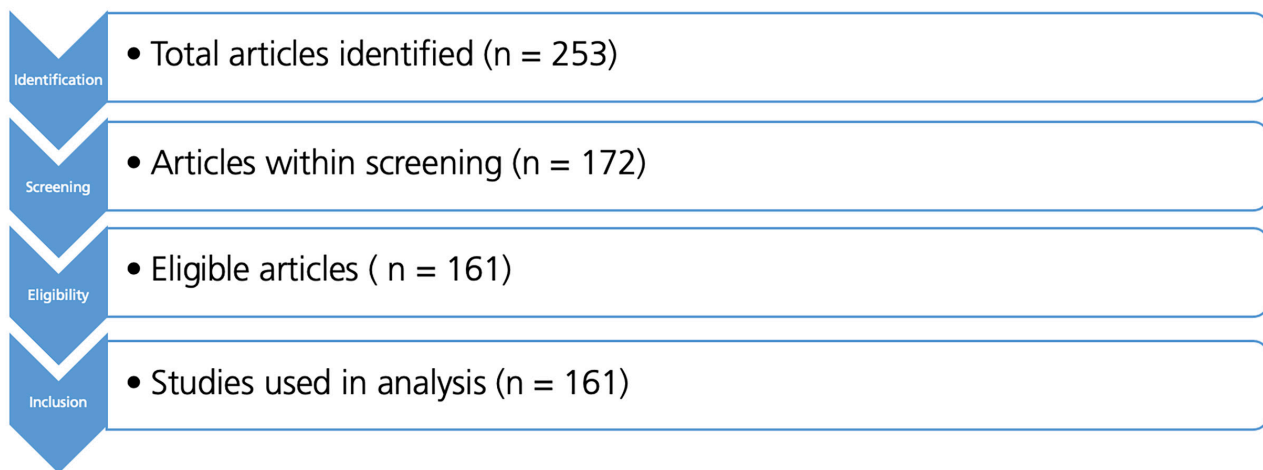
1. What is the methodological distribution of studies regarding the first-year college experience?
2. What is the volume, growth trajectory, and geographic distribution of literature based on first year experiences between 2000 and 2019?
3. What authors and documents on the first-year experience have evidenced the greatest citation impact over the past two decades?
4. What is the intellectual structure of knowledge base of first-year experiences of the college students?
5. What are the topical foci of the studies regarding the first-year college experience?

Method

The current study was designed as a bibliometric analysis based on systematic review. Bibliometric analysis is a technique using descriptive statistics to document research in a typical field. Bibliometric analysis has become so popular that topographical trends were examined within a body of knowledge in the recent years (Hallinger & Kovacevic, 2019). A systematic review aims to analyse emerging concepts or themes in a pile of studies published on a particular topic. To achieve this purpose, the study followed the steps offered by Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) to explore and elaborate the studies under review (Shamseer et al., 2015).

Data Collection

Considering the purpose of the study and particular research questions mentioned earlier, data for the present study was gathered using Scopus-indexed journals since it allows to generate databases for systematic reviews as emphasized by Mongenon and Paul-Hus (2016). Scopus also enables to reach high-quality research, which was a significant concern during the data collection phase. In this review, the keyword combination of "first-year experience and higher education or college" was used by limiting studies to the last two decades (since 2000).



■ **Figure 1** PRISMA flow diagram.

The period between 2000 and 2019 was selected purposefully to be able to investigate the trends in the 21st century higher education context. Furthermore, higher education literature has received a large corpus of studies in recent decades as the study by Aparicio, Iturralde, and Maseda (2021) showed. Scopus search with the keyword combination yielded 253 studies published in the journals between 2000 and 2019. From among these studies, articles were included in the study while commentaries, books, chapters, conference papers, and editorials were excluded since they may be lack of blind peer review. By screening the studies, 172 articles were included. However, nine were excluded as they were not coherent with the purpose of the study. Considering the eligibility of the studies, 161 articles were selected for the systematic review. ■ Figure 1 demonstrates the PRISMA flow diagram.

