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Bibliometric Analysis of Social Sciences

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Abstract

This study aims to determine the outcomes of research conducted by students in the Faculty of Social Sciences between the academic years of 2018 and 2020, as well as the suitability of those results, which includes: the scientific field studied, what topics are saturated and no longer in demand, and the trend of topic distribution growing. At this study, the Deway Decimal Classification (DDC) standard was used to map out the distribution of research fields among students in the Faculty of Social Sciences. In order to develop the roadmap for each study program at the Faculty of Social Sciences, State University of Medan for the upcoming student research, this research combines quantitative and qualitative methods to determine the distribution of thesis research topics. The thesis sample data obtained from the Medan State University Repository was processed using the VosViewer program by means of the data first tabulated with the help of M.S. Excel and the Open Refine Application then analyzed descriptively qualitatively. According to the study's findings, Medan State University's Faculty of Social Sciences will have graduated 1,341 theses between 2018 and 2020 consisting of the History Education Study Program, Geography Education, Anthropology Education and Civics Education. According to data from a mapping of scientific fields based on DDC that depicts the research areas of each study program in the Faculty of Social Sciences, education, research, related historical topics, geography education, national and ethnic groups, and citizenship and related topics are the ones that students are most interested in researching.

Key words: Bibliometric analysis, science mapping, social science.

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INTRODUCTION
Background of Study

The departments of History Education, Geography Education, Anthropology Education, and Civic Education make up the Faculty of Social Sciences of State University of Medan. One of the seven faculties overseen by the State University of Medan is the Faculty of Social Sciences.

The Faculty of Social Sciences's goal is to become a faculty that excels in the advancement of social sciences and education. Teaching social sciences and professional competency-based education is the goal of the faculty of social sciences. Through individual and institutional research endeavors, develop education and the social sciences. Applying education and social science to the larger community through volunteer work and partnerships with diverse organizations promoting initiatives to build a society that is founded on the high ideals of the country's culture and is religious, moral, disciplined, professional, and has a work ethic (Fakultas Ilmu Sosial, 2022).

One of the objectives of the Faculty of Social Sciences (FSS) is to produce graduates with competence in social science education and social science knowledge who are useful for themselves in productive activities and are able to serve the community with attitudes and behaviors that are in line with common life (Fakultas Ilmu Sosial, 2022).

It is vital to perform study on the thesis results to determine how much the vision and mission of Medan State University, particularly in the Faculty of Social Sciences, are supported by the student thesis research findings. Conducting research is a requirement for students to graduate from higher education. There are still numerous fields or topics that have not been examined due to the fact that students' studies are frequently grouped and overlapped. Therefore, it is crucial to map the study findings of these students, including not only the research's titles but also its subjects and objects as well as the connections between these studies.

The research's scope is restricted to the information contained in the final projects or theses produced by students enrolled in the Bachelor's or Strata 1 (S-1) program at the Faculty of Social Sciences, State University of Medan, where the thesis is one of the requirements for graduation. The thesis year is only permitted for the 2018–2020 academic year, or for three years.

The purpose of this study's findings is to establish a research roadmap for undergraduate students so that it can be used as information and input for the administration of the university and Faculty of Social Sciences, State University of Medan, to evaluate the distribution of fields or objects that students in the faculty study. in finishing his capstone project, Medan State University Social Sciences.

Dewi conducted a similar study under the heading "Mapping Literature in Thesis of Library Information Management" (Rachmaningsih, 2022). This study comes to the conclusion that student theses include a wide range of scientific languages, types, and topics. The literature that makes up library and information science is dynamic and interconnected because it will continue to be influenced by trends that are becoming popular research topics, advancements in other scientific fields, students' capacities and preferences for choosing literature, the supervisor's perspective on directing references, background knowledge /education of lecturers and students of the situation and condition at the time the literature was cited, and developments in other fields of study (access, technology, policies, costs, etc.).

"Bibliometric Study and Distribution of Special Collection Topics for the Academic Community at STAIN AL-Fatah Jayapura 2007-2017 (now IAIN Fattahul Muluk Papua)" was the title of Tuwaji's second study. Tuwaji (2019). The investigation comes to the following conclusions: (1) The distribution of written knowledge is not uniform. Islamic religious education, reading and writing the Qur'an, learning methodologies, teaching, and in this instance teachers' teaching are subjects that are frequently written about. The study of curricula, Islamic tolerance, students, education, and guiding systems are still relatively under-written fields of science; (2) The most productive authors in terms of output are Idrus Al Hamid and Umar Faruq with 11 titles, followed by Sofwan Aljauhari with 3 research reports, an anthology of articles with 4 titles, and Idrus Al Hamid and Safiudin. (3) The level of author collaboration is still very low, with multiple authors contributing only 4.07% of the total, compared to individual authors who contribute 95.07%. (4) The use of references with a low level of obsolescence means that some of the literature or books used as references are both recently

published books and commonly used books with a low level of obsolescence. The collection of scientific writings-books (0.6) and research papers with the degree of collaboration may be found (0.38). (4) The use of references with a low level of obsolescence means that some of the literature or books used as references are both recently published books and commonly used books with a low level of obsolescence. The most recent references utilized, according to the statistics, are 34% of 0–5 years old, 38% of 6–10 years old, and moreover, reference books with a higher level of obsolescence are used less frequently. According to (Pattah, 2013), curriculum analysis and evaluating the caliber of research findings are two advantages of bibliometric studies. Bibliometrics can be applied in all facets of quantitative and scientific communication methods, storage, diffusion, and retrieval of scientific knowledge, according to Marraro (2008) in (Pattah, 2013). Various forms of scientific literature, such as books, monographs, research reports, theses, dissertations, articles in series and periodicals, and other primary sources are the subjects of study in bibliometrics, according to Glazel (2009) in (Pattah, 2013).

