69

ISSN 2309 3455

Social Studies

Studime Sociale

Vol. 18, No. 5 (69), 2024

Fatjona HAKA • Valbona NATHANAILI
• Senada DULI TUFINA • Bujanë TOPALLI • Edlira XEGA
• Juliana ÇYFEKU • Matilda VELIU • Lediana XHAKOLLARI
• Drimona GJINI • Adelina KASEMI • Edlira DYRMISHAJ
• Anisa HAXHOSAJ • Kristaq KUME
• Mirlinda BUNJAKU • Sevdije SADIKU

www.sociology.al

AIS
Albanian Institute of Sociology

“Social Studies” Journal is classified ‘Scientific’ by ANVUR

The journal “Social Studies” is classified as Scientific Journal by ANVUR, the National Agency for the Evaluation of the University System and Scientific Research of Italy - Ministry of Education, Universities and Scientific Research of Italy (MIUR), by decision no. 298, dated 21 December 2021.

The application was made in 2020 by Romina GURASHI (PhD) - from “Sapienza” University of Rome, Deputy Editor of the journal “Social Studies”.

Since 2020, ANVUR has monitored the journal “Social Studies” with international experts, and the official response has been returned by Dott. Marco Malgarini, director of ANVUR, on 19 January 2022.

La rivista “Studi Sociali”
è classificata ‘Scientifica’ dall’ANVUR

La rivista “Social Studies” è classificata ‘scientifica’ dall’ANVUR, Agenzia Nazionale per la Valutazione del Sistema Universitario e della Ricerca Scientifica d’Italia - Ministero dell’Istruzione, dell’Università e della Ricerca Scientifica d’Italia (MIUR), con decisione n. 298, del 21 dicembre 2021.

La richiesta è stata presentata nel anno 2020 da Romina GURASHI (PhD), dell’Università La Sapienza, Vicedirettore della rivista “Studi Sociali”.

Dal 2020 ANVUR segue con esperti internazionali la rivista “Social Studies” e la risposta ufficiale è stata data dal Dott. Marco Malgarini, il Dirigente Area Ricerca ANVUR, il 19 gennaio 2022.

Revista “Studime Sociale”
klasifikohet si revistë shkencore nga ANVUR

Revista “Studime Sociale” është klasifikuar si revistë shkencore nga ANVUR, Agjencia Kombëtare e Vlerësimit të Sistemit Universitar dhe Kërkimit Shkencor të Italisë - Ministria e Arsimit, Universiteteve dhe Kërkimit Shkencor (MIUR), me vendim no. 298, datë 21 dhjetor 2021.

Aplikimi është bërë në vitin 2022 nga Romina GURASHI (PhD), Universiteti La Sapienza Romë, njëherësh Deputy Editor e revistës “Studime Sociale”.

Nga viti 2020, ANVUR ka monitoruar me ekspertë ndërkombëtarë revistën “Studime Sociale” dhe përgjigja zyrtare është kthyer nga Dott. Marco Malgarini, drejtor i ANVUR, më 19 janar 2022.

SOCIAL STUDIES [STUDIME SOCIALE]

Vol. 18, No. 5 (69), 2024

Design: **Orest Muça**

"Social Studies", Scientific Journal, certified by the Highest Scientific Committee, Ministry of Education and Science of Albania

Decision no. 170, date 20th of December 2010

Contacts:

Mobile: ++355692044722; ++355694067682

E-Mail: albsa@sociology.al; studime.sociale@gmail.com

www.sociology.al

Contents:

How much science do we teach our undergraduate preschool student-teachers?

A National Comparison

Valbona NATHANAILI
Logos University College, Albania
Department of Pedagogy-Psychology
E-mail: valbona.nathanaili@kulogos.edu.al

Abstract[1]