Data Analysis

A publication classification form was constructed in an Excel form to keep the data in addition to excel CSV file downloaded from Scopus. The publication classification form noted descriptive statistics related to studies, methodological distribution, codes and themes. Data were coded individually by the two researchers and then divergent or convergent codes were discussed together so as to form the final list of codes and categories. These categories were then grouped under relevant themes. Science mapping, a kind of systematic quantitative analysis of the knowledge base (Hallinger & Kovacevic, 2019) was used for citation and co-citation analyses. The CSV file exported from Scopus database was used to perform bibliometric analyses in VoSViewer which is a software creating visual representations of network maps delineating the relationships among variables.

Results

In this section, findings of the analyses were presented by considering research questions. Following sub-sections would make detailed results on methodological distribution, descriptive statistics, impact, intellectual structure, and topical foci of the studies.

Methodological Distribution

The number of empirical studies ($n = 152$) was more than the number of non-empirical studies ($n = 9$). However, we could only reach the abstracts of the 43 empirical so that some methodological issues could not be followed. This creates a serious issue and requires re-considering both the restriction policies of the journals and the re-organization of the abstract structures and contents of the published studies.

Most of the empirical studies were designed using qualitative ($n = 49$), survey ($n = 34$), case study ($n = 20$), correlational ($n = 12$), experimental ($n = 10$), and mixed-method ($n = 10$) design. Additionally, there were three causal-comparative, phenomenological, and action research studies. However, abstract of eight studies could not provide clear information about design of the study. This distribution based on design may be evaluated as a scientific diversity. An effort to get in-depth information about the experiences of students is positive since quantitative studies may not be adequate to explore first-year college experiences thoroughly. An increase in the number of mixed-method studies could contribute significantly to the breadth of knowledge and understanding upon first-year college experiences.

Considering the sample, most of the participants were students ($n = 132$). Further, there were 19 studies including academic staff and five studies including administrative staff.

Even though a huge number of studies on students is expectable, this unbalanced tendency of studying with students may limit the perspectives on first-year college experience. Therefore, inclusion of other stakeholders should be considered in future studies so as to delineate a more comprehensive picture of first-year college experience.

The studies under investigation mostly administered interview forms ($n = 55$), scales ($n = 42$), and questionnaires ($n = 29$) to collect data. Other data collection tools were documents ($n = 10$), observation forms ($n = 5$) and narratives ($n = 3$). The data collection procedure was based mostly on the face to face administration of paper-pencil surveys ($n = 71$) and interviewing ($n = 55$). Furthermore, various data collection methods were used: observation ($n = 9$), archival data ($n = 7$), reflective paper ($n = 3$), focus groups ($n = 3$), and electronic survey ($n = 2$). However, abstract of 12 studies could not provide clear information about both instrument and data collection procedure. A variety of data collection tools and the procedures may be an indication of data triangulation attempts and it may provide an opportunity for studies to compare and contrast their findings. Furthermore, these efforts were valuable in terms of reliability and validity issues.

Most of the qualitative studies did not mention the terminological name of the data analysis technique. Instead, they preferred to explain the procedures of how data is analysed. The researchers of this study used the differentiation style of Yıldırım and Şimşek (2012). If the study moved with initial codes and themes, then the researchers called them a descriptive analysis. On the other hand, if the study moved with emerging or evolving codes and themes, then the researcher named them as content analysis. Data were analysed respectively within content analysis ($n = 64$), descriptive statistics ($n = 42$), regression family ($n = 20$), descriptive analysis ($n = 20$), Analysis of Variance-ANOVA family ($n = 9$), t-test ($n = 7$), thematic analysis ($n = 6$), multi-level analysis ($n = 3$), and non-parametric test ($n = 3$). However, abstract of five studies could not provide clear information about data analysis technique. The density of content analysis based on emerging codes and themes in addition to the body of inferential statistics may allow reaching valid conclusions.

■ Table 1 demonstrated the methodological distribution of the studies.

Volume, Growth Trajectory, and Geographical Distribution of Research

To begin with, most of the studies ($n = 82$) were conducted in the last five years (2015-2019) while only some were ($n = 7$) conducted in the first five-year period (2000-2004). There were 46 studies conducted between 2010-2014 while 26 studies were conducted between 2005 and 2009.

