

Content analysis of defended master theses at the Faculty of Educational Sciences in Sarajevo, Bosnia and Herzegovina

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Abstract

Current trends in educational sciences can best be evaluated by assessing the master and doctoral theses defended at the universities. The goal of the present paper was to do a qualitative content analysis of the titles of master theses defended at the Faculty of Educational Sciences at the University of Sarajevo, Bosnia and Herzegovina. Total of 393 master theses defended in the period from 2012 to 2021 were the subject of this analysis. Of these, 287 were defended at the department for teacher education and 106 at the department for preschool education. As expected, most of the studies dealt with early elementary school students and preschool children. Many studies contained the term “development” in its title, and it was referring to all domains from speech to socio-emotional and motor development. Several studies examined parental and teachers’ attitudes towards various topics. In relation to the subject, most studies dealt with science education, followed by physical education and language. A number of studies had special education as the main topic, covering issues of teacher competencies, creativity, support to students with developmental disabilities, to the quality of life. Students have studied various relevant topics. In the future, we expect to see an increase in studies covering digital competencies of teachers and evaluation of online education.

Key words: Master theses, educational sciences, trends, content analysis

Introduction

Universities throughout the world have a role of generators and disseminators of knowledge (Fischer et al., 2018). A large part of knowledge production at the universities comes from the joint research efforts of students and their university' teachers. This collaboration often results in the master or doctoral theses which ideally will be published in the form of a scientific article. Even if unpublished, a master or doctoral theses will serve to the future generations of students as a great source of knowledge. One of the best predictors of academic success at the university is earlier academic performance (van der Zanden et al., 2018). On average students with better academic skills in elementary school tend to have better academic outcomes at the university.

A profession that is responsible for preparing children for higher-order thinking and intellectual work is the teaching profession (Darling-Hammond, 2006). Knowledge-based economies caused many countries to engage in reforms of educational systems, especially in the area of improving teacher education (Darling-Hammond, 2005). Thus, today's teachers need to be prepared for challenges they will confront in 21st century and be able to use research and evidence to improve their own professional practice (Wolkenhauer & Hooser, 2021). One of the countries often cited to have one of the best educational system is Finland (Morgan, 2014). One of main mission of teacher education programs in Finland is preparing the teachers for research-based professionalism (Westbury et al., 2005). Given the importance of research, the issue of turning educational practitioners into educational researchers was examined in American schools as well (Labaree, 2003). There are several arguments on why it is important and useful for teachers to gain research competencies (Keating et al., 1998): 1. Teachers are most familiar with the classroom setting and students; 2. Teachers who have problem-solving mind are suitable for this endeavor; and 3. The potential for data gathering is great.

However, the best avenue for preparing teachers to be action researchers is at the universities, within the teacher preparation programs. Most universities require prospective teachers to conduct a research and defend it in the form of master theses. In this way, much scientific knowledge regarding educational topics is gathered. However, in spite of this great production of knowledge, there are few studies that qualitatively assessed what this research is all about. An exception are the papers published in scientific journals, but unfortunately much of the research conducted for master theses remains unpublished. Thus, the goal of the present paper is to do a content analysis of titles of master theses defended at the Faculty of Educational Sciences at the University of Sarajevo, Bosnia and Herzegovina. Through this analysis, we will gain a deeper insight into the research topics of interest to prospective teachers.

Methods

Total of 393 master theses were defended at the Faculty of Educational Sciences at the University of Sarajevo in the period between January 2012 and June 2021. Out of those, 287 were defended at the department for teacher education and 106 at the department for preschool education. The content of the titles of master theses was analyzed. We used a summative content analysis in which we quantified the usage of certain words and terms and interpreted the content (Hsieh & Shannon, 2005; Memišević & Đorđević, 2020). Similar method was used in previous studies (Demirok et al., 2016). The results were presented in the tables through the most frequent

terms and phrases. We also presented the results through the word cloud which is a simple and efficient way to visually represent the most frequent words (Lohmann et al., 2015). Although, originally in Bosnian language, we translated all the terms and presented them in English language.