According to (Supardan, 2017), social science is a study of the scientific discipline that focuses on the interactions within society as well as the link between people and their surroundings. In order to improve living standards, it is crucial to comprehend how humans and social sciences interact. Humans have a significant influence on the development of social science. Understanding social phenomena, such as collaboration or conflict, is the goal of social science. The author views and groups many fields that are included in the social sciences using a structural perspective (Dadang (Supardan, 2017).

According to (Gie, 1999), "understanding social sciences" is a catch-all term for all scientific information that applies to general science (Science in General). The world we live in today and the perspective we have of it have both been greatly influenced by science. According to (Soekanto, 1993) the term "social" refers to interpersonal interaction or social activities. Therefore, it may be said that social science is the study of social processes that take place in society. Melvil Dewey created the Dewey Decimal Classification (DDC) (1851 -1931). DDC is a hierarchical system classification diagram that divides all areas of knowledge according to the decimal principle (Zen, 2009). DDC divides human science into ten main classes, ten divisions, and ten sections for a total of ten main classes, one hundred divisions, and one thousand sections (Rahayuningsih, 2007).

Science disciplines are categorized using the Dewey Decimal Classification (DDC). DDC organizes the scientific disciplines into ten groups, as shown in charts 1 000 through 099: Charts 2, 100–199 in Computers, Information, and Public Works: Charts 3, 200–299 in Philosophy and Psychology; Charts 4, 300–399 in Religion; Charts 3, 200–299 in Science Charts 5, Social Sciences, 400-499: Charts for language, 6, 500 to 599 Charts in science 7 600 - 699 Charts 8, technology, 700–799 Arts, charts 9 800 - 899: Charts related to literature Geography and history 10900-999. 10 sub-divisions are then created within each of these classifications, and so on (Tuwaji, 2019).

The Dewey Decimal Classification (DDC) standard was used to organize the social sciences into categories (300-399) for social sciences and (900-999) for geography and history, along with a variety of other related areas. The following scientific disciplines were looked into: education in history, geography, anthropology, and PKn (Civics Education). The Dewey Decimal Classification (DDC) standard further subdivides each of these disciplines into more focused subjects.

METHODOLOGY

The development and application of mathematical models, theories, and/or hypotheses pertaining to natural phenomena is indeed the goal of quantitative research (Sugiyono, 2014). Descriptive analysis, which is described as an analysis carried out to analyze the features of a data set, was performed on the findings of the observations and interviews (Hidayat, 2012). According to Sugiyono, descriptive analysis is a technique used to describe or give a general overview of the thing being studied using data or samples that have been obtained without analysis or drawing generalizable conclusions (Sugiyono, 2014).

The population of the research object for this study is all of the Faculty of Social Sciences' 2018–2020 thesis grads. Purposive sampling with a limit of 1341 theses for the years 2018

to 2020. The purposive sampling approach is a non-random sampling method in which the researcher chooses the sample based on certain factors related to the goals and objectives of the study, specifically that the sample has the data the researcher needs for the success of his or her investigation (Muljono et al., 2009).

The thesis data used in this study came from the Medan State University Library's thesis database. The data for the most recent three (three) years, from 2018 to 2020, are the criteria for the data collection. Based on the year of the thesis, the data is represented by the social sciences faculty's symbol. Additionally, the data is tabulated in accordance with the study program at the Faculty of Social Sciences, Medan State University, which comprises of education in history, geography, anthropology, and civic Education. Following tabulation, the data are organized according to the Dewey Decimal Classification (DDC) standard per scientific field.

With the use of Microsoft Excel and the OpenRefine Application, data from the thesis database sample was processed by tabulating, and the tabulation was then descriptively and qualitatively assessed. Data analysis is the act of carefully gathering data through observations, interviews, field notes, and documentation. This is done by classifying the data into groups, describing them as units, synthesizing them, arranging them into patterns, and deciding which ones are most significant. Explain what will be examined, and draw conclusions that are clear to both the author and the reader (Sugiyono, 2014). Muljono et al. cite Spradley (1980) as saying that the step-by-step technique of analysis was used specifically for qualitative data. In this method, data collection and analysis were completed simultaneously, so that when the observation stage was completed, the interview stage was also completed. When conducting observations and interviews for the following stage, the results of the analysis of the observations and interviews are employed (Muljono et al., 2009). The VosViewer application developed by Nees Jan van Eck and Ludo Waltman is used to exhibit a keyword or co-word map and keyword density (density visualization) that appear in the UNIMED Faculty of Social Sciences 2018-2020