Drawing on a national comparison of study-guides, this study aims to compare the number of compulsory natural sciences courses, the course names, and their ECTS, in searching for any common model, regularity or principle used to construct the "Bachelor's degree in Teacher in Pre-School Education" curricula from different Higher Education Institution (HEI) in Albania; the data are complete with the case of Democritus University of Thrace (DUTH), Greece, and University "Hasan Prishtina", Prishtina, Kosovo which were evaluated as samples of international representatives in region. The data collected from on-line official websites of 9 Higher Education Institutions in Albania, public and private, revealed that 8 out of 9 offer this study program; 1 out of 8 has not any study-guide published on-line; 2 out of 8 offer 0 courses of natural sciences; 2 out of 8 offer one full course of natural science, with approximately the same credits (respectively 11 ECTS and 15 course ECTS), the same approach that is used by DUTH, too. However, the science course offered by DUTH has 4.5 ECTS; 2 out of 8 offer courses in natural sciences and courses in didactics of science, but the later one can be found under a new name – *science* is replaced by "*knowledge about science*", at

[1] This paper is presented in the International and Interdisciplinary Conference "Well-being in Challenging Times" (4th Annual Conference of Centre for School Leadership (CSL – AADF) that has been held at the AAB University College of Pristine Kosovo, on November 15-16, 2024; Proceedings, pp. 16-17; link: https://www.sociology.al/sites/default/files/19th%20International%20Conference%20Proceedings%20AAB%20Pristine%202024.pdf

both HEIs, a term or a concept entirely unknown at university level; 1 out of 8 offer only didactics of natural sciences. The main conclusion is that the current landscape of science courses in those program studies provide no option to formulate any common regularity or principle or to describe any model. We can only speculate about the many differences in science courses within this study program, highlighting the absence of a national debate on the preparation of preschool teachers and the need for national cooperation to introduce a new perspective for this program.

Key words: *natural sciences, preschool, teachers, curricula, principles*

Dr. **Valbona NATHANAILI** is a lecturer at the department of pedagogy-psychology at LOGOS University College, Tirana, Albania. She is a Bachelor in physics and a doctoral degree holder in the science of pedagogy, both from University of Tirana. At the undergraduate level, at LOGOS, she taught the methodology of teaching science, physics, teachers' professional ethics, and democracy and citizenship. Major areas of research over the last few years are the politics and reforms in Albanian Education System, education under occupation, methodology of teaching science, university pedagogy, science and religion, the future of schooling and internationalization of HEIs. She was previously based at the European University of Tirana, where contributed to a range of different duties and chaired publishing department. She is analyst, writers and contributor for different periodic Albanian newspaper and television outlets. Some sole authored books: "The arduous path of Albanian school: issues, policies & activities in the field of education, 1912-1944" (2016) and "Our ambassadors. The meeting point of diplomacy with creativity" (2014). Latest publication: Nathanaili, V. (2023). Professional passive practice mentoring system in study program 'Teaching for pre-school education' in Albanian HEI-s. European Early Childhood Education Research Journal, 32(2), 192–207. https://doi.org/10.1080/1350293X.2023.2247590; Nathanaili, V. (2023) Education in Albania under the Italian Occupation, International Journal of Educational Development, Volume 103, 2023, 102896, ISSN 0738-0593, https://doi.org/10.1016/j.ijedudev.2023.102896

In times of prosperity, the assumption is that more funds are available for schools to make them more qualitative, but that does not necessarily mean more qualitative students attend teaching study programs to become teachers – the opposite is most often real. On the other hand, there is clear evidence that teachers have a great impact on student performance, though little has been done from a comprehensive point of view to examine the requirements, processes and procedures in the preparation of science teachers (Pederson et al., 2017: VII).

In this paper, the focus is narrower: to examine the preparation of teachers-students to teach natural sciences at preschool. Teaching science in preschool presents a significant challenge within the Albanian public education system. Generally, teachers lack confidence in engaging children in scientific activities. Recently, during a visit to a kindergarten in Tirana with a group of students, I conducted an experiment with children. When I asked, "What is baking soda used for?" only 1 out of 40 children responded, saying "to wash clothes". Additionally, many of them experienced the smell of vinegar from an open bottle for the first time. More importantly, the children were unfamiliar with the concept of an experiment – they asked for the meaning. But the concern seems not to be local. Many early childhoods teachers do not have a strong background in science to support inquiry-teaching practices (Englehart, 2014: 221).

The Bachelor's degree in Teacher in Preschool Education is a study program in higher education that prepares teachers, who are expected to possess knowledge spanning various disciplines such as literature, music, foreign languages, computer, mathematics, science, as well as pedagogy and psychology.

