

ACTION RESEARCH IN EDUCATIONAL ADMINISTRATION AND MANAGEMENT JOURNALS INDEXED BY SCOPUS

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Abstract

This research aims to make a bibliometric analysis of action research in the field of educational administration published in scientific journals in the Scopus database. The data in the study were obtained by scanning the Scopus database. The information including the number of authors, year of publication, number of citations, the source from which the article was published was analyzed and interpreted. In the research, 98 publications and 15 sources published between 1968 and 2020 were examined. The most frequently cited names in the articles and the sources that published the most were determined. The majority of the articles are single-authored, and it has been found that the number of citations has increased with the number of articles recently. It has been determined that there are very few action researches in educational administration and they are mostly published in western countries. Activism, professional development, school improvement, and student engagement are motor themes.

Keywords: *Bibliometrics, scopus, educational administration, action research*

INTRODUCTION

Educational administration is an interdisciplinary and applied field of study. The main areas of educational administration are school as a social system, learning and teaching process at school, structure, and functioning of the school, individuals in schools, school culture, school climate, politics and power in schools, motivation in schools, conflict in schools, external environments of schools, accountability at school, school development, school improvement, school evaluation, decision making in schools, communication in schools, leadership in schools, application-centered scientific analysis and interpretation of the daily and routine functioning of the school. The ultimate purpose of science and research in educational administration is to develop theories. These developed theories try to reach a generalization by explaining the laws in education and school life with some terms and definitions. Therefore, these theories are expected to guide practitioners, produce new information, and guide researchers.

The development of educational administration as a separate field has a history of nearly one hundred years. A movement that has deeply affected the field of educational administration since the 1950s in developed countries is called the 'Theory Movement'. The effects of this current continue. The theory movement aims to provide a theoretical basis for educational administration and to guide practitioners in matters related to educational administration. The 'Theory Movement' is based on some assumptions (Culbertson, 1983): 1) Assumptions in educational administration should be based on a certain theory and this theory should guide research. 2) Concepts, models, and methods developed in the field of social sciences can be used to develop an effective theory in educational administration. 3) Theory and research should focus on describing, explaining, and predicting human behavior. 4) Generalizations based on research findings should guide human behavior and actions. 5) Ideal theory should be generalizable and verifiable, based on research and observation.

There are publications in this field in various scientific journals and innovations and studies in the field of action research in educational administration are conveyed to people. Detailed examination and analysis of the articles are included in the field of bibliometrics features. Bibliometrics is a method in which mathematical and statistical methods are used to measure and analyze scientific publications. Especially in recent years, bibliometrics has started to play an important role in shaping science and technology policies. Bibliometric analyzes are used to solve questions that seek answers in science and technology policy. For example, bibliometric methods are used to measure the volume of scientific productivity of a particular institution, to measure the institution's impact on world literature using citations, or to draw collaborative models. In recent years, research collaborations have become central to bibliometrics. In modern research systems that are increasingly complex and encompassing many areas of expertise, it seems impossible for an individual researcher to have all the necessary technical knowledge and skills. For this reason, different institutions and researchers from different branches of science are encouraged to complement each other, share information, and produce new ideas in this way (Mattsson, 2008).

The most concrete and best-documented form of collaborative work in bibliometrics is co-authored work (Glanzel & Schubert, 2004). In the last two decades, there has been a significant increase in the number of co-authored publications, which are accepted as indicators of international cooperation in all countries (Karasözen, Bayram, & Burcu, 2009).

Scientific communication emerges as a framework that enables the study of the subject or subjects to be transformed into different ways (such as letters, conferences, articles) in the scientific community. In recent years, there has been a trend towards scientific communication for many authors. In some studies that determine the distribution rates of multi-authorship according to departments, medicine and health sciences come first, followed by basic sciences, engineering, and social sciences. In arts and humanities, the percentage of single-author publications is higher (Al, 2005).

With its ups and downs in the past, action research has become an accepted research method in many fields today. In addition to its prevalence in education, action research is a recognized and approved research method in fields such as industry, medicine, local government, agricultural development, technology use, community development, organizational change and development, public health, and urban planning (Dash, 1999; McNiff, 2001).

Although action research is used in many disciplines, it has made important contributions in the field of education. Action research has an important role in the development of teachers and therefore in improving student learning. According to Elliot (1991), it has made significant contributions to the development of practice in education through research by combining action research, professional development, curriculum development, and teacher evaluation. By using action research, it creates opportunities for self-knowledge and development, especially for teachers (Beyhan, 2013).

It is clear that scientific studies and information spread faster through publication, and there is a great need for this, especially in today's technology. People need to know about new studies and researches on action research in educational administration, and to follow them through publications in terms of further development of publications and research.

This research aims to examine the bibliometric profile of the articles on educational administration published in scientific journals. This study aims to determine the authors who publish the most in the field of educational administration with the action research method and to determine the journals that publish the most articles. In addition, it is aimed to determine the distribution and density of these articles by the year and to determine the most frequently cited authors, sources, and journals in these published articles. For this reason, it is aimed to create a foresight about the journals that can send their studies to researchers doing scientific studies in the field of educational administration, to determine the numerical distribution of publications in the field of educational administration, and to determine which institutions contribute to the publication of these publications. In addition, this research tried to identify the most cited authors of the journal that produced the most studies.

It is important to make a bibliometric profile of the articles published in the field of educational administration, to get an idea about the journals published in the field. In addition, it is important to determine the authors that contribute the most by publishing to the field of educational administration. The absence of a similar study in the field of educational administration makes this study important in terms of shedding light on future studies.

Action Research

Psychologist Kurt Lewin (1944), a leading researcher in action research for social scientists in America and Europe, focused on the participant group for conflict, crisis, and change in organizations in his work "Social Researchers" (Elliot, 1991). The word "Action Research" was first used by Lewin in 1946 in his article "Action Research and Minority Issues" (Adelman, 1993). In the mentioned article, action research is defined as a type of research that directs experts to what can be done in complex situations (Baumfield et al. 2013).

Yıldırım and Şimşek (2008) define action research as a systematic data collection and analysis conducted by an expert involved in problem-solving or understanding and solving existing problems. The purpose of understanding and solving the problem is to increase the quality of action in the social context (Elliot, 1991). These social contexts include the environments, people, and practices in which one or more studies take places, such as education, research, development, and practice. Therefore, the nature of social conditions changes and develops according to the nature of actions (Dick et al. 2009).

Although not mentioned as action research, Dewey conducted research by practitioners in the early 1900s (Burns, 1999: cited in Morton, 2005). The eponym of the term action research, Kurt Lewin is a social psychologist and educator. It is reported that his work on the context in which the problem arose was common in the USA in the 1940s (Ferrance, 2000). The first to use action research in education is Stephen Corey. He believes that the scientific method in education will create change and that educators should participate in both the research and application of this knowledge. According to Corey, the purpose of action research is not to generalize, but to accommodate the changes that occur in our daily lives (Ekiz, 2003; Ferrance, 2000).

In the mid-1950s, action research was seen as a fledgling endeavor and was argued to be unscientific. For the next few years, experimental research and quantitative data collection techniques dominated. Action research started to come to the fore again in the 1970s. Educational practitioners have questioned the applicability of scientific research design and methods as a way of solving educational problems. From this point of view, action research comes to the fore again and gains more and more value (Ferrance, 2000).