■ Table 1 Methodological Distribution

Type	Themes	Codes	Frequency	
Empirical	Design	Qualitative	49	
		Survey	34	
		Case study	20	
		Correlational	12	
		Experimental	10	
		Mixed-method	10	
		Causal-comparative	3	
		Phenomenology	3	
		Action	3	
		Non-definable*	8	
		Sample	Students	132
			Academic staff	19
	Administrative staff		5	
	Instrument	Interview form	55	
		Scale	42	
		Questionnaire	29	
		Documents	10	
		Observation form	5	
		Narratives	3	
Non-definable*		12		
Data collection		Face-to-face administration	71	
	Interviewing	55		
	Observation	9		
	Archival data	7		
	Reflective paper	3		
	Focus group	3		
	Electronic survey	2		
	Non-definable*	12		
	Data analysis	Content analysis	64	
		Descriptive statistics	42	
Regression family		20		
Descriptive analysis		20		
ANOVA family		9		
T test		7		
Thematic analysis		6		
Multi-level analysis		3		
Non-parametric test		3		
Non-definable*		5		
Non-empirical	Review or discussion paper	9		



*Paper had restriction and required information cannot be followed from abstract.

Thus, there has been an upward trend from 2000-2004 to 2015-2019 in the first-year college experience research. ■ Table 2 depicts those results.

■ **Table 2** Volume and Growth Trajectory of the Studies

Period	Frequency (f)
2000-2004	7
2005-2009	26
2010-2014	46
2015-2019	82

Finally, the US (n = 63), Australia (n = 45), and UK (n = 20) were countries in which most of the first-year college experience studies were performed respectively. Denmark (n = 6), Netherlands (n = 5), Canada (n = 4), Germany (n = 4), Hong Kong (n = 4), South Africa (n = 3), and Spain (n = 3) were the contexts where the studies were frequently conducted. Some countries from Middle East and Africa published no studies.

The Greatest Citation Impact

In order to investigate the greatest citation impact of the studies, citation and co-citation analysis were performed via VOSviewer. First of all, author citation analysis was conducted by setting a threshold of at least 100 citations.

■ **Table 4** Highly Cited Documents

Rank	Author	Article	Journal	Scopus Citations
1	Wilcox, P., Winn, S., & Fyvie-Gauld, M. (2005)	It was nothing to do with the university, it was just the people': the role of social support in the first-year experience of higher education	Studies in Higher Education	312
2	McCarthy, J. (2010)	Blended learning environments: Using social networking sites to enhance the first year experience	Australian Journal of Educational Technology	154
3	Nicol, D. (2009)	Assessment for learner self-regulation: enhancing achievement in the first year using learning technologies	Assessment and Evaluation in Higher Education	134
4	Pitkethly, A., & Prosser, M. (2001)	The first year experience project: A model for university-wide change	Higher Education Research & Development	110
5	Evans, S., & Morrison, B. (2011)	Meeting the challenges of English-medium higher education: The first-year experience in Hong Kong.	English for Specific Purposes,	97
6	Willcoxson, L., Cotter, J., & Joy, S. (2011)	Beyond the first-year experience: the impact on attrition of student experiences throughout undergraduate degree studies in six diverse universities	Studies in Higher Education	79
7	Matthews, K. E., Andrews, V., & Adams, P. (2011)	Social learning spaces and student engagement	Higher Education Research & Development	78
8	Holmegaard, H. T., Madsen, L. M., & Ulriksen, L. (2014)	To choose or not to choose science: Constructions of desirable identities among young people considering a STEM higher education programme	International Journal of Science Education	63
9	Jamelske, E. (2009)	Measuring the impact of a university first-year experience program on student GPA and retention	Higher Education	57
10	Brownlee, J., Walker, S., Lennox, S., Exley, B., & Pearce, S. (2009)	The first year university experience: using personal epistemology to understand effective learning and teaching in higher education	Higher Education	52

As ■ Table 3 demonstrated, 10 authors were revealed out. Fyvie-Gauld, M., Wilcox, P., and Winn, S. had the highest citation which came one document together. Similarly, McCarthy, J. and Nicol, D. received many citations from only one document separately. Holmegaard, H. T., Madsen, L. M., and Ulriksen, L. had also greatest citations coming from documents more than five. These names indicate that Nordic scholars are productive in the field of the first-year experience in higher education.