documentaries. The VosViewer application is a computer application tool that can be used to view bibliometric maps (Tupan, 2016). Meanwhile, according to Purwoko, one of the VosViewer applications is used to visualize bibliographies, or data sets containing bibliographic fields and in research, this application is used for bibliometric analysis and looking for topics that still have opportunities to be researched (Purwoko, 2019). This study tracks the keywords used by students when uploading their own theses to the Medan State University Library database in order to create a map of co-words or subject-key words in student research. The student-generated keywords are then chosen and validated to obtain those that have full meaning, eliminating incorrect and incomplete keywords. Then, using VosViewer, the keywords are processed after being translated into Indonesian.
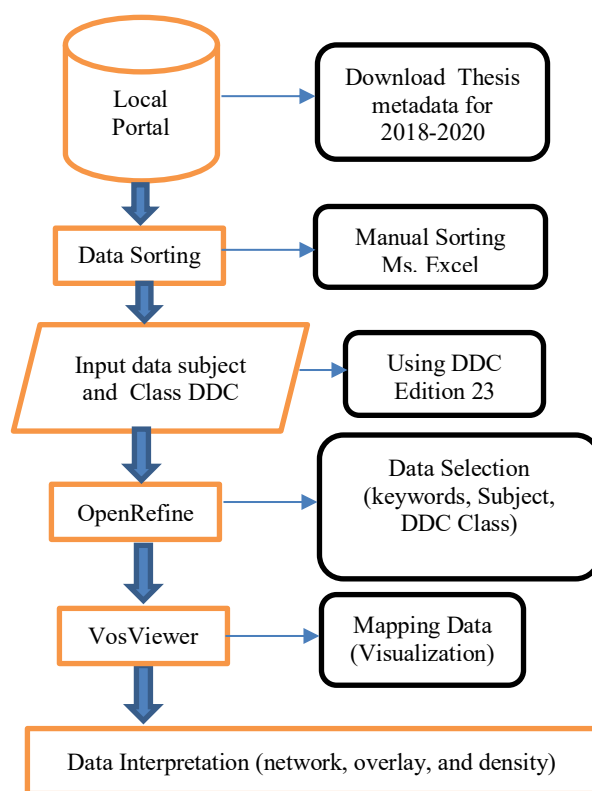

Figure 1. Bibliometric Analysis Process
Source: Researcher-processed, 2022

DISCUSSION

Thesis of the Faculty of Social Sciences, State University of Medan is a thesis that has been approved by the library and has been published online through the website: http://digilib.unimed.ac.id/, in open access,

with the restrictions imposed by the library that not all can access freely to prevent plagiarism. From July 2021 to December 2021, 5 (five) months of this study were carried out.

Table 1. Distribution of Social Sciences Faculty Theses

No.	Department	2018	2019	2020	Amount
1	History Education	93	160	66	319
2	Geography Education	133	136	102	371
3	Anthropology Education	92	124	79	295
4	Civics Education	124	152	80	356
	Total	442	572	327	1341
	Percentage (%)	32,96 %	42,65 %	24,38 %	100 %

Source: FSS Students' Theses, 2018-2020 graduates

The distribution of the number of the first thesis study topics, which in 2019 totaled 572 titles (42.65%), is revealed by the image in Table 1 above. While there were 442 studies, or 32.96% more than in 2018, there were only 327 research titles, or 24.38%, as many research titles in 2020.

Research Topics by Study Program Distribution

The distribution of thesis research at the Faculty of Social Sciences (FSS), State University of Medan from 2018 to 2020 for each study program provides information on the number of studies, which is illustrated as follows in Table 2's illustration.

Table 2. The number of theses is distributed according on study program

No.	Program Study	Volume	Percentage (%)
1	History Education	319	24%
2	Geography Education	371	28%
3	Anthropology Education	295	22%
4	Civics Education	356	27%
	Amount	1341	100%

Source: FSS Students' Theses, 2018-2020 graduates

The study programs that at least produce a thesis contained in the anthropology education study program had a total of 22% of the research conducted during the 2018–2020 period. Civics education had a percentage of 27%, history education had a percentage of 24%, and geography education had a total of 28%.

Distribution of Science Fields Based on DDC

According to the Dewey Decimal Classification (DDC) standard, the study themes in each Study Program of the Faculty of Social Sciences are grouped in Appendix 1 through 4. The social science group (grade 300) is the focus of the research for the student theses of the History Education, Geography Education, Anthropology Education, and Civics Education Graduates Study Program in the 2018–2020 academic year and lastly Geography and History (900-999).

According to the Dewey Decimal Classification (DDC), Appendix 1 shows how the distribution of the number of knowledge fields in the History Education FSS Unimed Graduates 2018-2020 thesis is organized. According to the figure, the top 10 thesis research topics were Education, Research, and Related Topics of History, which had 97 studies (30.41%); History of Asia, Indonesia and East Timor, which had 25 studies (7.84%); History With Respect to Ethnic and National History, which had 22 studies (6.90%); Indonesia and East Timor, 1945–1998, which had 18 studies (5.64%); and History, Geography, and Auxiliary, which had 14 studies (5.41%); topics of Sociology of Knowledge and History of Asia; East Timor and North Sumatra each receiving nine papers (equally 2.82 percent); History of Asia; Indonesia; and Up to seven studies (2.19%) were devoted to the administration of Soekarno from 1945 to 1967; six studies (1.88%) were devoted to culture and institutions.

The distribution of the number of topics of knowledge in the thesis of Geography Education FSS Unimed Graduates 2018-2020 is shown in Appendix 2 based on the Dewey Decimal Classification (DDC). According to the graph, geography and travel are among the top 10 topics for thesis research, followed by education with 81 studies (22.16%), geography and travel in Asia with 23 studies (6.22%), geographic areas with 22 studies (5.95%), people by social and economic status with 11 studies (2.97%), mathematical geography with 10 studies (2.70%), topics on geography and travel, and computer applications with 10 studies (2.70%). Floods

have received up to 7 studies (1.89%); land, recreation and wilderness areas, and energy have received up to 6 studies (1.62%); pollution has received up to 6 studies (1.62%); and mass movement (mass waste) has received up to 6 research (1.62%).

The distribution of the number of topics of knowledge in the Anthropology Education thesis of FSS Unimed Graduates 2018-2020 is shown in Appendix 3 based on the Dewey Decimal Classification (DDC). The figure shows that the top 10 thesis research topics were Ethnic and National Groups, which accounted for 17 studies (5.74%), Rites and Ceremonies, which accounted for 10 studies (3.38%), Social Interaction, which accounted for 10 studies (3.38%), Customs of Life Cycle and Domestic Life, which accounted for 9 studies (3.04%), and Topics about Women, which accounted for 9 studies (3.04%); Conflict and conflict resolution received seven studies (2.36%), rites and ceremonies received six studies (2.03%), groups of people received six studies (2.03%), and specific cultural aspects received six studies (2.03%).