Bogdan and Biklen, 1998, have variously defined their research adapted to the field of education: 1) It is the process of conducting research in real schools and classrooms to improve and understand the quality of actions and teaching (Schumuck, 1997). 2) Teachers observe their teaching by systematically and sequentially examining a problem or action (Dinkelman, 1997). 3) Participants systematically carefully examine their educational practices using research techniques (Ferrance, 2000). 4) It is a systematic review of actions taken as a team, with the direct involvement and cooperation of teachers, school principals, and other stakeholders, on issues such as teaching, learning, and functioning of a particular school (Mills, 2003).

Ferrance (2000) identified four common themes from the definitions of action research. These; empowering participants, cooperation through participation, knowledge acquisition, and social change. Systematic, regular, and critical testing can also be added to common features. The assumptions on which action research is based highlight these themes once again. Accordingly, teachers and administrators work best on the problems they have identified for themselves. It is more effective for them to gain encouragement when they are encouraged to examine and measure their work and then consider different working methods. When they work together, they help each other. They develop professionally (Watts, 1985).

What are the factors that distinguish action from action research? We make many decisions in our daily life. In some of these decisions, we will be right, and in others, we will see that we made the wrong decision. As a result of our wrong decisions, the problem still exists and sometimes gets worse. When we carefully review our operating decisions, we realize that we are trying to solve problems in an orderly, systematic way. Defining action research as the actual process of examining a situation in the classroom or school to understand and improve the quality of action and teaching, Johnson (2015) states that action research is a planned, organized type of research.

John Dewey laid the foundations for action research in education in his book "The Sources of a Science Education" in 1929. The first researcher to apply action research to solve educational problems was Stephen Corey, a professor at Columbia University in 1949 (Kemmis & McTaggart, 2000). Corey argued that there would be no radical change in education without the direct participation of teachers and administrators, and emphasized that action research should be used in education.

Action research not only creates a vision based on communication, research, and testing among teachers, increases cooperation and sharing, but also affects the teaching culture in the school (Küçük, 2002). Teachers who also participate in action research have the opportunity to monitor and improve their teaching experiences (Sagor, 2000).

Teachers who conduct action research focus directly on classroom practices and the problems they encounter and are also affected by any changes and improvements they make. According to the studies on the subject, teacher or pre-service teachers stated that they became more professional after doing action research, they defined themselves as problem solvers and effective teachers, and their attitudes towards the teaching profession improved positively (Atay, 2003).

General characteristics of action research are (Johnson, 2015): Action research is systemic, research does not start with an answer, action research does not need to be complex or descriptive, research should be adequately planned before data collection begins, action research projects can be of varying lengths, observations should not take long, but should be systematic, action research ranges from simple and informal to detailed and formal, action research can be embedded in a particular theory, action research is not a type of numerical research, the findings of the study with mathematical consequences are limited.

Bibliometric Research

Bibliometric research examines authorship, publication, citation, and content by applying quantitative measurements to literature. The most important feature of bibliometric research is the measurement of patterns and trends in a scientific field. It is this feature that distinguishes bibliometric research from other forms of analysis applied to literature, such as text analysis and historical research (Haddow, 2013). Common word analysis, which is one of the bibliometric methods, serves as an important tool to discover the information in databases. It is used to determine the themes in a particular research area, the relationship between these themes, the extent to which these themes are central to the whole field, and the degree to which these themes are internally constructed (He, 1999). Social network analysis conceptualizes the relationships between actors in social life in terms of their structures (Carrington & Scott, 2011). Social network analysis reveals a way of approaching a problem and answers the question of where to find answers (Marin & Wellman, 2011).

Bibliometrics first appeared in the west in the 1890s. If a general definition is made based on the previous definitions; Bibliometrics is a quantitative analysis in terms of authors, publications, topics, number of citations, cited sources from a specific field, at specific time intervals.

As a quantitative science, bibliometrics is divided into two areas: descriptive and evaluative. descriptive field; It is an examination of the efficiency of publications in a particular field to compare the amount of research produced in different countries, in different periods, or different sub-branches of a field. The evaluative area is; It covers the examination of the literature used by researchers in a particular field (Yılmaz, 1999).

Bibliometrics has a variety of applications. These; application to research efficiency and effectiveness, application to researcher productivity, application to institutional efficiency and impact, application to the national analysis, application to journal evaluation.

METHOD

This is a descriptive study. Descriptive studies aim to explain the interaction between situations by considering the relationship of current events with previous events and conditions. In this study, the bibliometric profile of action research in educational administration published in scientific journals is explained with various aspects and dimensions. In line with the purpose of the research, the bibliometric method was used to analyze the current situation. The data were evaluated with descriptive analysis. Bibliometrics is defined as an approach to evaluate and monitor the progress of a particular discipline by ranking citations, author relationships, keywords, topics, and methods used in studies published in the disciplines, using basic and advanced statistical techniques. Document analysis is a data collection process used in the collection, systematic review, and evaluation of official or private records.

The bibliometrix package developed for the R statistics program was used. With this package, the output files obtained from the Scopus database can be analyzed. To find publications on action research in educational administration in the database, a list of academic journals that frequently publish in the field of educational administration was made (Table 1). Then, the publications with the phrase "action research" in the title, abstract, and keywords of the relevant journals are listed in the database. Publications from 2021 are excluded. The output file of this list is read into the bibliometrix package.

Table 1. Sources selected for bibliometric analysis

NASSP Bulletin
Educational Leadership
Economics of Education Review
Education & Urban Society
Journal of Educational Administration
International Journal of Educational Management
Educational Administration Quarterly
Urban Education
Educational Management Administration & Leadership
School Leadership & Management
Management in Education
School Effectiveness and School Improvement
Journal of Educational Administration and History
Improving Schools
International Journal of Leadership in Education
Journal of Personnel Evaluation in Education
Journal of Educational Change
Advances in Educational Administration
International Journal of Management in Education
Education as Change
Leadership and Policy in Schools