■ **Table 3** The Most Productive Scholars in terms of Citation Analysis

Rank	Authors	Citation	Documents
1	Fyvie-Gauld, M.	312	1
2	Wilcox, P.	312	1
3	Winn, S.	312	1
4	McCarthy, J.	154	1
5	Nicol, D.	134	1
6	Holmegaard, H. T.	120	6
7	Madsen, L. M.	116	5
8	Ulriksen, L.	116	5
9	Pitkethly, A.	110	1
10	Prosser, M.	110	1

Secondly, document citation analysis was conducted by setting a threshold of at least 50 citations. As demonstrated in ■ Table 4, 10 documents emerged. The results underlined the fact that journals publishing highly cited documents were those well-acknowledged in higher education field. These highly-cited studies covered topics of teaching and learning, social support, assessment, and higher education policies.

Co-citation analyses for authors and articles were performed via VOSviewer by setting a threshold of at least 50 co-citations. An “author co-citation network” represents the frequency with which two authors are cited together. Respectively, Vincent Tinto, Richard James, George D. Kuh, Craig McInnis, and Mantz Yorke were most influential scholars with the co-citation value of over 50 in the first-year college experience studies. On the other hand, a “document co-citation network” was performed to get the frequency of two documents being cited together. Network was conducted by setting a threshold of at least five co-citations, which revealed two studies. “Student retention in higher education: the role of institutional habitus” and “Dropout from higher education: A theoretical synthesis of recent research” were the studies mostly co-cited. Vincent Tinto, a pioneer scholar in higher education field, was at the juxtaposition of the co-citation analysis. ■ Table 5 depicted co-citation analysis results.

■ Table 5 Co-citation analysis.

Rank	Author	Co-citation	Link Strength
1	Tinto, V.	110	287
2	James, R.	55	225
3	Kuh, G.D.	66	196
4	McInnis, C.	50	188
5	Yorke, M.	55	172

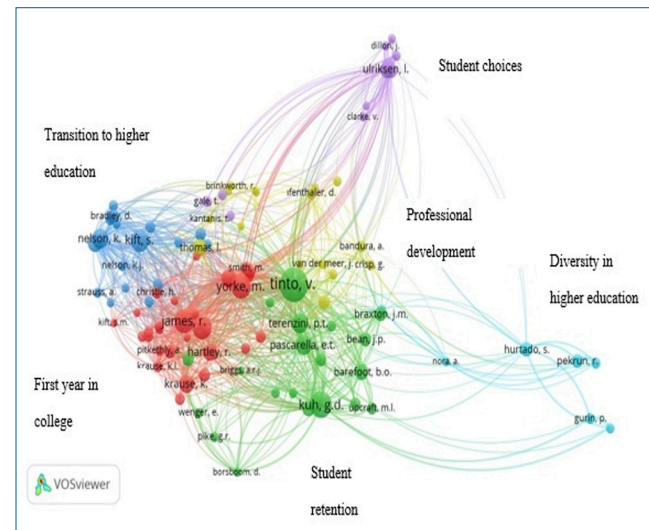
Rank	Document	Author	Co-citation
1	Student retention in higher education: the role of institutional habitus.	Thomas, L. (2002)	5
2	Dropout from higher education: A theoretical synthesis of recent research	Tinto, V. (1975)	5

Intellectual Structure of Knowledge Base

An author co-citation network was performed to reveal intellectual structure of the first year experience research. VOSviewer was performed to generate co-citation map which visualized similarities of research by scholars in higher education field. Threshold including minimum number of citations of an author showed 100 top authors in terms of co-citations. Density of links connecting scholars were proportional to both the number of times a scholar was co-cited with another scholar and interconnectedness of knowledge base. Tinto, V., Kuh G. D., Yorke, M., and James, R. showed largest nodes such that this appearance was consistent with results presented in Table 4. Moreover, Nelson, K., Ulriksen, L., Thomas, L., and Hurtado, S. had a boundary spanning role integrating concepts of each clusters.