In the Civics Education thesis for FSS Unimed Graduates 2018–2020, the distribution of the number of knowledge fields is shown in Appendix 4 based on the Dewey Decimal Classification (DDC). The figure shows that the top 10 thesis research topics were Citizenship and Related Topics, which accounted for 59 studies (44.36%), Moral, Ethical, and Character Education, which accounted for 15 studies (11.28%), Political Rights, which accounted for 12 studies (9.02%), and Civil Service System, which accounted for 12 studies (9.02%); Local Government: up to 11 studies (8.27%); The Political Process: up to 10 studies (7.52%); Public Finance at the Local Level: up to 8 studies (6.02%); Political Science (Politics and Government): up to 6 studies (4.51%); Election Systems and Procedures: up to 6 studies (4.51%); Suffrage: up to 6 studies (4.51%); and Nationalism, Regionalism, Internationalism: up to 6 studies (4.51%); Education; Auxiliary Party Organizations; Law.

Keyword-Subject Roadmap Visualization

"The map of the field of science is a depiction of the field of science in two or three dimensions," claimed Noyons (2001) in (Rahmaida, 2017). The symbols on the map denote the themes and issues in the scientific field depicted, making it possible to refer to this map as a "landscape of science." Co-occurrence serves as the foundation for the majority of field maps. The tighter the relationship between the two elements and their visual proximity to their respective locations on the map are, the more pairs of elements that appear together.

The procedure of visualizing the processed roadmap data that is available in the keyword-subject table and then being examined with the aid of the VosViewer program is described in this study. With the aid of the VosViewer program, data analysis tasks are completed together with network visualization, overlay visualization, and density visualization of predefined keywords and subjects. Based on the analysis's findings, the VosViewer program may display data on the amount of keyword-subject items that are dispersed in clusters, as shown in the table below.

Table 3. Distribution of the Number of Keyword-Subject Items Based on Vosviewer Analysis Results

Cluster	Keyword-subject Item	Percentage (%)
1	12	41,38%
2	6	20,69%
3	6	20,69%
4	3	10,34%
5	2	6,90%
Total	29	100%

Source: Student Thesis of History Education Study Program Graduates 2018-2020, DDC (Dewey, 2011), and LCSH (Library of Congress, 2000).

The first 12 keywords-subject items (41.38%), second and third 6 keywords-subject items (20.69%), fourth 3 items keyword-subject (10.34%), and fifth 2 items keyword-subject are those included in the clusters, if the distribution of the number of keywords-subjects in table 4 above is sorted from most to least (6.90).

Table 4. Distribution of the Number of Keyword-Subject Items Based on Vosviewer Analysis Results

Gugus (Cluster)	Keyword-Subject (Item)	Percentage (%)
1	9	21,95%
2	7	17,07%
3	6	14,63%
4	6	14,63%
5	5	12,20%
6	3	7,32%
7	3	7,32%
8	2	4,88%
Total	41	100%

Source: Student Thesis of Geography Education Study Program graduates 2018-2020, DDC (Dewey, 2011), and LCSH (Library of Congress, 2000).

When the distribution of the number of keywords-subjects in table 4 above is ordered from most to least among eight clusters (clusters), those that are included in the clusters are: The first nine keywords-plus-subject items (21.95%) are followed by seven keywords-plus-subject items (17.07%), six keywords-plus-subject items (14.63%), five keywords (12.20%), three keywords-plus-subject items (7.32%), and two keywords (4.88%).

Table 5. Distribution of the Number of Keyword-Subject Items Based on Vosviewer Analysis Results

Gugus (Cluster)	Keyword-Subject (Item)	Percentage (%)
1	7	25,93%
2	6	22,22%
3	5	18,52%
4	3	11,11%
5	2	7,41%
6	2	7,41%
7	2	7,41%
Amount	27	100%

Source: Student Thesis of Anthropology Education Study Program graduates 2018-2020, DDC (Dewey, 2011), and LCSH (Library of Congress, 2000).

The distribution of the number of keywords-subjects in table 4 above, if sorted from most to least, would include the following clusters: first 7 items of keyword-subject (25.93%); second 6 items of keyword-subject (22.22%); third 5 items of keywords (18.52%); fourth 3 items

keyword-subject (11.11%); and fifth, sixth, and seventh with each 2 keywords-subject items (7.41%).

Table 6. Distribution of the Number of Keyword-Subject Items Based on Vosviewer Analysis Results

Gugus (Cluster)	Keyword-Subject (Item)	Percentage (%)
1	6	18,18%
2	5	15,15%
3	5	15,15%
4	4	12,12%
5	4	12,12%
6	3	9,09%
7	3	9,09%
8	3	9,09%
Amount	33	100%

Source: Student Thesis of Civics Education Study Program graduates 2018-2020, DDC (Dewey, 2011), and LCSH (Library of Congress, 2000).

The following clusters would be found in table 3 above if the distribution of the number of keywords were ranked from most to least across eight groupings: The first six keywords-subject items make up 18.18% of the total; the second and third have five keywords-subject items, which make up 15.15%; the fourth and fifth have four, which make up 12.12%; and the sixth through the eighth have three, which make up 9.09% of the total.