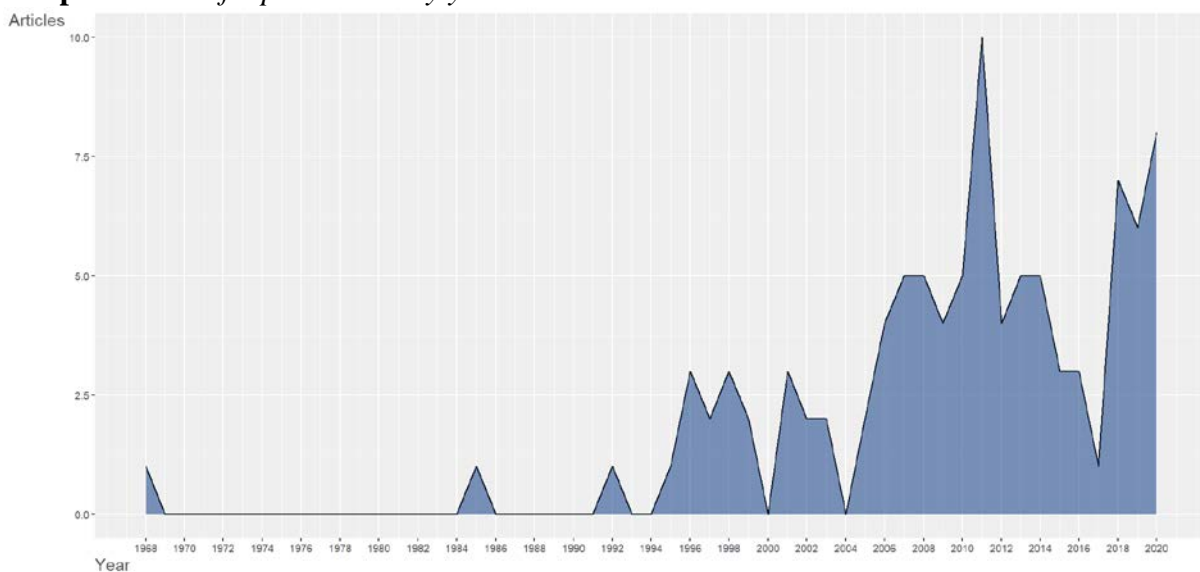
RESULTS

In the data, it was determined that the terms were used for the first time in 1968, and they were used in a total of 15 sources and 98 publications belonging to the 1968-2020 period. All publications are of article type. Other statistical information is given in Table 2. A total of 205 authors wrote the published articles. The average number of citations per article is 7.92. The number of articles per author is 0.47 and the number of co-authors per article is 2.95.

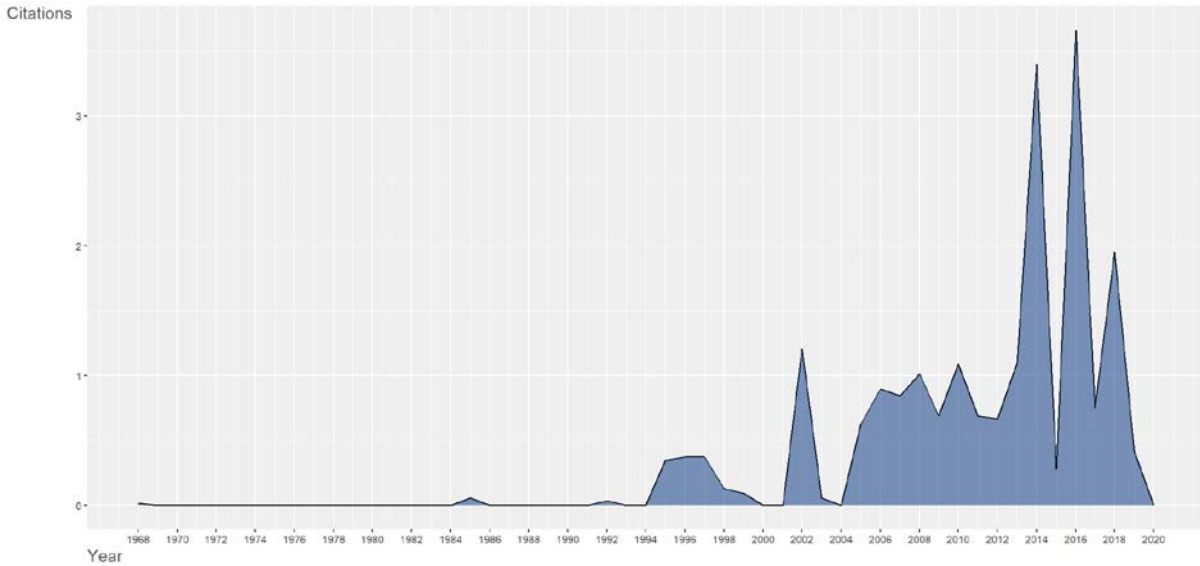
Table 2. *Main information about data*

Description	Results
Timespan	1968:2020
Sources (Journals, Books, etc)	15
Documents	98
Average years from publication	11,6
Average citations per documents	7,93
Average citations per year per doc	0,78
References	3750
Authors	205
Author Appearances	212
Authors of single-authored documents	40
Authors of multi-authored documents	165
Single-authored documents	42
Documents per Author	0,48
Authors per Document	2,09
Co-Authors per Documents	2,16
Collaboration Index	2,95

In the fifty-two-year period between 1968 and 2020, it was determined that 98 publications indexed in the Scopus database were made by a total of 205 researchers in the field of action research in education administration. The annual average number of publications is 1.88. Frequency analysis was performed to determine the distribution of articles by year. The results obtained as a result of the analysis are shown in Graph 1. It is seen that most publications were made in 2011 (n=10). It was determined that the years with the least number of publications were 1968, 1985, 1992, 1995, and 2017 (n=1). There was little increase until 2011, and it reached the highest level by increasing 50% in the transition to 2011. Although there was a decrease after 2011, it has increased again in recent years and it is seen that 8 publications were made in 2020.