As ■ Figure 2 depicted, the maps classified authors into six clusters. In order to name clusters, “Schools of Thought” approach was followed and common theoretical perspectives derived from intellectual structure were comprised by this approach (Börner et al., 2001; Hallinger & Kovacevic, 2019; Van Eck & Waltman 2017). The cluster located in upper-left side (blue colour) had a school of thought consisting of scholars investigating transition to higher education (e.g. Kift, S., Nelson, K., and Nelson K.J.). The cluster in the upper region (purple colour) included studies related to student choices (e.g. Ulriksen, L., Holmegaard, H. T., and Madsen, L. M.). The cluster from centre to bottom (green colour) included scholars studying student retention (e.g. Tinto, V., Kuh, G. D., and Pascarella, E. T.). The cluster in the right side (turquoise colour) had scholars focusing on diversity in higher education (e.g. Hurtado, S., Pekrun, R., and Gurin, P.). The region from the centre to the upper and dispersed around centre (yellow colour) included scholars concentrating on professional development (e.g. Thomas, L. Jansen, E. P. W. A., and Keup, J. R.). Finally, the cluster from the centre to the left side (red) included scholars studying topics related to first year in college (e.g. Yorke, M. James, R., and McInnis, C.). Overall, first-year in college, transition to higher education, student retention, and professional development differentiated from diversity in higher education and student choices as it is seen in the network map.

■ Figure 2 Author co-citation network.



Topical Foci of the Research

The researchers of the current study followed content analysis to determine topical foci of the studies. Purposes of the selected studies were reviewed and coded and conceptualized under some themes. Themes of the current study emerged from reviewing studies in the literature systematically and synthesizing data. Themes are named as the transition to higher education, student retention, academic development, economics, psychological, social, and cultural development, global perspectives, and student support services.