In essence, the study program involves a broad spectrum of knowledge from multiple fields. Research has shown that undergraduates planning to teach elementary grades do not feel confident about the prospect of teaching science (Heaston, Marcum, 2012: 247). The same authors give those reasons: insufficient content knowledge, lack of enjoyment of science classes in school, lack of positive experiences in science during their schooling, and an expressed fear from science (*Ibid*).

While universities face challenges in accommodating this diverse curriculum, so do teachers in service, particularly in their early years on the job. It takes time to learn to be a teacher (Abell, 2002: 3). In an effort to enhance primary teachers' background in science and to equip them with the tools necessary to improve their skills in science teaching, the Italian Ministry of Education in 2002, launched a national plan for professional development of in-service elementary school teachers with a duration of five years.

Since early childhood teachers are considered "generalists" (Englehart, 2014: 222), they may not have a strong scientific background with which to support teaching for conceptual understanding, including science inquiry practices. The encouraging news is that every profession comes with its initial challenges. Furthermore, it is important to recognize that all teachers, regardless of their level of education, initially struggle with self-confidence as they embark on their journey towards professional growth. This argument is not simply a way to boost self-confidence and encourage greater involvement in scientific activities with children; it underscores the idea that learning is an ongoing process. We learn as students, and we continue to learn throughout our careers. Among various professions, teachers stand out as the reference point of lifelong learners.

Studies that promote introduction of science in preschool education propose that early familiarization of children with scientific language positively affects the development of scientific concepts and, thus, critical thinking. Early science learning opportunity allows children to develop their basic science inquiry skills, as well as understand fundamental scientific concepts, laying the foundation for the subsequent understanding of more complex science concepts (Trundle and Saçkes, 2012: 240). Young children enjoy exploring and researching the environment around them and if this natural inclination is nurtured with the help of science activities, their interest in these topics can be greater later on (Howitt, 2021: 93). When teaching science to children of this age, we must take into account that children learn through play, exploration, observation, experimentation, conversation and questioning. On the other side, scientific knowledge is abstract. Teachers have the duty to fill the gap between the abstract sciences knowledge and how children learn through their teaching design.

Methodology

Drawing on a national comparison of study-guides, this study aims to compare the number of compulsory natural sciences courses, course names, and the respective ECTS in search for any common model, regularity or principle used to construct the bachelor preschool curricula from different Higher Education Institution (HEI) in Albania; the data are complete with the case of Democritus University of Thrace (DUTH), Greece, and University "Hasan Prishtina" of Pristina, Kosovo, which were evaluated as an international representatives sample in region. The case study is the study program Bachelor in Preschool Teaching.

For the purposes of this paper, science courses are considered only those that fulfil the following criteria:

- are compulsory;
- are at least a semester long;
- focus on the specific science content knowledge (physic, biology and chemistry)
- focus on the pedagogical content knowledge (methodology and didactic) of science (physic, biology and chemistry)

The research model includes four sets of data, all derived from official webpages of HEIs:

- Natural Science courses data, focusing on the specific science content (physic, biology and chemistry), which included the number and distribution through semesters/years and the corresponding credit units: based on the study program curriculum of each HEI.
- Natural Science Courses data focusing on the pedagogical content knowledge (foundational competences in methodology and didactic), that support student-teachers in the specific teaching practices of science; which included, the number and distribution through semesters/years of compulsory courses and the corresponding credit units: based on the study program curriculum of each HEI.
- The analytical program of studies: exploring how the study program curriculum of each HEI is structured, focusing on whether the study guide description reflects this analytical approach.
- The faculty and department that offer study program in preschool: based on the organisational structure of the HEI.

The data were compared to identify any common models, patterns, or principles used to structure the bachelor's preschool curricula across different Higher Education Institutions (HEIs) in Albania. To have a regional approach, the same data were collected from Greece, for which the case study was Democritus University of Thrace, and also from Kosovo, for which the case study was University "Hasan Prishtina" of Pristina.

The very first step was scanning all the Albanian HEIs that offer bachelor degree in preschool teaching and their study guide, too. Their official websites were used in the first stage. The similarities and differences between the study programs were then identified.

Research questions

- How many natural science courses, along with their ECTS credits, are included in the bachelor's degree program in Teacher in Preschool Education?
- Does the study program curriculum of the HEI contain an analytical program?
- Which faculty (and or department) offers the study program in preschool teaching?