Network Visualization

This study was successful in presenting data on the findings of the VosViewer Program Version 1.6.1.7 analysis, which was done in the form of network visualization, keyword-subject in each thesis study program of the Faculty of Social Sciences, Medan State University graduates from 2018 to 2020, as shown on illustration The following image below.
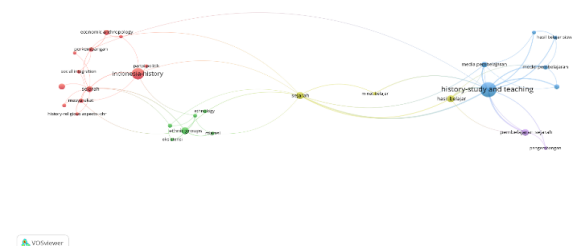
Figure 2: Keyword-Subject Network Visualization with 2018-2020 History Education Study Program Subjects

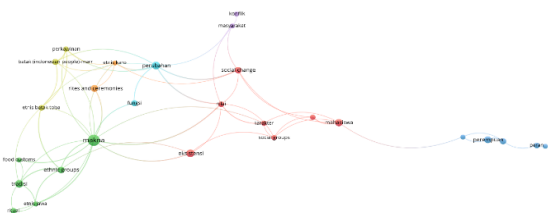Figure 3: Geography Education Study Program 2018-2020 Keyword-Subject Network Visualization

Figure 4: Visualization of the 2018–2020 Anthropology Education Study Program's Keyword–Subject Network
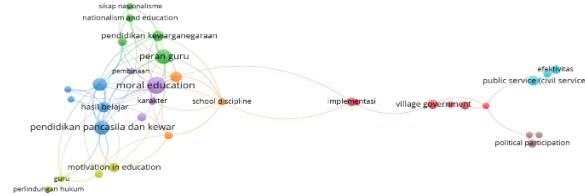

Figure 5: Civics Education Study Program 2018-2020 Keyword-Subject Network Visualization

The images above show the distribution information that this research claims to have discovered, including 5 clusters of keywords-subjects in the thesis of the History Education Study Program, 8 clusters in the thesis of the Geography Education Study Program, 7 clusters in the thesis of the Anthropology Education Study Program, and 8 clusters in the thesis of the Civics Education Study Program, Faculty of Social Sciences. The following table provides details on how patterns (trends) relating the research topics are distributed.

Table 7. Distribution of Trends (trends) Research Topic Links

Kelas DDC	Kata Kunci-Subjek	Gugus (Cluster)	Kejadian (Occurance)	Total Tautan Jaringan	Tahun Peneltian
907	History-Study and Teaching	3	85	92	2019
959.8	Indonesia-History	1	49	9	2018
909.04	Sejarah	4	20	29	2018
306	Ethnic Groups	2	20	13	2018
907	Hasil Belajar	4	19	26	2018
907	Pembelajaran Sejarah	5	17	21	2019
959.8	History-Religious Aspects--Islam	1	13	1	2018
907	Media Pembelajaran	3	12	20	2019
306.3	Economic anthropology	1	11	4	2019

Source: Student Thesis of Students of History Education Study Program 2018-2020 graduates, DDC (Dewey, 2011), and LCSH (Library of Congress, 2000).

Table 7 shows that keywords and subjects are the trend distribution of the study topic links in the 2018–2020 FSS Unimed Graduate History Education thesis: Indonesia-History (907) is in cluster 1 with 49 events and 9 links, History (900) is in cluster 4 with 20 events and 29 links, Ethnic Groups (305.8) is in cluster 2 with 20 occurrences and 13 links, Learning Outcomes (907) is in cluster 4 with 19 events and 26 links, and History Learning (907) is in cluster 5 with 17 events and 21 links. History-Study and Teaching (907) is in cluster 3 with 85 events and 92 links; Economic anthropology (306.3) is in cluster 1 with 11 events and 4 links, Learning Media (907) is in cluster 1 with 12 events and 20 links, and History-Religious Aspects—Islam (959,859 812) is in cluster 1 with 13 occurrences and 1 link.

Table 8. Distribution of Trends (trends) Research Topic Links

Kelas DDC	Kata Kunci-Subjek	Gugus (Cluster)	Kejadian (Occurance)	Total Tautan Jaringan	Tahun Peneltian
910	Analisis	2	37	30	2019
910.71	Teaching-Aids and Devices	5	28	17	2018
915.598 1	Tourism Industry	3	23	27	2019
910.71	Geography-Study and Teaching	1	23	22	2018
910.71	Hasil Belajar	1	22	25	2018
910.71	Mata Pelajaran Geografi	1	14	20	2018
910.145	Objek Wisata Sistem	3	13	25	2019
526	Informasi Geografi	4	13	20	2019
305.5	Economic-Sociological Aspect	3	10	12	2019

Source: Student Thesis of Geography Education Study Program graduates 2018-2020, DDC (Dewey, 2011), and LCSH (Library of Congress, 2000).

The distribution of study topic links in Table 8 of the Geography Education FSS (Faculty of Social Sciences) Unimed Graduates 2018-2020 thesis shows a trend toward keywords and subjects: With 37 events and 30 links, Analysis (910) is in cluster 2, Teaching-Aids and Devices (910.71) is in cluster 5, The Tourism Industry (915,598 12) is in cluster 3, Geography-Study and Teaching (910.71) is in cluster 1, Learning Outcomes (910.71) was in cluster 1, and there were 22 events and 25 links there; Geography Subject (910.71), with 14 events and 20 links, is in cluster 1, followed by Attractions (915.598.12), with 13 events and 25 links, Geographic Information System (526), with 13 events and 20 links, and Economic-Social Aspect (305.5), with 10 events and 12 links.

events and 7 linkages in cluster 1; Female (305.4) had 10 events and 3 links in cluster 3, Rites and Ceremonies (203,859 812) had 10 events and 3 links in cluster 7, Ethnic Group (305.8) had 9 occurrences and 11 links in cluster 2, and Social Change (303.4) had 9 events and 8 links.