Graph 1. *Scientific production by years*

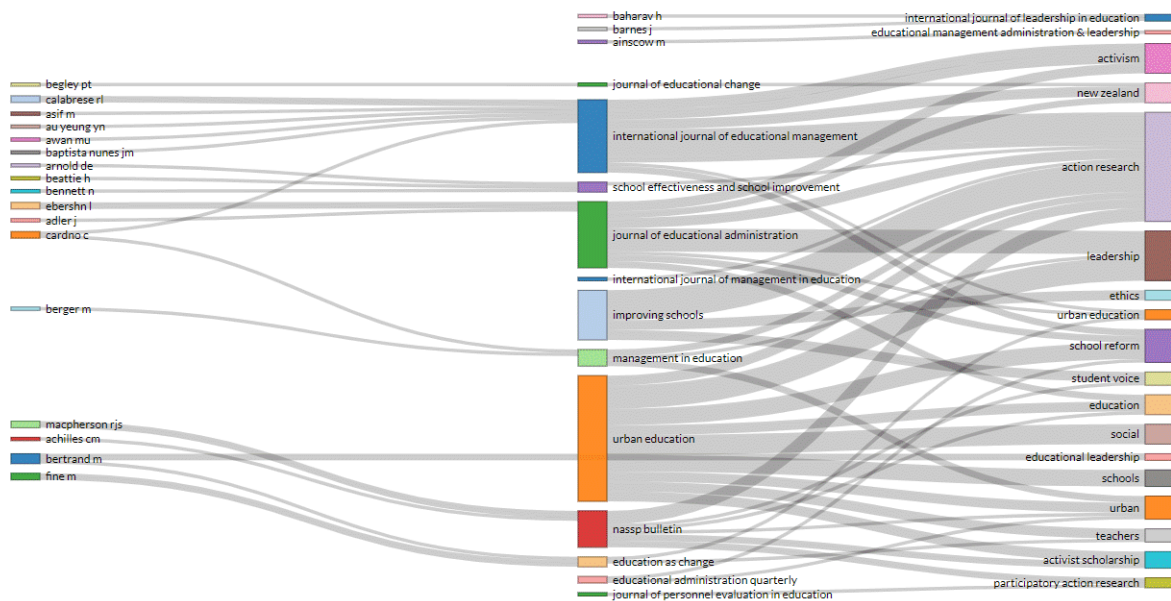
Graph 2. Annual average citations



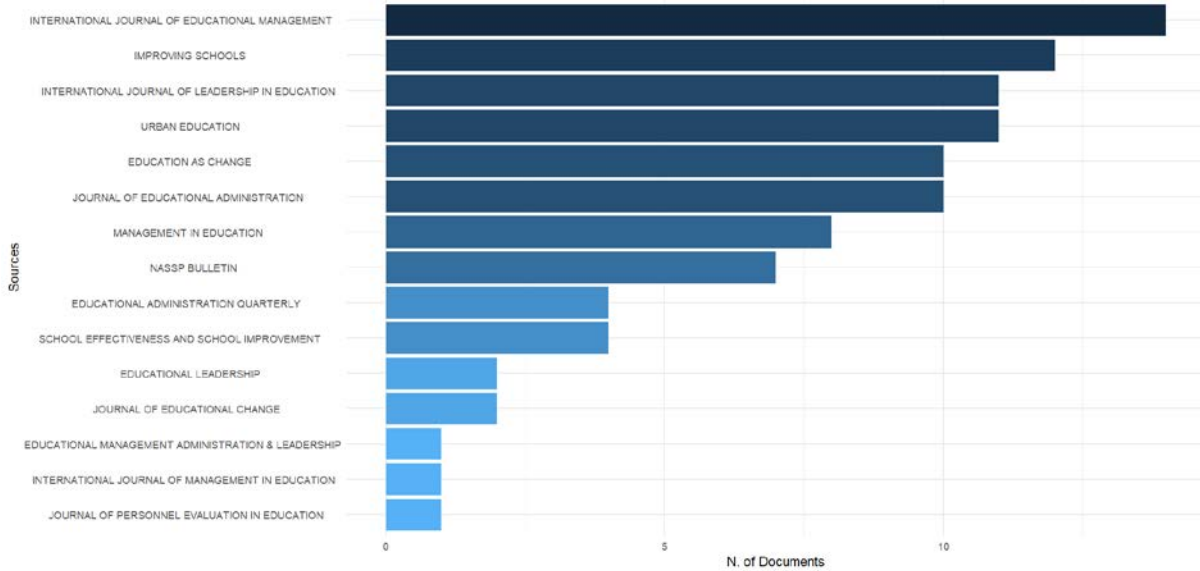
When the annual average number of citations in the literature of action research in educational management is examined, it is seen that the annual average is the highest citation, a total of 5 publications have been published with an average of 3.4 citations per year since 2014, and not all of the published articles are cited. Annual average citation numbers from 1968 to 2020 are shown in Graph 2.

It is seen that the authors of Bertrand, Cardno, and Calabrese have done more work in action research in educational administration than others (Graph 3). The sources most used in the study are Urban Education, Journal of Educational Management, Journal of Educational Administration, Improving Schools. Among the keywords used, action research, leadership, activism, school reform are frequently used words.

Graph 3. Author-source-word matching



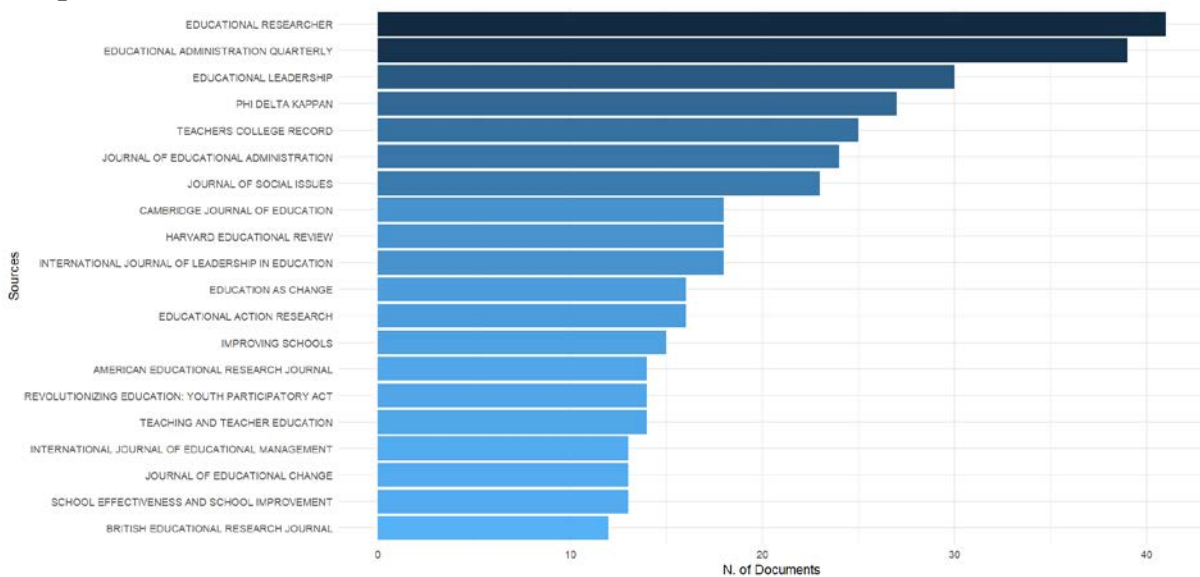
Graph 4. Top publishing sources



The distribution of publications in action research in educational administration is determined by examining. In Graph 4, the number of sources published in action research in educational administration is given. Accordingly, the total number of published sources was determined as 98. Looking at the data, the most published source was the International Journal of Educational Management (n=14).

The most cited sources were examined and the data reached are shown in Graph 5. The most cited source was Educational Researcher with 41 citations. The least cited source was the British Educational Research Journal with 12 citations.

Graph 5. Most cited sources



Bradford's Law, first formulated in 1934, refers to how the literature on particular topics is distributed among journals (Garfield, 1980). Garfield comments on Bradford's Law: "If you want to compile a bibliography on a topic, there is always a large group of journals that make up a significant percentage (1/3) of the articles on that topic. A second, larger set of journals makes up the second third of articles on that topic, and a larger set of journals makes up the last third" (Garfield, 1980). The impact factor used as a journal evaluation tool is calculated by dividing the

number of citations of the articles published in the last two years by the number of articles published by that journal in the previous two years (Garfield, 1994).

As seen in Graph 5, the distribution of articles to journals consists of 3 main journals in the first region, 3 journals in the second region, and 9 journals in the third region, according to Bradford's Law. Therefore, those who want to access studies on educational administration should first look at the International Journal of Educational Management, Improving Schools, International Journal of Leadership in Education, which are located in the first region.

Graph 6. Source clustering with Bradford's Law



The h-index was designed by J. E. Hirsch to measure the performance of physicists and later proved to be useful in other fields (Tunç, 2015). Thus, it has been proposed for other scientific fields (Hirsch, 2005). The h-index means you have h number of articles, each cited at least h times. In addition to the h-index, the average citation and total citation count are also important. The average citation is obtained by dividing the number of citations for all articles by the number of articles.

The result of the analysis of the source effect sizes of the action research in education administration is given in Table 3. When the table is examined, a total of 122 citations were received from 14 articles published in the International Journal of Educational Management in 1992, and the H-index was found to be 5. This means that there are 5 publications with at least 5 citations. The lowest level is the International Journal of Management in Education, which was published in 2007, with 1 citation in 1 publication and an H-index of 1.