Results

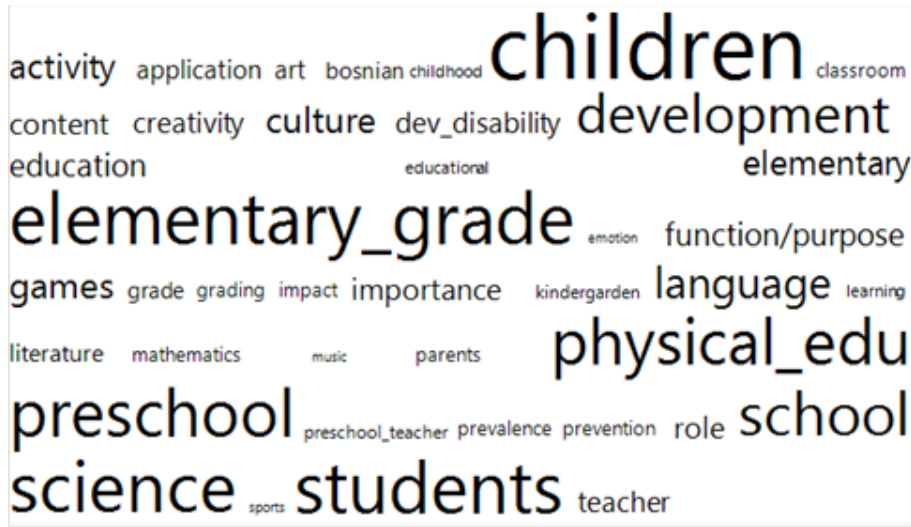
We first present the most frequent terms in the titles of master theses. We did not include prepositions such as “in”, “to”, “on” etc. in the analysis. These results are presented in Table 1.

Table 1. The most frequent words and terms in the titles of master theses defended at the Faculty of Educational Sciences

n	Term	Count	n	Term	Count
1	children	114	21	creativity	22
2	elementary_grade	85	22	application	20
3	students	82	23	art	19
4	science	81	24	literature	18
5	preschool	73	25	bosnian	16
6	physical_edu	71	26	grade	16
7	school	64	27	grading	14
8	development	56	28	impact	14
9	language	41	29	mathematics	14
10	games	32	30	parents	14
11	culture	31	31	prevalence	14
12	elementary	29	32	classroom	13
13	activity	28	33	prevention	13
14	education	26	34	kindergarten	12
15	function/purpose	26	35	preschool_teacher	12
16	content	25	36	educational	11
17	importance	25	37	learning	11
18	role	24	38	childhood	10
19	dev_disability	23	39	emotion	9
20	teacher	23	40	music	9

As can be seen from Table 1. the most common terms in the title of master theses are children, elementary school, and students. In Figure 1. we present the word cloud of the most frequent terms.

Figure 1. Word cloud of the most frequent terms contained in the titles of Master theses defended at the Faculty of Educational Sciences