Table 9. Distribution of Trends (trends) Research Topic Links

Kelas DDC	Kata Kunci-Subjek	Gugus (Cluster)	Kejadian (Occurance)	Total Tautan Jaringan	Tahun Peneltian
302	Makna	2	27	23	2018
303.4	Perubahan	6	12	16	2018
392.598 12	Tradisi	2	12	9	2018
305.8	Eksistensi	1	12	5	2019
305	Mahasiswa	1	11	7	2019
305.4	Perempuan	3	10	3	2019
203.859 81	Rites and ceremonies	7	10	3	2018
305.8	Ethnic Group	2	9	11	2018
303.4	Social Change	1	9	8	2019

Source: Student Thesis of Anthropology Education Study Program graduates 2018-2020, DDC (Dewey, 2011), and LCSH (Library of Congress, 2000).

Table 9. Illustrates that the distribution of the trend (trend) of research topic linkages in the thesis of Anthropology Education FSS Unimed Graduates 2018-2020 is in the keywords: Change (303.4) is in cluster 6 and has 12 events and 16 links, whereas Meaning (302) is in cluster 2 and has 27 events and 23 links. Tradition (392,598 12) has 12 occurrences and 9 linkages in cluster 2; Existence (305.8) has 12 occurrences and 5 linkages in cluster 1; Student (305) has 11

Table 10. Distribution of Trends (trends) Research Topic Links

Kelas DDC	Kata Kunci-Subjek	Gugus (Cluster)	Kejadian (Occurance)	Total Tautan Jaringan	Tahun Peneltian
907	History-Study and Teaching	3	85	92	2019
959.8	Indonesia-History	1	49	9	2018
909.04	Sejarah	4	20	29	2018
306	Ethnic Groups	2	20	13	2018
907	Hasil Belajar	4	19	26	2018
907	Pembelajaran Sejarah	5	17	21	2019
959.8	History-Religious Aspects--Islam	1	13	1	2018
907	Media Pembelajaran	3	12	20	2019
306.3	Economic anthropology	1	11	4	2019

Source: Student Thesis of Civics Education Study Program graduates 2018-2020, DDC (Dewey, 2011), and LCSH (Library of Congress, 2000).

Table 10 shows that the distribution of the trend (trend) of research topic connections is in the keywords for the FSS Unimed Graduates 2018-2020 Civics Education thesis. Moral Education (370,114) is in cluster 5 with 31 events and 23 links; The Teacher Role (323,607 1) is in cluster 2 with 23 events and 29 links; Pancasila and Citizenship Education (323,607 1) is in cluster 3 with 21 events and 30 links; Citizenship-Study and Teaching (320.71) is in cluster 3 with 19 events and 29 links; With 13 events and 14 links, student (323,607 1) is in cluster number seven; Learning Outcomes (323,607) has 12 events and 22 links in cluster 3, Citizenship Education (323,607) has 12 events and 18 links in cluster 2, Public Service (Civil Service) (352.63) has 11 events and 5 links in cluster 6, and Motivation in Education (323,607) has 10 events and 15 links in cluster 4.

Overlay Visualization
The following graphics provide a visualization of the overlay of keywords and subjects from the theses of graduates from the history education, geography education, anthropology education, and civics education study

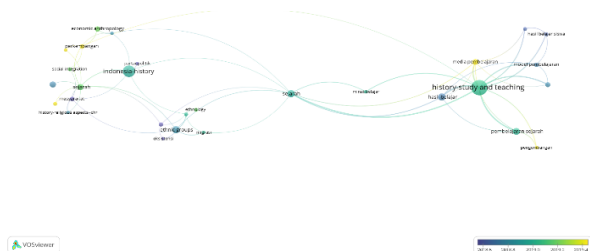programs at Medan State University during the years 2018 to 2020.

Figure 6. Visualization of Keyword Overlays-Subjects of History Education Study Program 2018-2020

The distribution of the research year trend in the History Education FSS Unimed Graduates 2018-2020 thesis is shown in Table 7 and Figure 6, and it can be described as follows: The distribution of the trend (trend) in the year of research for the FSS Unimed graduates' 2018–2020 history education thesis is based on the following keywords and subject: Indonesia-History (959.8) is in cluster 1 with 9 connections studied in 2018, History (900) is in cluster 4 with 29 links studied in 2018, Ethnic Groups (305.8) is in cluster 2 with 13 links studied in 2018, and History-Study and Teaching (907) is in cluster 3 with 92 links researched in 2019; 26 linkages were explored for Learning Outcomes (907) in cluster 4 in 2018; The study of 21 linkages for History Learning (907) in Cluster 5 in 2019; Islam (959 859 812) is in cluster 1 with 1 link researched in 2018 under History-Religious Aspects; 20 links were studied for Learning Media (907) in cluster 3 in 2019; Cluster 1 includes economic anthropology, which had four linkages examined in 2019.
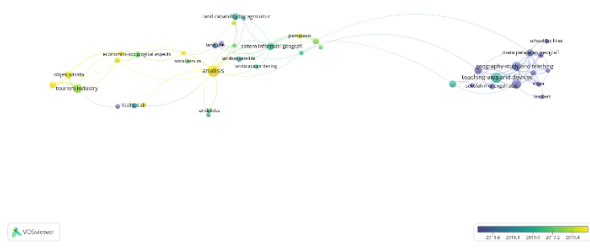

Figure 7. Visualization of Geography Education Study Program 2018-2020 Keyword-Subjects

The distribution of the trend in the research year for the Geography Education FSS Unimed Graduates 2018-2020 thesis may be interpreted as follows, as shown in Table 8 and Figure 7.