Table 3. Source effect sizes

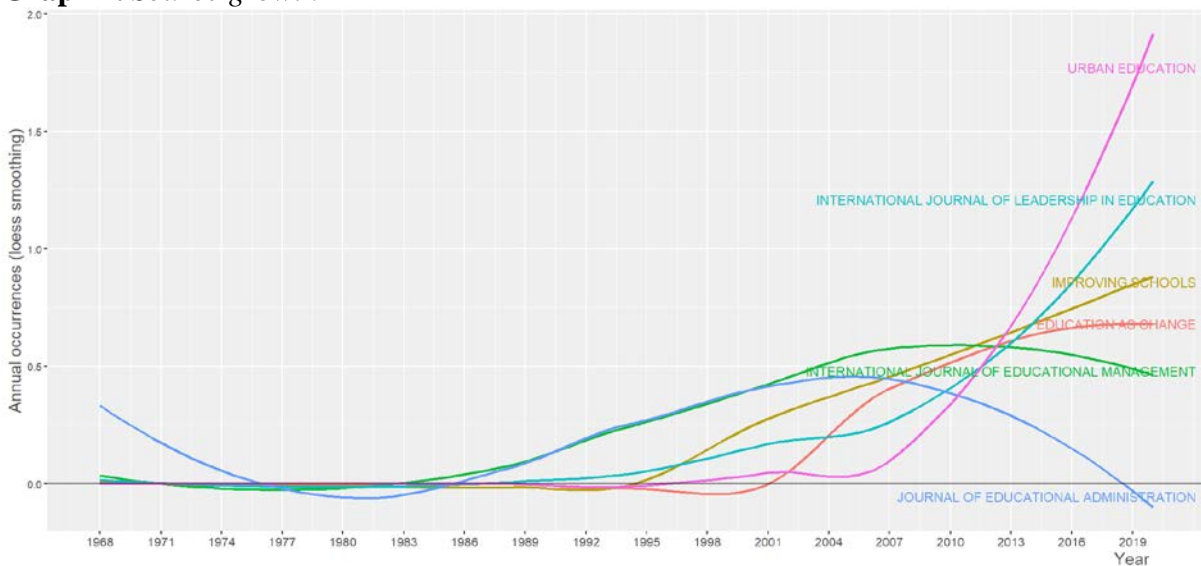
Source	h_index	TC	NP	PY_start
International Journal of Educational Management	5	122	14	1992
Improving Schools	4	62	12	2001
International Journal of Leadership in Education	4	60	11	1998
Urban Education	5	65	11	2006
Education as Change	3	30	10	2009
Journal of Educational Administration	4	65	10	1968
Management in Education	3	40	8	2001
NASSP Bulletin	3	72	7	1998
Educational Administration Quarterly	4	48	4	1995
School Effectiveness and School Improvement	3	146	4	1996
Educational Leadership	2	36	2	1998

Journal of Educational Change	1	14	2	2013
Educational Management Administration & Leadership	1	2	1	1985
International Journal of Management in Education	1	1	1	2007
Journal of Personnel Evaluation in Education	1	14	1	2005

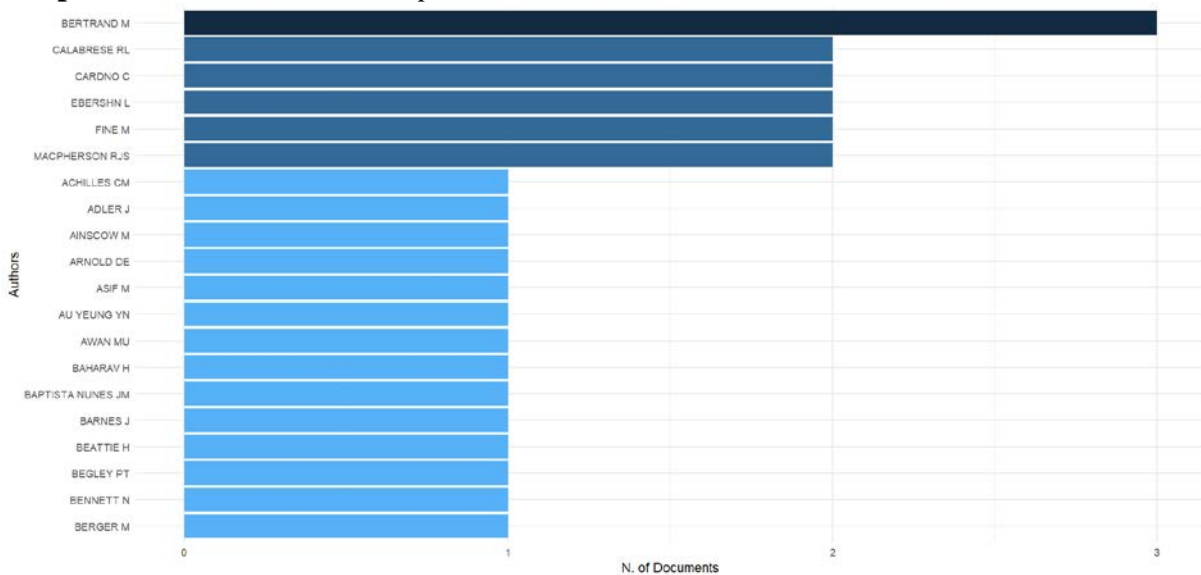
A comparison of the 6 journals in which action research in educational administration are published the most is shown in Graph 7. Despite its stagnant progress until 2007, Urban Education magazine has increased the number of publications every year after this year, gaining the status of the journal with the highest number of publications in 2019. After 2004, the number of publications gradually decreased and the journal with the least number of publications became the Journal of Education Administration.

The authors with the most publications were examined and shown in Graph 8. It is determined that the author with the most publications in educational administration is Bertrand with 3 articles. This was followed by Calabrese, Cardno, Ebershn, Fine, Macpherson with 2 articles.

Graph 7. Source growth



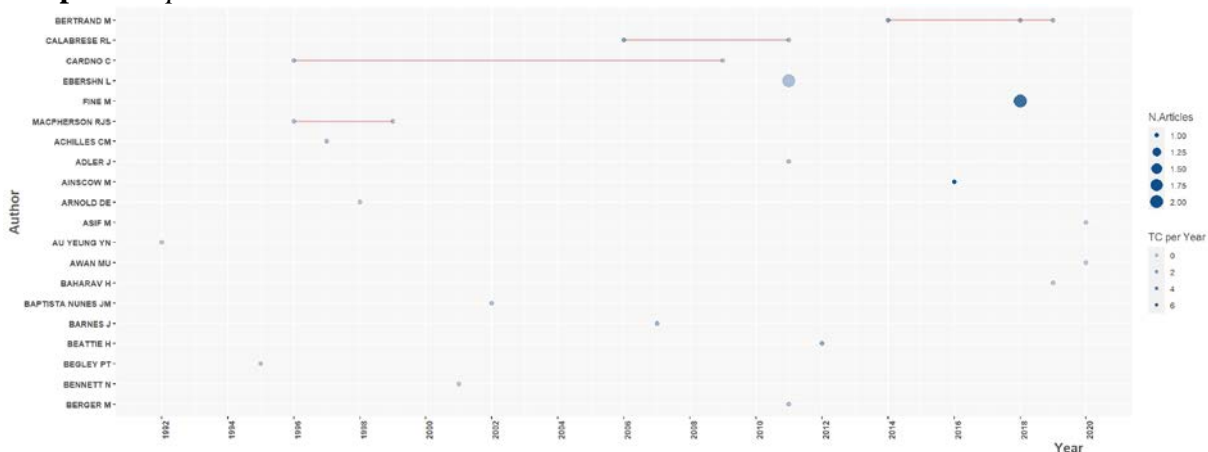
Graph 8. Authors with the most publications



In this section, the most cited authors in action research in educational administration are included. The findings obtained as a result of the analysis are shown in Graph 9. When we look at the

production process of the authors, it is seen that Begley and Yeung were the first writers to deal with the issue of educational administration. The size and darkness of the round shape in the graph show the citation power of the publications. Fine, Ebershn, and Ainscow draw attention with their highly cited work in this field for their recent contributions. It is understood that Bertrand, Calabrese, and Macpherson contributed to the literature for a long time, even if the citation power was not high.