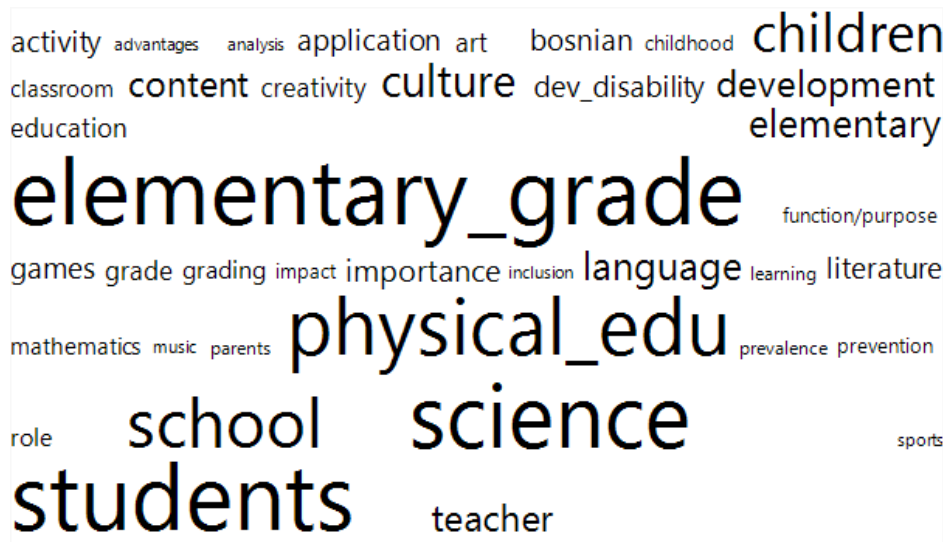


We next performed the content analysis in relation to students' department that is department of teacher education and department of preschool education. The most frequently used terms for the department of teacher education are presented in Table 2 and Figure 2.

Table 2. The most frequent words and terms in the titles of master theses defended at the Department of Teacher Education, Faculty of Educational Sciences

#	Term	Count	#	Term	Count
1	elementary_grade	85	21	creativity	15
2	students	82	22	education	15
3	science	81	23	grade	15
4	physical_edu	66	24	grading	13
5	school	55	25	role	13
6	children	39	26	classroom	12
7	culture	31	27	mathematics	12
8	elementary	26	28	prevention	11
9	language	26	29	childhood	10
10	development	24	30	function/purpose	10
11	teacher	23	31	impact	10
12	content	22	32	learning	9
13	importance	19	33	parents	9
14	application	17	34	prevalence	9
15	dev_disability	17	35	sports	8
16	games	17	36	advantages	7
17	activity	16	37	analysis	7
18	bosnian	16	38	inclusion	7
19	literature	16	39	music	7
20	art	15	40	reading	6

Figure 2. Word cloud of the most frequent terms contained in the titles of Master theses defended at the Department of Teacher Education, Faculty of Educational Sciences



The most frequently used terms for the department of preschool education are presented in Table 3 and Figure 3.

Table 3. The most frequent words and terms in the titles of master theses defended at the Department of Preschool Education, Faculty of Educational Sciences

#	Term	Count	#	Term	Count
1	children	75	21	family	5
2	preschool	69	22	impact	4
3	development	32	23	emotion	4
4	function/purpose	16	24	art	4
5	language	15	25	elementary	3
6	games	15	26	content	3
7	preschool_teacher	12	27	competencies	3
8	kindergarten	12	28	application	3
9	activity	12	29	social	2
10	role	11	30	quality	2
11	education	11	31	prevention	2
12	school	9	32	personality	2
13	educational	7	33	music	2
14	creativity	7	34	motivation	2
15	partnership	6	35	mathematics	2
16	importance	6	36	literature	2
17	dev_disability	6	37	learning	2
18	prevalence	5	38	didactics	2
19	physical_edu	5	39	autism	2
20	parents	5	40	sports	1

Figure 3. Word cloud of the most frequent terms contained in the titles of Master theses defended at the Department of Preschool Education, Faculty of Educational Sciences



Discussion

The goal of the present paper was to conduct a content analysis of the Master theses titles defended at the Faculty of Educational Sciences, University of Sarajevo. Although, there are various methods for content analysis, we opted for the titles analysis as it provides the most relevant information regarding the topics students chose to explore. Topics that were explored by the students were in the full sense multidisciplinary covering numerous scientific disciplines such as psychology, pedagogy, special education, economy, medicine, nursing, and many others. As was expected, in relation to age groups, most studies dealt with elementary school children and preschool children. Some of the titles' examples are: 1. School readiness of children who attended preschool institutions; 2. Psychological aspects of communication with elementary school children. We next analyzed the theses titles in relation to the school subject. Majority of studies dealt with science and science education. It is important to note that in early grades of elementary schools in Bosnia and Herzegovina, students have the subject entitled "Science" (literal translation of the Bosnian term "Moja okolina" would be "My environment"). In the early grades (1-4 elementary school grades) the subject Science covers both, social sciences and natural sciences. The examples of titles containing the term of subject "science" are:

1. Understanding the basic notions in science education;
2. The application of experiment in science classes;
3. Advantages and disadvantages of descriptive grading for the subject science;
4. Cooperative learning in science education;
5. The importance of introductory part of the lesson in science education.