The FSS Unimed Graduates' 2018–2020 Geography Education thesis's distribution of the trend (trend) of the research year links is based on the following keywords and subjects: The Tourism Industry (915,598 12) is in cluster 3 with 27 links researched in 2019; Analysis (910) is in cluster 2 with 30 links ever studied in 2019; Teaching-Aids and Devices (910.71) is in cluster 5 with 17 links studied in 2018; Learning Outcomes (910.71) is in cluster 1 with 25 links researched in 2018; Geography-Study and Teaching (910.71) is in cluster 1 with 22 links studied in 2018; Attractions (915,598, 12) are in cluster 3 and have 25 connections examined in 2019, while Geography Subjects (910,71) are in cluster 1 and have 20 links studied in 2018; Economic-Social Aspects is in cluster 3 with 12 links researched in 2019, while the Geographic Information System is in cluster 4 with 20 linkages studied in 2019.
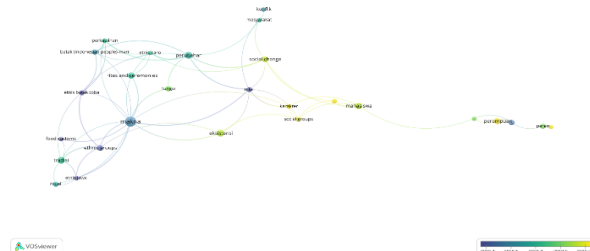

Figure 8: Visualization of Anthropology Education Study Program 2018 - 2020 Keyword - Subjects

The distribution of research year trends in the 2018–2020 FSS Unimed Graduate Anthropology Education thesis are shown in Table 9 and Figure 8, and they may be described as follows: The 2018–2020 FSS Unimed Anthropology Education thesis's trend distribution of the research year link centers on the following keywords: Tradition (392,598 12) is in cluster 2 with 9 links researched in 2018, Meaning (302) is in cluster 2 with 23 links studied in 2018, Change (303.4) is in cluster 6 with 16 links studied in 2018; Existence (305.8) is in cluster 1 with 5 links researched in 2019, Students (305) is in cluster 1 with 7 links researched in 2019, Women (305.4) is in cluster 3 with 3 links researched in 2019, Rituals and Ceremonies (203,859 812) is in cluster 7 with 3 links researched in 2018, Ethnic Group (305.8) is in cluster 2 with 11 links researched in 2018, and Social Change

(303.4) is in cluster 1 with 8 links researched in 2019.
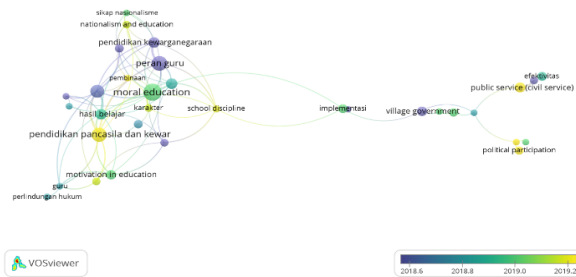

Figure 9: Subjects of the 2018–2020 Civics Education Study Program Visualization of Keyword Overlays

The distribution of the trend for the year of the research on the civics education thesis for FSS Unimed Graduates 2018-2020 is shown in Table 10 and Figure 9, and it can be described as follows: The keywords for the distribution of the trend (trend) in the year of study in the Civics Education FSS Unimed Graduates 2018-2020 thesis are: The function of the teacher (323,607 1) is in cluster 2, with 23 events and 29 links studied in 2018, while moral education (370,114) is in cluster 5 with 31 events and 23 links studied in 2019; Citizenship-Study and Teaching (320.71) is in cluster 3 with 19 events and 29 links studied in 2019; Pancasila and Citizenship Education (323,607 1) is in cluster 3 with 21 events and 30 links studied in 2019. Students (323,607) in cluster 7 have studied 13 events and 14 connections in 2018, whereas learners (323,607) in cluster 3 have studied 12 events and 22 links in 2018. Public Service (Civil Service) (352.63) is in cluster 6 with 11 events and 5 links studied in 2019; Citizenship Education (323,607 1) is in cluster 2 with 12 events and 18 links studied in 2018; and Motivation in Education (323,607 1) is in cluster 4 with 10 events and 15 links studied in 2019.

Density Visualization

In the thesis of the Faculty of Social Sciences, State University of Medan graduates in the years 2018–2020, the findings of the analysis from the VosViewer Program have been successfully displayed in the form of visualization of keyword density, as shown in the picture below.
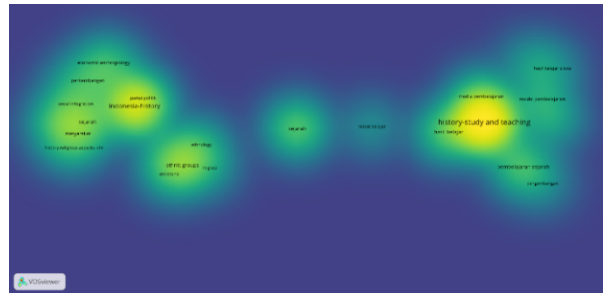

Figure 10. Keyword Density Visualization for the 2018–2020 History Education Study Program
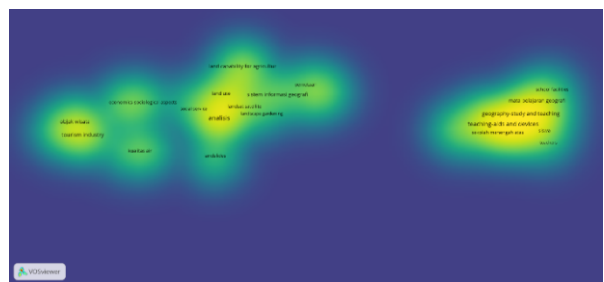

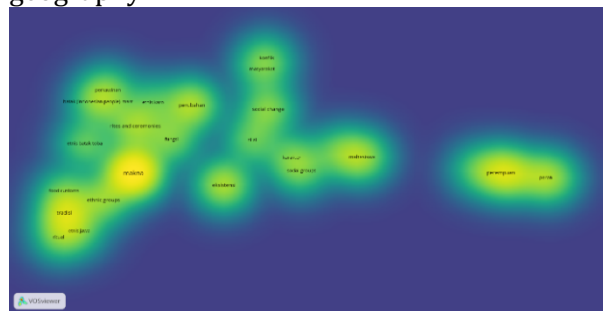Figure 11 displays the keyword density for the subject of the 2018–2020 study program for geography.