Graph 9. Top-Authors' Production over the Time



There are many methods used for author productivity. One of them is the Lotka Law method. In the literature, there are different methods used to measure the productivity of the authors, which are called Pareto's Law, Price's Law, and Lotka's Law. According to the 80/20 rule, 80% of the total articles should be written by 20% of the authors (Erbaşı et al., 2017).

Of the action researchers in educational administration, 97% (199 authors) wrote one article, 2.43% (5 authors) wrote two articles, and 0.48% (1 author) wrote three articles. According to the findings, the distribution of action research in educational administration to the authors is not in accordance with the Lotka Law.

Table 4. Author productivity through Lotka's law

Documents written	N. of Authors	Proportion of Authors
1	199	0,971
2	5	0,024
3	1	0,005

In this section, the author's local effect sizes are discussed. The results of the analysis are shown in Table 5. When the author's local effect sizes table is examined; The h index was calculated by looking at the number of publications of the authors and the number of citations to these publications. This means that the low number of publications is the factor affecting the h index. No matter how many publications an author has, it has been determined that the h index is low as long as he is not cited. When we look at the table, the authors with h index 1 and 2 are seen. When the total number of publications of the authors with an H index of 2 are listed from largest to smallest, it means that there are only 2 groups of numbers close to each other, since the groups of numbers close to each other are accepted as 1. In other words, some authors have at least 2 cited publications. E.g; Bertrand has 3 publications and 24 references to these publications. Despite this, the h index was determined as 2. This example has the same feature on other authors.

Table 5. Author local effect sizes

Author	h_index	TC	NP	PY_start
Bertrand M	2	24	3	2014

Calabrese Rl	2	39	2	2006
Cardno C	2	16	2	1996
Ebershn L	1	4	2	2011
Fine M	2	22	2	2018
Macpherson Rjs	2	6	2	1996
Achilles Cm	1	13	1	1997
Adler J	1	6	1	2011
Ainscow M	1	45	1	2016
Arnold De	1	3	1	1998
Asif M	0	0	1	2020
Au Yeung Yn	1	1	1	1992
Awan Mu	0	0	1	2020
Baharav H	1	1	1	2019
Baptista Nunes Jm	1	12	1	2002
Barnes J	1	16	1	2007
Beattie H	1	18	1	2012
Begley Pt	1	9	1	1995
Bennett N	0	0	1	2001
Berger M	1	6	1	2011

In the table below, the universities where the authors work in action research in educational administration and the number of articles are given. It is determined that a total of 20 institutions and a total of 48 articles were published. The institutions with the highest number of articles were taken into account, while the others were not taken into consideration. When the table is examined, it is seen that the institutions that wrote the most are the University of Johannesburg and the University of Manchester with 4 articles. These are followed by Arizona State University, City University of New York, University of California, and the University of Pretoria with 3 articles. The remaining institutions are also included in the table with 2 articles.

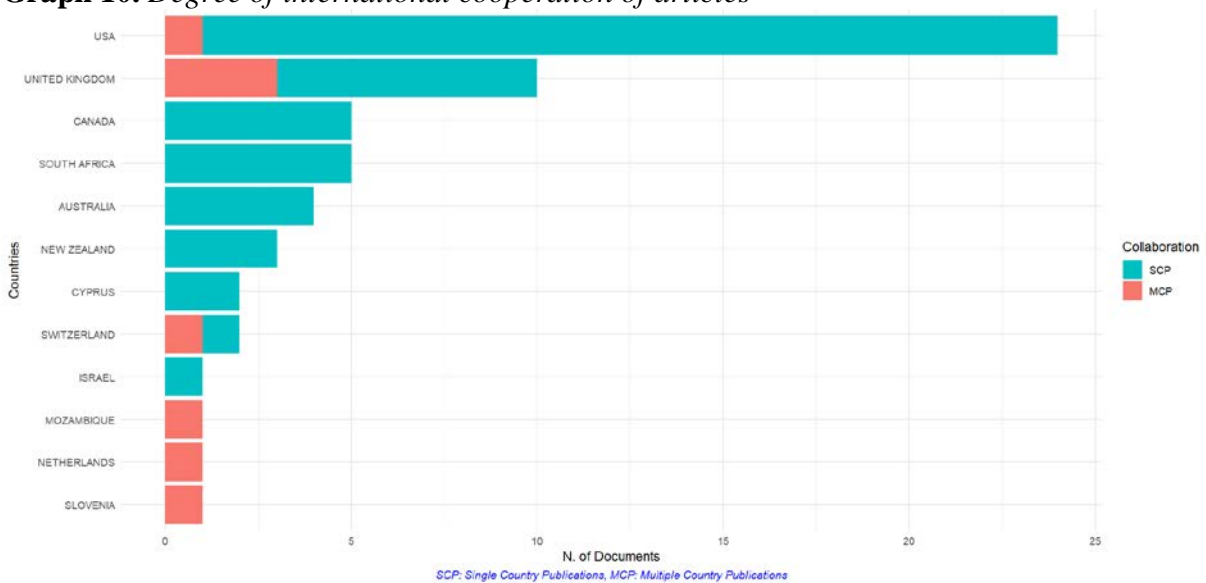
Table 6. *Universities where the authors work*

Affiliations	Articles
University of Johannesburg	4
University of Manchester	4
Arizona State University	3
City University of New York	3
University of California	3
University of Pretoria	3
Canterbury Christ Church University	2
Cornell University	2
Hong Kong Polytechnic	2
Johns Hopkins University	2
Rhodes University	2
School of Education	2
The Ohio State University	2
Unitec Institute of Technology	2
University of Auckland	2
University of Kwazulu-Natal	2
University of Massachusetts	2

University of Reading	2
University of South Australia	2
University of Tasmania	2

The international publications of 12 countries that have the most publications on action research in educational administration were examined. When the graphic is examined; While SCP means the production within the country, MCP means the production made with the cooperation of more than one country. According to this, even if it is seen that the USA is the country with the highest production with 24 articles, it is understood that the MCP ratio is only 1. However, the United Kingdom, which has 10 publications in total on educational administration action research, is found to be in the first place with a 30% MCP cooperation rate. South Africa produced all 5 publications in its own country.