As is evident from this short list, the topics explored are broad, relevant, and important. It is very encouraging that Science was one of the main topics that students- future teachers- explored. Research has shown that early elementary grades are the pivotal point for the development of science learning trajectories (Curran & Kitchin, 2019). Quality of science education provided at early grades (1 to 3) predicts later science achievement (Kaderavek et al., 2020). Thus, we hope our prospective teachers will continue their professional development in this field and provide children with best instructions possible.

The second-ranked school subject that received most research attention was Physical education (PE). Some of the titles of master theses containing PE in its title are:

1. Physical education as a means to develop basic motor skills in elementary grade students;
2. Injuries and prevention of injuries in physical education classes;
3. Sports games as a content of physical education in elementary school;
4. Individualized Education Programs in physical education classes for children with developmental disabilities;
5. The attitudes of teachers and students about implementation of physical education classes.

Again, judging from the titles, students have examined very interesting topics. According to the school curricula in Bosnia and Herzegovina, children have PE classes three times per week. It is much less than health recommendations that preadolescent children need to have daily school PE classes that engage children in at least moderate physical activity at least 50% of class time (Nader et al., 2003). The importance of PE cannot be overstressed. Research has shown that school-based PE programs help students engage in regular physical activity and acquire habits necessary for an active lifestyle. In addition PE helps in preventing medical conditions such as obesity (Troost & van der Mars, 2009).

The third-ranked school subject in the list of master theses was Language. The official languages in Bosnia and Herzegovina are Bosnian, Serbian, and Croatian language. Although widely regarded as the versions of the same language, they are called differently depending on the geographic area and nationality of the speakers. In some parts of the BiH, this subject is named either Bosnian language, or Serbian language or Croatian language, while in other parts (such as Sarajevo) the school subject is named: Bosnian, Serbian, and Croatian language and literature. Some of the examples of master theses titles containing the subject Language are:

1. Jargonism and its status in Bosnian language;
2. Creativity in elementary grade students in the subject Bosnian, Serbian, Croatian language and literature;
3. Adverbs in Bosnian language;
4. The prevalence of language disorders in early elementary school students
5. Germanisms in Bosnian language.

Students have investigated various language topics, from grammar and vocabulary to language disorders. However, we noticed a lack of certain language topics that are the subject of broad scientific interest. For example, there were no studies that examined language in some minority groups although it is a hot topic world-wide (Goldenberg, 1996; Rjosk et al., 2015). Additionally, no studies were conducted in relation to language learning in relation to student' socio-economic status, again a topic of wide scientific interest (Hoff, 2003; Schwab & Lew-Williams, 2016).

These three topics related to subjects (science, physical education, and language) were master theses at the department of teacher education. As for the department of preschool education, the most frequently used word, after children and preschool, in the titles was the word “development”.

Here are five master theses titles containing the word “development”:

1. Didactic games in the function of development of preschool-aged children;
2. Socio-emotional development through the integrated preschool curriculum;
3. Motivating the development of speech in preschool-aged children;
4. Toys and the cognitive development of preschool children;
5. The role of early experiences in the development of personality.