Figure 12: Keyword Density Visualization for the 2018–2020 Anthropology Education Study Program
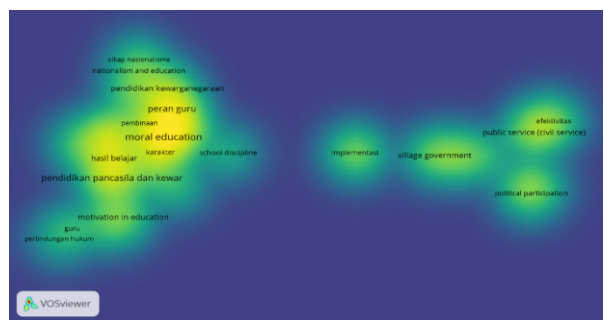

Figure 13. Keyword Density Visualization for the 2018–2020 Civic Education Study Program

Figures 10–13 above give an overview of the keyword density–subject visualization, where a cluster of keywords–subjects is extremely noticeable between two keywords–subjects, is obviously greater in size than the

subject–keyword, and is accompanied by a lighter backdrop color. Because the subject is dense and the background color of the text is lighter than the subject, the visualization really shows that there is a tendency for the volume of research to go toward keywords.

CONCLUSION

From the data above, it can be concluded that based on the Dewey Decimal Classification (DDC) the distribution of the number of fields of knowledge in the thesis of the Faculty of Social Sciences Unimed graduates in 2018-2020 is in Appendix 1. History Education Study Program for research topics is based on the Dewey Decimal Classification (DDC) from position 12 The highest number of the first is in class 907 related to "Education, Research, Related Topics of History" totaling 97 studies (30.41%), while research topics are still little researched at number 12 in class 911 related to "Historical Geography" as many as 6 research (1.88%), and for 38 trends, other research topics may be topics that are already saturated and no longer in demand or indeed those that are still the least researched. If it is still a little researched, it is hoped that it can be material for further research, and as for the other 38 themes, they can be the least researched or ones that have previously been well explored but are no longer in demand. If there is still room for more investigation, it is hoped that it will serve as a starting point.

Appendix 2. Geography Education Study Program with the most research topics, according to the Dewey Decimal Classification (DDC), from the top 11 positions, with the most number of first being in class 910.71 related to "Geography of and Travel;" amounted to 82 studies (22.16%), while research topics were still sparsely researched at number 11 in class 577.6 related to "Aquatic Ecology," as many as 6 studies (1.62%), and for 39 trends other research topics If there is still room for more investigation, it is hoped that it will serve as a starting point.

Appendix 3. Anthropology Education Study Program with the most research topics based on the Dewey Decimal Classification (DDC) from the top 11 positions, with the most first being in class 305.8 related to "Existence" totaling 17 studies (5.74%), while the least researched in class 306,432 related to "Social

Sciences; School and Society" with as few as 6 studies (2.03%). For the 39 trends, other research topics could be topics that are already saturated and no longer relevant. If there is still room for more investigation, it is hoped that it will serve as a starting point.

Appendix 4. Civics Education Study Program with the most research topics based on the Dewey Decimal Classification (DDC) from the top 15 positions with the most first being in class 323,607 1 related to the topic "Citizenship Education" totaled 59 studies (44.36%), while research topics are still sparsely researched at number 15 in class 370,115 related to "Education for Social Responsibility" with as few as 5 studies (3.76%), and for 35 other research topic If there is still room for more investigation, it is hoped that it will serve as a starting point.

29 keywords and subjects were effectively visualized in 5 clusters using a keyword-subject analysis in the History Education Study Program utilizing Vosviewer on the occurrence of keywords and subjects at least twice. The keywords and themes that appeared the most frequently were "History-Study and Teaching," which appeared three times in cluster 3 and had a total of 92 network links. 41 keywords and subjects were successfully visualized in 8 clusters for the Geography Study Program's Keyword Analysis utilizing Vosviewer on the occurrence of keywords and subjects at least five times. The cluster 2 keyword and subject with the highest frequency was "Analysis," which appeared there twice and in a total of 30 network links. 27 keywords were successfully visualized in 7 clusters in the Anthropology Education Study Program's keyword analysis using Vosviewer for a minimum of 5 keyword occurrences (clusters). The keyword "Meaning," which appeared twice in cluster 5 and in a total of 23 network links, was the most often occurring one. Vosviewer was used for a minimum of five keyword occurrences in the Civics Education Study Program's keyword analysis, and it was successful in visualizing 33 keywords in 8 clusters (clusters). With a total of 23 network links, cluster 5 contains the keyword "Moral Education," which appears there 31 times.

The most common research trend in the History Education Study Program is "History-Study and Teaching," and research is frequently conducted in 2019 with varied

research volume density. The trend of the most common research topic for the Geography Education Study Program is "Analysis," and the year of research is frequently conducted in 2019, with varying research volume densities. Education Study Program in Anthropology The trendiest study topic is "Moral Education," and research on it is frequently conducted in 2019 with varying research volume densities. The trend of research topics in the Civics Education Study Program is the most in demand: "Moral Education", and the year the research is often carried out is 2019, with varying research volume densities.

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