Graph 10. Degree of international cooperation of articles



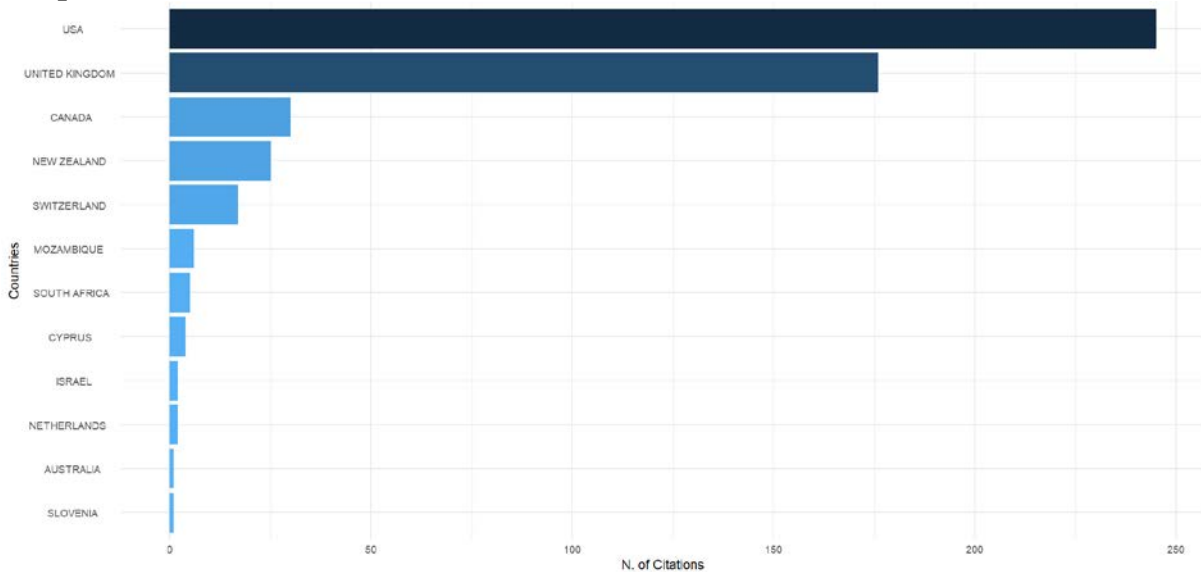
Graph 11 shows the countries of the authors in articles on action research in education management worldwide. Countries with authors publishing on this subject are shown in blue according to the number of articles. The countries shown in gray are the countries with no authors. The number of articles includes those published jointly based on co-authorship between different countries. In other words, if an article has authors from more than one country, that article is added to the frequency of each author's country. A total of 20 countries contributed articles on action research in educational administration. The most productive country in this regard was the USA with 64 authors. This was followed by England with 25 articles, South Africa with 14 articles, and Australia with 11 articles.

Graph 11. *Country scientific production map*



Graph 12 shows the 12 most cited countries. When we look at the articles on action research in education administration, the USA is the leading country with 245 citations. This is followed by the United Kingdom with 176 citations. With the fewest references, Slovenia ranks lowest.

Graph 12. *Most cited countries*



This section considers 19 of the most cited articles on educational management and is presented in Table 7. Hopkins' article ranks first with 89 citations globally. Messiou's article ranks second with 45 citations. Brauckmann's article ranks third with 41 citations.

Table 7. *Most globally cited publications*

Paper	DOI	Total Citation	TC per Year	Normalized TC
Hopkins D, 2014, Sch Eff Sch Improv	10.1080/09243453.2014.885452	89	11,125	3,739
Messiou K, 2016, Sch Eff Sch Improv	10.1080/09243453.2014.966726	45	7,5	2,454
Brauckmann S, 2011, Int J Educ Manage	10.1108/09513541111100099	41	3,727	5,942
Calabrese RI, 2006, Int J Educ Manage	10.1108/09513540610654146	34	2,125	2,518
Calhoun Ef, 2002, Educ Leadersh	NA	34	1,7	1,478
Rubin Bc, 2007, Nasp Bull	10.1177/0192636507310316	27	1,8	2,288
Langlois L, 2010, J Educ Adm	10.1108/09578231011027824	26	2,167	2,166
Mckenzie Kb, 2008, Int J Leadersh Educ	10.1080/13603120801950122	24	1,714	1,818

Gajda R, 2008, Nassp Bull	10.1177/0192636508320990	24	1,714	1,818
Bergmark U, 2009, Improv Sch	10.1177/1365480209342665	23	1,769	2,788
Bertrand M, 2014, Educ Adm Q	10.1177/0013161X14542582	18	2,25	0,756
Beattie H, 2012, Manage Educ	10.1177/0892020612445700	18	1,8	3
Stauffer Sd, 2013, Educ Adm Q	10.1177/0013161X13482578	17	1,889	1,932
Barnes J, 2007, Improv Sch	10.1177/1365480207078580	16	1,067	1,356
Clark Ma, 2008, Nassp Bull	10.1177/0192636508321155	15	1,071	1,136
Gunter H, 2007, Manage Educ	10.1177/0892020607073399	15	1	1,271
Davies T, 2013, J Educ Change	10.1007/s10833-012-9192-3	14	1,555	1,591
Mcintyre A, 2006, Urban Educ	10.1177/0042085906292510	14	0,875	1,037
Ovando Mn, 2005, J Pers Eval Educ	10.1007/s11092-006-9018-z	14	0,823	1,4
Cardno C, 1996, Int J Educ Manage	10.1108/09513549610146105	14	0,538	1,5

In this part of the research, the keywords used in the published articles are examined. The word action research was used 31 times and took the first place. This is followed by leadership with 10 uses and social with 7 uses. The color of the words in the word cloud is random and the word size is directly proportional to the number of repetitions. The most repeated word in action research takes its largest form, while the least repeated word in the first 50 most repeated words takes its smallest form.