Sample

Data were collected from the official website of nine Albanian higher education institutions and one in Kosovo; in the case of Democritus University of Thrace, Greece, the data were collected based on study guide of academic year 2021-2022, made available during a study visit at this university.

Data

For the first research question, "How many natural science courses, along with their ECTS credits, are included in the bachelor's degree program in preschool teaching?", the data were structured in table 1. In the same table, italics are used to highlight the differences between courses in science and courses in methodology/ didactics of science.

Table 1: *National and international Comparison of Science Courses*

Bachelor's degree in Teacher in Preschool Education					
Name of Higher Education Institution	Characteristics: The number and distribution of natural sciences compulsory courses - in semesters of study - and the corresponding credit units				
	Second year	Third year			Fourth year
	4th Semester	5th Semester		6th Semester	8th Semester
1. University "Aleksandër Xhuvani" of Elbasan	Natural Sciences: 4 ECTS	Didactic of knowledge about nature: 4 ECTS		0	N/A
2. University "Luigj Gurakuqi" of Shkodra	0 0	Didactic of Natural Sciences, Chemistry and Physics: 5 ECTS		Didactic of Natural Sciences, Biology and Geography: 5 ECTS	N/A
3. University "Fan S. Noli" of Korca	0	Theory and problems in biology and chemistry: 7 ECTS		Theory and problems in physics: 4 ECTS	N/A
4. University "Ismail Qemali" of Vlora	Curricula couldn't be found on line				
5. Albanian University	0	Basic knowledge of natural sciences & health education: 15 ECTS			N/A
6. Mediterranean University of Tirana	0	0			N/A
7. University "Aleksandër Moisiu" of Durres	0	0			N/A
8. LOGOS University College		Natural Sciences (3 Modules: Physics, Chemistry & Biology); Total: 4.5 ECTS		Didactic of knowledge about nature: 4.5 ECTS	N/A
9. European University of Tirana	Don't offer study program in teaching in preschool.				
10. Democritus University of Thrace, Greece	0	0		Teaching and Learning of Science for Early Childhood: 4.5 ECTS	0
11. University "Hasan Prishtina" of Pristine, Kosovo (UP, 2019)	0	Experiment in early childhood: 4 ECTS	Biology for educators: 4 ECTS		Methodology of natural sciences: 6 ECTS

Table 2: *Analytical program: Does the study program curriculum of the HEI contain an analytical program?*

Bachelor's degree in Teacher in Preschool Education	
Name of Higher Education Institution	Characteristics: analytical program of studies
1. University "Aleksandër Xhuvani" of Elbasan	No
2. University "Luigj Gurakuqi" of Shkodra	Yes, based on the category of subjects taught
3. University "F. S. Noli" of Korça	No
4. University "Ismail Qemali" of Vlora	No
5. Albanian University	No
6. Mediterranean University of Tirana	No
7. University "Aleksandër Moisiu" of Durres	No
8. LOGOS University College	No
9. European University of Tirana	Don't offer study program in Teacher in Preschool Education.
10. Democritus University of Thrace, Greece	Yes, based on the subject group.
11. University "Hasan Prishtina" of Prishtina, Kosovo[2]	No

For the second research question, "Does the study program curriculum of the HEI contain an analytical program?", the data were structured in table 2.

For the second research question, "Does the study program curriculum of the HEI contain an analytical program?", the data regarding Democritus University of Thrace, Greece were structured in Table No. 3. Analytical Program of Studies (for 2017-18 Admissions onwards) at Democritus University of Thrace, Greece, includes the titles of compulsory courses, elective courses and optional courses. Courses based on their scientific subject have been organized in groups, as follows (table 3).

For the third research question, "Which faculty (and or department) offers the study program in teacher in preschool education?", the data were structured in table 4.

So, candidates studying to become preschool teachers at the university level typically have 1-2 compulsory science classes and, based on the typology of disciplines and research areas, those are category B subjects.

Other Data

During the collection of data, three other data were of value to be part of this analysis. In the following, are presented those findings.