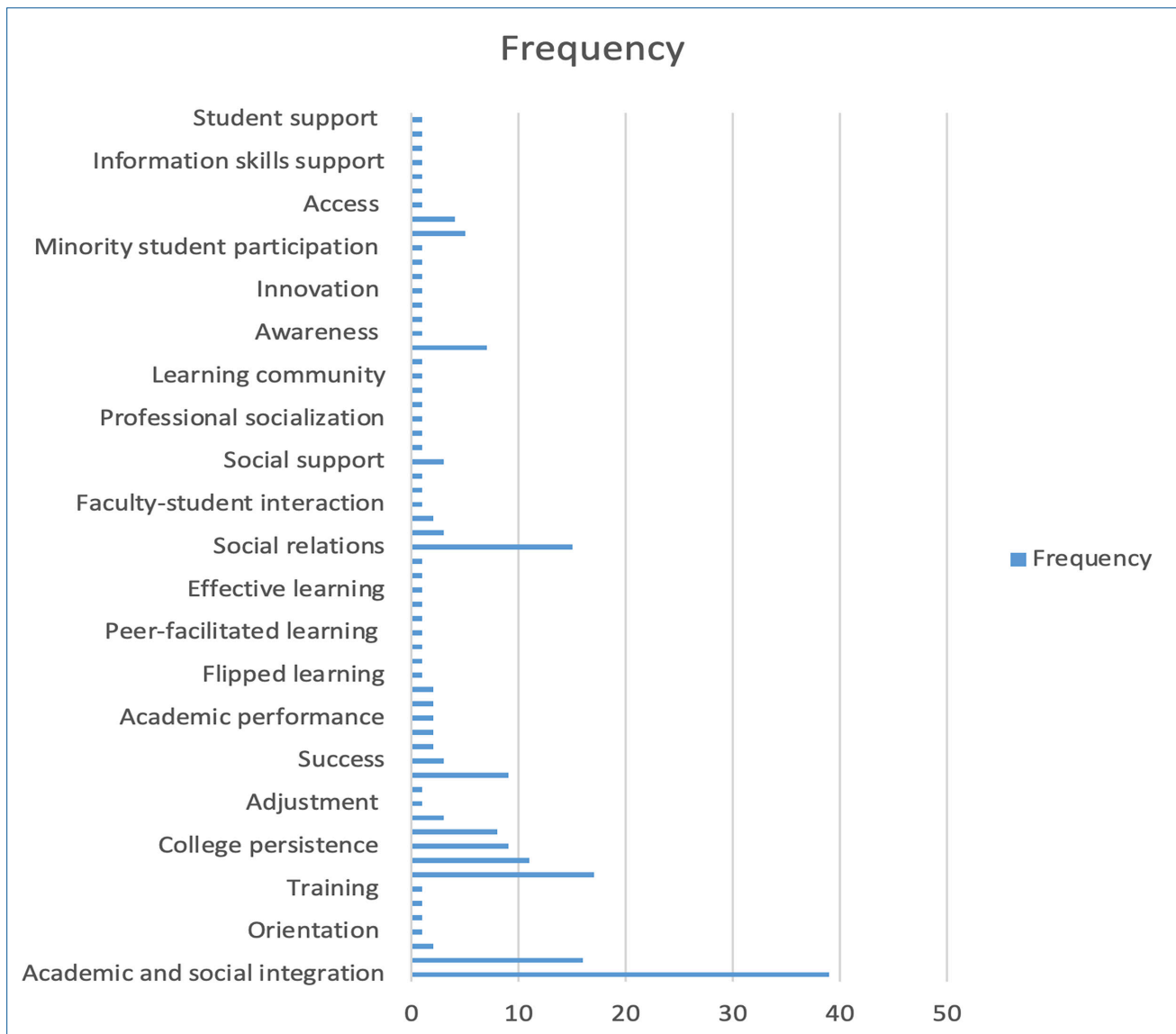


Under the theme of transition to higher education, academic and social integration (n = 39) were the most frequently studied topics related to first-year experience. Transition (n = 16) and transfer (n = 2) to higher education were other two important concepts. In terms of student retention theme, student retention (n = 17), student engagement (n = 11), college persistence (n = 9), student enrolment (n = 8), and student attrition (n = 3) were from the most frequently to the least frequently studied concepts of first-year experience, respectively. Academic development theme included academic achievement (n = 9), which was at the top of the concept list. Success (n = 3), problem-based learning (n = 2), academic competency (n = 2), academic performance (n = 2), student learning (n = 2), and assessment (n = 2) followed respectively as concepts studied under academic development. Economics, psychological, social, and cultural development included mostly social relations (n = 15), peer mentoring (n = 3), social support (n = 3), and diversity (n = 2).

Further, this theme had a variety of topics from student wellbeing to personal epistemology. In terms of global perspectives, internationalization (n = 7) drew attention as mostly studied concept. Lastly, information literacy (n = 5) and librarian support (n = 4) were mostly studied with first-year experience for student support services. ■ Figure 3 represented these topics.

In conclusion, it was possible to categorize concepts related to first-year experiences. Among these categories or themes, the transition to higher education and student retention were more prominent topics than others. Further, the conceptual trend on the first-year experience was based on academic and social integration, student retention, academic achievement, and social relations. Therefore, it can be stated that academic and social issues have crucial significance for the first-year experience of students in higher education.

■ Figure 3 Topical distribution.



Discussion and Conclusion

The current study examined the literature based on first-year experiences of higher education students through comprehensive science mapping analysis. 161 articles published in Scopus-indexed journals between 2000 and 2019 were analysed. Findings would be elaborated and discussed, and implications would be made for the future studies based on the findings.

Discussion

The corpus of the first-year experience studies published between 2000 and 2019 indicated an upward trend in this regard. This may be an indication of the growth and volume of the literature. The reason for this unprecedented recent increase in the trend may point out to a greater emphasis on academic and social integration of first-year students in higher education (Ertem, 2020; Flores & Estudillo, 2018; Ishitani, 2006). On the other side, this upward trend may be related to an increase in the number of higher education studies in recent years. There is an effort to synthesize a huge body of higher education studies in the literature (Budd, 1988; Daenekindt & Huisman, 2020; Kwiek, 2021). These studies showed that higher education is a popular field that researchers focused on intensively from the past to the present.