Graph 13. *The most frequently used keyword map*

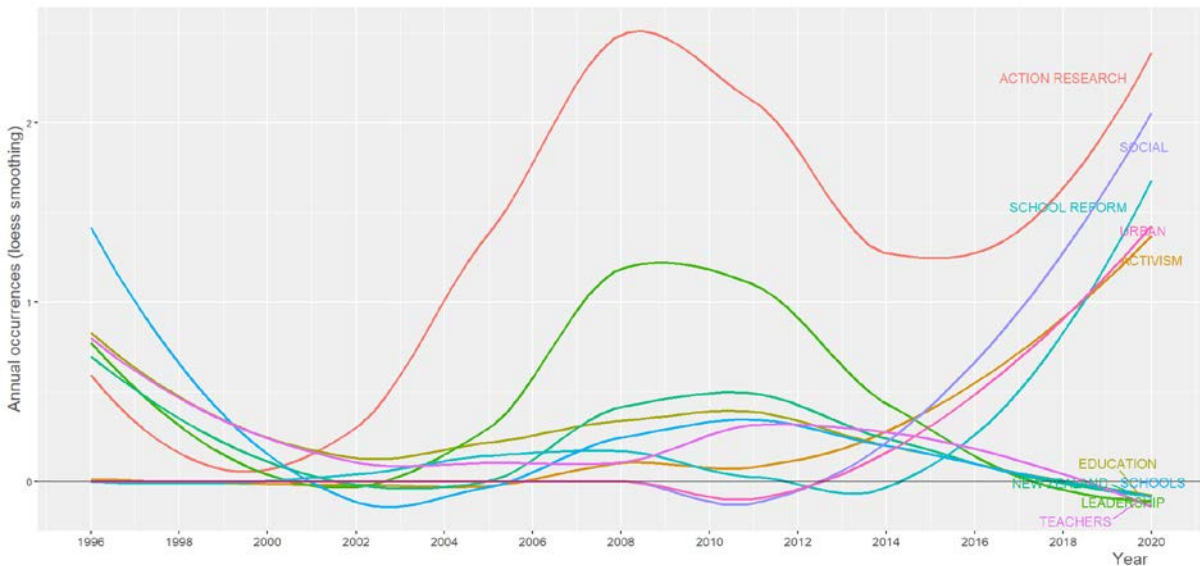


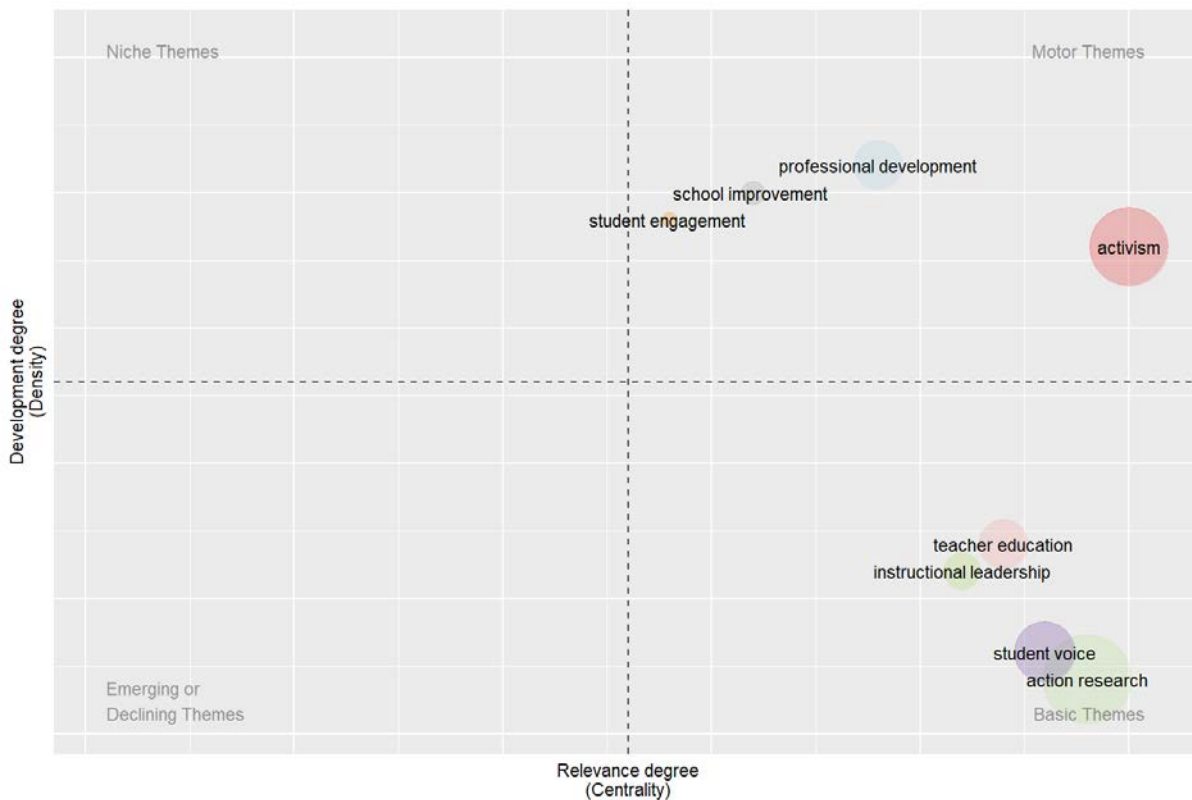
Graph 14. *The most frequently used keyword cloud*



Graph 15 shows the change over the years of the most repeated keywords in articles on action research in educational administration. While analyzing, the years 1996 and 2020, in which the 10 most frequently used words were used, were taken into consideration. The most used word action research was first used in 1996, and it has always been the most used word until 2010. Even if it is used less after 2010, it did not leave the first place to other words. Even in 2020, the most frequently used word has kept its place. Although the word leadership was used after the word action research, its use decreased after 2010 and was close to the number of other keywords on average.

Graph 15. *Word growth*



Graph 16. *Thematic map of keywords*

First, Callon et al. used the importance of the research topic to analyze the development of the period (Callon et al., 1991). A thematic map is a coordinate consisting of centrality (x-axis) and density (y-axis). Centrality measures the importance of the chosen theme, while intensity measures the development of the chosen theme (Cobo et al., 2011; Nasir et al., 2020). 4 clusters are formed in the theme called Motor Theme. The words Activism, Professional development, school improvement, and student engagement represent this region. Its location is both well developed and important for research. In the theme, which is called the basic theme, the words are clustered in 4 different clusters. The first set is action research, the second is student voice, the third is instructional leadership, and the fourth is teacher education.

CONCLUSION

In this section, the conclusions reached depending on the findings are given. The articles published in scientific journals between 1968 and 2020 were scanned and 98 articles were reached. The authors, publication years, and the journals in which they were published were examined. In the study, the authors of the single-authored publications are 42, while the authors of the multi-authored publications are 165. Considering the authors' index per publication, the average was determined as 2.09.

While the most published source in the study was determined as the International Journal of Educational Management, the most cited source was Educational Researcher. While the authors mostly came from the USA, there were also publications from countries such as the UK, Canada, and South Africa. Hallinger and Kovačević (2019), in their bibliometric analysis study on educational administration, stated that international quality research on educational administration came not only from the United States, Canada, and England but also from countries in Asia, Latin America, and Africa according to geographical characteristics. When the scientific productions of the countries in action research are examined, the USA has been the country with the most productive publications on this subject. This was followed by England, South Africa, and Australia. It was previously determined that more studies were conducted in the field of educational administration in western countries (Bozkuş, 2021; Gümeç & Bozkuş, 2021).

In the bibliometric study of Panczyk et al. (2015), it has been shown that scientific publications that have a great impact on educational research are generally produced in statistics and research methods. However, it is understood that there is not enough space for action research in educational administration.

The reasons for the scarcity of action research in this study may be the natural features of action research, such as the long duration of the research and the inability to generalize the results. These features may not appeal to academics who are worried about publishing soon. Also, the disconnect between academics and practitioners can be seen as another obstacle to the conduct of action research that requires long-term collaboration.

Action research deals with problems specific to an event, institution, or person. In today's educational institutions, teachers do not participate in the administration, drop out of school, absenteeism (student/teacher), peer bullying, etc. Problems that may be general or specific to the school, class, and teacher are encountered. To address these issues, teachers and other practitioners should be provided with an overall research culture. Action research should be supported because of its contributions to teachers, students, and society. Educational staff should be encouraged for such research, financial support should be provided, and thus the number of action research should be increased.

This research makes an important contribution to the research on action research in educational administration and management by the bibliometric analysis of many studies indexed in the Scopus database. The study results draw a big picture based on numerical evidence on the development of action research in educational administration and management research. However, the study has some limitations. Although the authors spent a lot of time and effort in minimizing errors during the research process, considering the nature of bibliometrics and the high number of articles, there could still be minor errors. Also, articles published in some well-known educational journals that were not indexed in the Scopus database were excluded from the research. They were excluded because of the capabilities of the software used, and it is considered a common deficiency for bibliometric analysis studies. Future studies may include journals excluded from this study. Finally, there may be over-generalization during the analysis of the articles. Future research should narrow the scope by focusing on a single category and conducting a more detailed analysis of a small number of articles. This study has proved that interest in action research in educational administration and management is constantly growing. However, research on action research in educational administration and management is not prevalent worldwide. The use of action research in educational administration and management should attract the attention of all researchers around the world.

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