From the example provided, we can see that students have studied all developmental domains important for the preschool age. Given the importance of early learning and development, it is worthy to examine such topics. Early preschool education has been widely regarded as the great equalizer and can be used to minimize the social differences in learning outcomes (Cebolla-Boado et al., 2017). International research has unanimously shown the large benefits of preschool education, across developmental domains, outcomes, and across cultures (Ansari, 2018; Morgan, 2019; van Huizen et al., 2019). Unfortunately, the number of children attending preschool institutions in Bosnia and Herzegovina is very small and is estimated at around 12% (Zečević & Memišević, 2016). Thus, it would be beneficial if some future studies deal with the interventions aimed to increase the number of preschool children in Bosnia and Herzegovina and ways how to make preschool education available to all children.

Another big topic that was mainly investigated at the Department of Preschool Education are the games. Here is the list of five master theses containing the word play s in its title:

1. Games in the function of socio-emotional development;
2. Constructive games aimed at preschool development;
3. Children games and early learning of English language;
4. The impact of language games on the language development in 4 and 5-year-old children;
5. Board games in service of learning math.

Games are vital to preschool development. Children learn through the play. Play and games affect all areas of children’s’ development, improving social, communication, and cognitive skills (Evaldsson & Corsaro, 1998). It is encouraging to see many master theses devoted to this topic. Next, we will mention topics related to the education of children with developmental disabilities. Examples of the master thesis titles are:

1. Professional development of elementary school teachers in the area of work with children with development disabilities;
2. Socio-metric status of students with developmental disabilities in elementary schools;
3. Quality of life of parents of children with developmental disabilities in Canton Sarajevo;

4. Acceptance of children with developmental disabilities in preschool institutions;
5. Competencies of preschool teachers to work with children with developmental disabilities.

Again, various topics were investigated in relation to children with developmental disabilities, from professional development and competencies of teachers to quality of life. These topics were the subject of current international literature as well. There are studies examining how elementary school teachers can increase their involvement and develop better interventions, implement intervention components and deliver class instruction to students with developmental disabilities (Kuntz & Carter, 2021). A plethora of studies have examined quality of life of parents of children with disabilities (Misura & Memisevic, 2017; Staunton et al., 2020).

Lastly, we present another topic that received a substantial interest from the students and that is the topic of creativity. Examples of master thesis titles are:

1. Creative approach to the interpretation of literature pieces;
2. Creative children games aimed at learning numbers;
3. Giftedness, creativity, and talent in the arts classes;
4. Creativity in the group work in science classes;
5. Fostering creativity in elementary grade students.

Generally, identification and assessment of creativity are hot topics (Kaufman et al., 2012; Shively et al., 2018) and in-training teachers are aware of it. These theses indicate the field of creativity will be in the focus of future teachers and hopefully creative students will receive proper, effective and individualized educational programs.

We have explored the most used words in the titles of master theses defended at the Faculty of Educational Sciences' departments for teacher education and preschool education. Unfortunately, due to space constraints, many interesting topics were not investigated. As mentioned in the introduction, today's teachers need to have research skills in order to improve their own practice. Students in their final year of their teacher graduate school program at the Faculty of Educational Sciences attend four modules: Academic writing, Development and curriculum evaluation, Contemporary didactic methods, and Research methodology (Čehić et al., 2018). We believe these modules significantly raise their competencies at conducting and evaluating research. It is encouraging to see that students explore some hot topics and set trends for future research.

Of course, we also identified some of the areas in need of further research as the existing research is scant. For example, there were only three theses containing the word online in its title, and they are all from 2020 and 2021. Prior to COVID-19 crises, there were no studies that examined online teaching. No doubt this soon will be changed, and in the future we will see more theses on this topic as well.

This study is not without limitations, and we will mention some of them. First, we evaluated studies at face value only without conducting a deeper analysis of the studies. A deeper analysis would

include a content analysis of the abstracts and full texts as well. Next, we did not assess whether the study used quantitative or qualitative research methods, sampling methods, what statistical techniques were used for the data analysis etc. These information would be informative in designing future studies. Finally, many important topics were not evaluated at all, such as motivation, arts, and music, among the others. We hope future studies will at least partially close these gaps.

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