Further, diversification was found in terms of geographical regions including countries from all continents around the world. However, some of these countries had dramatically more intense literature on the first-year college experience than other countries. The literature offers evidence of the dominance of some countries in different fields of science. To illustrate, in the educational administration field, Hallinger and Kovacevic (2019) reviewed the literature through science mapping and concluded dominance of the US, UK, Canada, and Australia on the studies related to first-year experiences. A similar finding was pointed out by the study of Kwiek (2021) which showed that the three countries publishing the majority of articles in six elite journals were the US, Australia, and the UK. Further, the study by Sönmez (2020) depicted that educational research articles in the field of social study were mostly published in the societies of the US, Türkiye, Canada, New Zealand, Singapore, and the UK. Moreover, Dehdarirad et al. (2014) examined women's issues in science and higher education and found that most of the studies were conducted respectively in the US, UK, Canada, and Australia. Distribution of these studies on behalf on some communities may be related to countries' development level. Nielsen (2011) classified countries in terms of level of development by considering taxonomies and indicators of different international organizations. According to study, countries including Anglo American communities were in developed countries list. The distribution of studies in terms of territory underpinned that those issues are considered more significantly in developed countries as the number of studies concentrating on the first-year college experience seems to

increase in developed countries.

Citation and co-citation analysis of the current study brought some important opportunities. Prominent role of research in evolution of "first-year college experience" knowledge base was highlighted. According to Hallinger and Kovacevic (2019), readers or other scholars may synthesize current and future ideas so that knowledge accumulation and fresh insights may resolve challenges in studying practice of first-year experiences. On the other hand, the current review identified "canonical texts" (White and McCain, 1998) which contributed to the interdisciplinary approaches by documenting studies related to both the first-year college experiences and other related fields or topics. In conclusion, it may be asserted that identification of mostly cited and co-cited documents serves to the evolution of fields including the first-year college experience.

Different from the trend in the literature, the current study showed the dominance of qualitative-method studies. Systematic review studies in the literature generally indicated the dominance of quantitative studies. Selçuk et al. (2014) found that about 70% of the articles published in the Education and Science Journal were conducted with quantitative methods. Similarly, Göktaş et al. (2012) investigated educational technologies within the content analysis. Their study revealed out of 60% of the studies used quantitative methods. The reason why the number of qualitative studies was more than expected in the current study may be related to the nature of the topic. The first-year experience is an elusive phenomenon so in-depth research is required.

The intellectual structure of the knowledge base of research on first-year college experience was examined with author co-citation analysis. Tinto, V., Kuh, G. D., Yorke, M., James, R., Pascarella, E. T., and Hurtado, S. drew attention as the most frequently co-cited authors. These authors were also emphasized by many scholars in higher education. Intellectual structure of knowledge base emerged from the studies of these scholars stressed the importance of first-year in college, transition to higher education, and student retention. Therefore, it can be stated that these clusters represented constructs in cognitive structure of first-year experiences. These clusters or constructs are similar in the other studies in the literature. Student retention (Bowles & Brindle, 2017), diversity (Bosse, 2015), and transition to college (Dvoráková et al., 2017) are constructs studied together with first-year issue, to name a few.

The topical foci of the studies were commonly based on the transition to higher education and student retention. Further, issues related to academic development, student support, and socio-cultural dynamics were remarkable. In this regard, the current study is coherent with the other studies in the literature. Carragher and McGaughey (2016) emphasized the importance of academic development and transition to higher education for first-year undergraduate students. Further, the study by Zanden et al. (2018) showed the major domains of first-year student success like motivation, social relations, and critical thinking.



Implications of the Study

The current study has some significant implications. First of all, the dominance of some countries in terms of publication of articles may be related to the research and development capacity of the countries in line with the number of students enrolled in higher education. In other words, developed countries may have invested in research and development opportunities in higher education institutions. In conclusion, higher education could be perceived as an instrument of economic development by policy-makers so that this vision reflects on the number of studies published in developed countries. One more implication is present for novice scholars. Because some documents and their authors have received the highest levels of citation, scholars may consider them by synthesizing these documents through integrative review of literature. Novice scholars may match their manuscript with the aim and scope of the different journals. Further, they may follow authors who are more experienced in order to comprehend the idea in the literature.

Further, implications can be made in terms of the nature of research. Samples, instruments, data collection procedures, and data analysis techniques of these studies were compatible with both topic's nature and requirements of their designs. As a prerequisite of the nature of the topic, participants were mostly students as compared to other stakeholders. Interviews and mostly face-to-face administrated instruments were used as data collection strategies while content analysis was most frequently used as data analysis method, which is already the key feature of a typical qualitative study.