The first one is the subject on "Knowledge about the science", offered as part of the curriculum of study program of two Albanian HEIs. The term "Knowledge about the nature" is used in Albanian Educational System for the first time in

[2] Programi i studimit parashkollor https://edukimi.uni-pr.edu/desk/inc/media/A54B7882-F4E5-4931-9617-91456621A799.pdf

Table 3: *Analytical Program of Studies: Democritus University of Thrace, Greece*

Bachelor's degree in Teacher in Preschool Education			
Subject Group	Number of compulsory courses	Number of elective courses	Number of optional courses
Philosophical, Sociological and Historical Approaches to Education	5	15	0
Psychology	6	11	0
Pedagogics – Didactics	7	15	0
Culture and education	4	17	0
Sciences	7	7	0
Methodology	1	2	0
Foreign Languages	1	2	1

Table 4: *Faculty (and or department) offers the study program in preschool teaching*

Bachelor's degree in Teacher in Preschool Education		
Name of Higher Education Institution	Faculty and/or department that offers study program in teacher in preschool education	Years / ECTS
1. University "Aleksandër Xhuvani" of Elbasan	Faculty of Education / Department of Teaching methodology	3 / 180
2. University "Luigj Gurakuqi" of Shkodra	Faculty of Education / Department of Teaching	3 / 180
3. University "Fan S. Noli" of Korça	Faculty of Education and Social Sciences / Department of Education and Teaching Methodology	3 / 180
4. University "Ismail Qemali" of Vlora	Faculty of Human Sciences / Department of Education	3 / 180
5. Albanian University	Faculty of Social Sciences / Department of Education and English	3 / 180
6. Mediterranean University of Tirana		3 / 180
7. University "Alexandër Moisiu" of Durrës	Faculty of Education / Department of Pedagogy	3 / 180
8. LOGOS University College	Faculty of Human Sciences and Linguistic Communication/ Department of pedagogy-psychology	3 / 180
9. Democritus University of Thrace, Greece	School of education (the Departments of the University are organized into Schools) / Department of Education Sciences in Early Childhood	4 / 240
10. University of Prishtina	Faculty of Education	4 / 240

Table 5: *Final exam, dissertation and elective course*

Bachelor's degree in Teacher in Preschool Education		
University	At the end of study program	ECTS
Democritus University of Thrace, Greece	Dissertation or Elective course (Elective courses are offering at the 7th semester and 8th semester)	13.5
University "Luigj Gurakuqi" of Shkodra	Final exam or dissertation	6
LOGOS University College	Final exam or dissertation	6
Albanian University	Final exam or dissertation	6
University "Aleksandër Moisiu" of Durres	Dissertation or Elective course (Elective course are offering at the 6th semester)	6
University "Hasan Prishtina" of Prishtina	Final exam	10

Law of 1921 (Nathanaili, 2016: 62) "On accepting and using the textbooks of primary and secondary education". "Knowledge about the nature" is a subject focusing on physics, biology and chemistry, offered at the primary level. This term was also used during the communist era and is still in use to this day. "Knowledge about nature", which aims to replace "Natural Science", can be found only in Albanian School System (see table 1); the subject under this name, until now, is always taught only at primary education. Currently, the tendency that aims to use the term "Knowledge about Nature" at the higher education level, too, needs further discussion, because it questions the content and focus of the subject itself.

The second one is that Albanian HEIs have an uncommon feature: at the end of the study program in preschool teaching, final exam and dissertation have the same value, converted both in 6 ECTS (equalling the workload of the dissertation with the one of the final exams). Also, the option to prepare a dissertation at the end of study program in Albanian HEIs, is only for those students with average grade above 8, who are the only ones that have the right to choose between the dissertation or the final exam (or/or). In this new landscape (Table No. 5), the only one who makes an exception is the University "Aleksandër Moisiu", Durres, with the same approach as Democritus University of Thrace, Greece: both make a distinction between final exam and dissertation, as follows. Final exam has not any ECTSs; dissertation has ECTSs, and the option for not choosing the dissertation at the end of the study program, is to attend some elective courses with the same ECTSs in total.

The third one is that the duration of study program in Teacher in Preschool Education is three years and only in Albania (table 4).

Discussions and Conclusions

The purpose of this study was to determine whether a common model, regularity or principle is used to construct the 'Bachelor's degree in Teacher in Preschool Education' curricula from different Higher Education Institution (HEI) in Albania. The four sets of data collected from on-line official websites of 9 Albanian Higher Education Institutions, public and private, revealed that 8 out of 9 offer a study

program degree in preschool teaching; 1 out of 8 has not any study-guide published on-line; 2 out of 8 offer 0 natural sciences courses; 2 out of 8 offer one full natural science course, with approximately the same amount of credits (respectively 11 ECTS and 15 ECTS), the same approach that is used by DUTH, too, only that the science course offered by DUTH has 4.5 ECTS; 2 out of 8, offer courses in natural sciences and courses in didactics of science, but the later one can be found under a new name – "natural science" which replaces "knowledge about science", at both HEIs, a term or a concept entirely unknown at university level; 1 out of 8 offer only didactics of natural sciences. In summary, based on the analysis of the curricula of Albanian HEIs, the number of compulsory courses in science are different from one HEI to another and there is not a common model, regularity or principle used to construct the bachelor preschool curricula.

According to the law, in Albania, people who want to become preschool teachers must earn a university degree (3-year, 180 ECTS), by following a specific curriculum. Universities have complete responsibility for the preparation of future teachers, but the study programs offered by them are accredited by a professional agency in Albania that dictates most of the course content. On one hand, in principle, this is a fair way for all students, regardless of which university they graduated from, to become fully members of a profession once they graduate and begin work. On the other hand, data show that in the case of courses of natural sciences, there is not any common feature or approach regarding the weighting of this subject groups. Furthermore, with regard to the analytical program, 7 out of 8 Albanian HEIs do not contain the analytical program as part of the study guide; only 1 out of 8 has an analytical program, based on the category of subjects taught. Only University "Luigj Gurakuqi" of Shkodra has the analytical program, with courses organised based on their category. Moreover, curriculum of the study program in teaching in preschool varies significantly from one higher education institution to another.

The good news is that all study programs in preschool teaching are under the umbrella of faculty of education, department of pedagogy-psychology or teaching, which means that there are possibilities to make a positive change.

Recommendations

There is a need to enhance preschool teachers' background in science, by launching a professional plan of professional development for in-service preschool teachers, with a duration of at least five years.

There is a need to introduce the analytical program of studying at the very first of study guide as an effective and rapid tool to assess the quality of curriculum (see Table No. 3); subject – group and the number of compulsory courses must be the same for all study programs in preschool.

To improve the situation, the number of subjects dedicated to science must be at least three compulsory semesters long courses in the last year, which aim at developing competencies both in subject matter and methodological aspects of teaching science.

Students of Democritus University of Thrace, Greece and of University "Aleksandër Moisiu" of Durres have the option to prepare a dissertation in their fourth year of study if they wish so. If they do not prepare a dissertation, they will have to successfully attend three additional elective courses. This approach should be introduced at Albanian HEIs, too.

The research across four countries centred on the length of study program, show that:

- in Albania this study program is 3-year longs;

- in Sweden, preschool teachers undertake three and a half years of full-time study at university level with a bachelor's degree; there is one education program for all preschool teachers with local differences across universities (Campbell et al., 2022: 204).
- In Greece, the study program in preschool teaching is four years long.
- in Kosovo, the study program in preschool teaching is four years long.

Albania HEIs that offer study programs for pre-school and elementary school teachers would be to follow a modified Portuguese HEI. This involves a first cycle called Bachelor in Basic Education, with a duration of three years, which qualifies students to enter a second cycle. The second cycle is a Master's Degree in Teaching, which qualifies students, by choice, as teachers for pre-school or elementary school (Friães et al., 2018). This recommendation is based on the fact that Albanian HEIs are relatively small in terms of the number of enrolled students. The Ministry of Education and Sports will need to adopt this new proposal, while from the part of HEIs will be a good option from the perspective of Bologna Chart and curriculum design (Nathanaili, 2023).

There is a need, to, of a national debate on the preparation of preschool teachers, based on national cooperation, to introduce a new perspective for this program.

References

Abell, S. K. (2002). "International Perspectives on Science Teachers Education", In Abell, S. K. (ed.) *Science Teacher Education: An International Perspective*. New York: Kluwer Academic Publishers, in cooperation with Association for the Education of Teachers in Science.