There are also implications for non-empirical and non-accessible studies. With the fact that only a few review or discussion papers existing makes two important implications related to research. The first one is the fact that research synthesis studies are valuable and positive for literature regarding the first-year college experience, but not sufficient to draw a whole and accurate picture of first-year college experience. Secondly, the current bibliometric content analysis study contributed to the literature by offsetting disadvantaged aspects of the basic review studies. While traditional literature reviews lack holistic approaches and the generation of new knowledge, this bibliometric content analysis provide diversity in producing conceptualizations and models to explore foundations, intellectual core, and directions for future research of a typical research field. Apart from these accessible studies, there was a serious amount of non-accessible studies. This situation caused an important limitation in that the current study might have not captured a common trend in the literature more accurately. Nonetheless, it may help in discovering the gaps in the literature. Therefore, it may be implied that open-access journals will contribute to both the quality and quantity of literature in many fields.

The intellectual structure of the knowledge base of studies on first-year college experience yielded broader information on transition to higher education and student retention. In other words, some constructs like student preferences and diversity in higher education differentiated from more visible constructs. This situation may prove the concerns or the priorities of higher education policy-makers such that keeping students in the college may be more important rather than other necessities like preferences or diversity. As a result, the link between research and policy or practice may have been reflected in the knowledge base of the first year experiences in higher education.

Limitations and Recommendations

The current study has some recommendations which are commonly based on limitations. First of all, inclusion and exclusion criteria determined publications. Thus, this review did not include the entire literature. However, an extension of the database served out this limitation such that the Scopus database was the largest platform compiling a review of research in many fields. Researchers in the future could examine this kind of bibliometric analysis by including different documents. Nonetheless, questions whether the findings of the study were generalizable to the whole knowledge base have not been eliminated yet. Therefore, researchers from different countries or communities could focus on first-year college experience by performing empirical studies. This would offer a chance both to make cross-cultural comparisons and to indicate a more global picture of first-year experiences. Further, researchers may conduct review studies by focusing more on one side of first-year experience or its relation to a specific variable. To illustrate, academic and social integration may be examined within the first-year experience. The last limitation was related to the context of the study. The analysis was limited to bibliometric, methodological, intellectual, and topical issues and thus the current study did not provide information about the demographics of the authors like gender, ethnicity, or age and neither did it dwell on changes over time. Therefore, it is recommended that researchers in the future could conduct studies examining the demographics of authors and catching patterns changed in time.

On the other hand, recommendations could be made for the practitioners and policy-makers. Other academic and social institutional components of higher education institutions such as faculty members, chairs, and support services could consider to design activities to improve experiences of their first-year students. Not only academic activities but also social and cultural activities may serve this purpose. To make an easy transition to higher education and to make student retention sustainable, a holistic perspective could be developed. Policy-makers should take precautions by making effective policies. They could pay more attention to recommendations of research and may make policies based on those conclusions. Further, they could encourage publishers to provide open-access journal articles.

Conclusion

Corpus of the first-year college experience studies published between 2000 and 2019 would be shown evidence to volume and growth trajectory of the research. This conclusion indicates that first year in college is a topic drawing the attention of all higher education stakeholders. This attention brings together interdisciplinary approaches on first-year experiences of students since a variety of disciplines from social sciences to the health sciences focus on the first-year phenomenon in higher education. Scholars from Nordic countries and a huge number of publications from countries like the US, Australia, and the UK offer both diversity in the geographical distribution and economic investments in higher education. Investigation of greatest citation impact of authors and documents showed that studies on the first-year college experience mostly focused on issues of learning and teaching, social support, assessment, and higher education policies. Further, higher education scholars like Vincent Tinto, George D. Kuh, and Liz Thomas drew attention in first-year experience studies. From the lenses of methodological paradigms, the dominance of qualitative methods over quantitative methods may be revealed out as a shred of evidence on the importance of multiple realities and social constructions on knowledge and truth. Intellectual structure of research revealed out knowledge base of first year experiences consisted mostly of first-year phenomenon in college, transition to college, and student retention. Topical foci of the literature were commonly based on the transition to college, student retention, and academic and social integration. Thus, research field of first-year experience may need novel trends by integrating institutional, sociological, and cultural perspectives. In conclusion, the reason for the emphasis on first-year experiences is derived from meaning attributed to higher education by not only students but also institutions and communities.

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