Albanian University. 2024. "Fakulteti i Shkencave Shoqërore. Kurrikulat e programeve të studimit" ["Faculty of Social Sciences. Study programs Curriculum]", https://albanianuniversity.edu.al/sq/fakulteti-i-shkencave-shoqerore-2/ (available 18.9.2024)

Borghi, L., Ambrosis, A., Mascheretti, P. (2002). Reform in Science Teacher Education in Italy: The case of physics. In Abell, S. K. (ed.) *Science Teacher Education: An International Perspective*. New York: Kluwer Academic Publishers, in cooperation with Association for the Education of Teachers in Science.

Campbell, C., Bäckman, K., Eeckhout, T., Speldewinde, C., Johansson, A.M., Arnqvist, A. (2022). In Tunnicliffe, S. D., Kennedy, T. J. (Eds.) *Play and STEM Education in the Early Years: International Policies and Practices*. Springer.

Englehart, D. (2014). A contrast of the science teaching practices of two preservice early childhood educators. In Sunal, D. W., Sunal, C. S., Wright, E. L., Mason, C. L., Zollman, D. (Eds.) *Research Based Undergraduate Science Teaching*. Charlotte, NC: Information Age Publishing, INC, pp. 221-246.

Friães, R., Lino, D., Parente, C., Craveiro, C., Silva, B. (2018). *The role of practicum for early childhood teacher education: the perspectives of student teachers*. Proceedings of ICERI 2018 Conference 12th-14th November 2018, Seville, Spain. ISBN 978-84-09-05948-5.

Heaston, S. T., Marcum, B. (2014). Early Science Teaching Experiences for Undergraduates in an on-campus, hands-on laboratory. In Sunal, D. W., Sunal, C. S., Wright, E. L., Mason, C. L., Zollman, D. (Eds.) *Research Based Undergraduate Science Teaching*. Charlotte, NC: Information Age Publishing, INC.

Howitt, C. (2021). Scientific Inquiry in the early years. In Campbell, C., Jobling, W., Howitt C. (Eds.) *Science in Early Childhood*, 4th edition. Cambridge University Press. pp. 91-104.

Nathanaili, V. (2016). *Rruga e mundimshme e shkollës shqipe. Çështje, politika & veprimtari në fushën e arsimit, 1912-1944 [The arduous path of Albanian school: issues, policies & activities in the field of education, 1912-1944],* Tiranë: UET Press.

Nathanaili, V. (2023). "Professional passive practice mentoring system in study program 'Teaching for pre-school education' in Albanian HEI-s", *European Early Childhood Education Research Journal*, 32(2), 192–207. https://doi.org/10.1080/1350293X.2023.2247590

Pedersen, J., Isozaki, T., Hirano, T. (2017). Introduction. In Pedersen, J., Isozaki, T., Hirano, T. (Eds.) *Model Science Teacher Preparation Programs: An International Comparison of what works.* Charlotte, NC: Information Age Publishing, INC., pp. VII-1.

Trundle, K. C., Saçkes, M. (2012) Science and Early Education. In Pianta, R. C., Barnett, W. S., Justice L. M., Sheridan, S. M. (Eds.). *Handbook of Early Childhood Education* New York: The Guilford Press, pp. 240-258.

Universiteti i Elbasanit, UE. (2024). "Kurrikula e programit të studimit" [Study program curriculum], https://uniel.ems.al/school/program/ca74029c-bb16-4872-a8a1-b0f5009819da.aspx (available 18.9.2024)

Universiteti i Prishtinës, UP. (2019). "Programi i studimit parashkollor", https://edukimi.uni-pr.edu/desk/inc/media/A54B7882-F4E5-4931-9617-91456621A799.pdf (available 20.9.2024)

Universiteti Mesdhetar i Shqipërisë, UMSH. "Kurrikula e programit të studimit" [Study program curriculum], https://www.umsh.edu.al/media/65188ddf8e891.pdf (available 20.9.2024

University of Shkodra "Luigj Gurakuqi", USH. 2024. "Kurrikula e programit të studimit" [Study program curriculum], Faculty of Education Sciences, https://unishk.edu.al/fileadmin/user_upload/2023/Planet_Mesimore/2023/Bachelor/FSHE/FSHE-_Ba-_Arsim__parashkollor__2023.PDF (available 18.9.2024).