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ANALYSIS OF THE BALANCE OF THEORY AND PRACTICE IN THE TECHNIQUE AND TECHNOLOGY CURRICULUM

Abstract

This paper analyses the balance between theoretical and practical teaching outcomes in Serbian primary schools' Technique and Technology curriculum. Integrating theory and practice is crucial in developing the technical skills necessary for students' success in a rapidly evolving technological landscape. While theoretical education fosters critical thinking and conceptual understanding, practical education enables students to apply these concepts in real-world scenarios. This research examines the distribution of theoretical and practical outcomes across grades 5 to 8, analysing the curriculum's alignment with national and European educational priorities. Using quantitative and qualitative methods, the study reveals that while the curriculum maintains a balance between theory and practice, there is a notable dominance of practical outcomes in the lower grades, with a shift towards theoretical outcomes in higher grades. The paper offers recommendations for improving the curriculum, such as increasing theoretical content in earlier grades and enhancing opportunities for practical application in later stages, ensuring comprehensive development of students' technical competencies. The findings underscore the importance of strategically balancing theoretical knowledge and practical skills to prepare students for future challenges in the modern workforce. Future research could explore students' attitudes

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toward technical education and investigate how an interdisciplinary approach could further enhance the curriculum's balance between theory and practice.

Keywords: theoretical and practical outcomes, theoretical and practical education, Technique and Technology curriculum, technical education in primary school.

Introduction

Developing technical skills in students is essential in today's rapidly advancing technological society. The education system must strive to harmonize theoretical and practical education and thus prepare students for future careers. Theoretical education provides the fundamental knowledge of technical principles and concepts, fostering analytical and critical thinking skills necessary for interpreting and solving complex problems (Bloom, 1956). However, theoretical knowledge can remain abstract without practical application. Practical education allows students to apply their knowledge through tangible projects, laboratory exercises, and simulations, developing technical skills like precision, manual dexterity, and technical literacy (Simpson, 1972; Kozik, 2015). Additionally, it enhances creativity, teamwork, and real-time problem-solving abilities (Aliyu & Dabblan, 2010; Odo et al., 2017; Purković, 2015; Gopalan & Hashim, 2021).

Integrating these educational methods into broader strategies emphasizes their significance, especially in light of the Council of the European Union's recommendation, which identifies digital and technological competencies as vital for both personal and professional success. These align with the objectives of the subject TT, focusing on technical-technological literacy and the practical application of theoretical knowledge.

At the national level, Serbia's Action Plan for implementing the Industrial Policy Strategy (2024-2025) and the Strategy of Scientific and Technological Development emphasise the need for skills in digitisation and artificial intelligence, highlighting the importance of practical education in Engineering and Technology for the future development of industries. Additionally, adapting educational content to align with the national AI strategy ensures that students acquire digital competencies crucial for a digitised society and technology-driven economy.

By aligning the theoretical and practical components of the curriculum with national and European strategies, students gain technical-technological literacy, equipping them to contribute to technological and industrial advancements and compete in the global labour market (Gopalan & Hashim, 2021). While both theoretical and practical aspects are significant, the influence of their balance on the development of crucial competencies for lifelong learning has not yet been sufficiently studied. The fundamental question that arises is how successful technical-technological education balances theory and practice and how that balance affects the development skills needed for the modern world.

This research analyses the relationship between theoretical and practical teaching outcomes in elementary schools' Technique and Technology curriculum. The following hypotheses are proposed:

H1 Theoretical and practical outcomes in the Techniques and Technologies curriculum achieve a balance;

H2 Theoretical and practical outcomes are equally distributed in grades across the Techniques and Technology curriculum.

The research will include an analysis of the current curriculum and examining how teaching outcomes are distributed between theoretical and practical aspects. In conclusion, the paper will provide recommendations for improving the curriculum to integrate theoretical and practical components more effectively. This work offers a deeper understanding of the existing balance between theory and practice in technical-technological education and its impact on the development of students' skills, relying on modern educational strategies and national priorities.

Methodology

The methodology used in this research to analyse the Technique and Technology curriculum in Serbian primary schools combines quantitative and qualitative approaches. Data were collected from publicly available teaching programs for grades 5 to 8, focusing on teaching areas, units, and teaching outcomes.

1. Quantitative Analysis:

Quantitative data were gathered to evaluate the balance between theoretical and practical content. Descriptive statistics were employed to identify patterns and trends in the distribution of outcomes across different grades. The data were organised into tables to clearly show how theoretical and practical components are structured in the curriculum.

2. Qualitative Analysis:

The qualitative analysis explored the thematic connections between teaching units and teaching outcomes. This approach examined how well theoretical knowledge and practical skills are integrated within the curriculum and whether there is alignment between the intended teaching outcomes and actual teaching practices. Patterns in the content distribution were identified to assess the effectiveness of the curriculum in balancing theory and practice.

3. Results Interpretation:

Quantitative and qualitative findings were integrated to provide a comprehensive understanding of the curriculum. The quantitative data provided a measurable interpretation of the balance of outcomes, while the qualitative analysis offered deeper insights into the strengths and weaknesses of content distribution.

4. Conclusions and Recommendations:

Based on the analysis, conclusions were drawn regarding the current state of balance between theoretical and practical content in the curriculum. Improvement recommendations were made to integrate these components better to meet student needs and align with labour market demands.

This integrated approach thoroughly evaluated the curriculum's effectiveness in providing students with theoretical knowledge and practical skills necessary for future challenges.

Analysis of the technique and technology curriculum

The TT curriculum in Serbian primary schools is designed to intertwine and complement theoretical and practical content, striving for a balance between these elements. However, exact percentages are not always specified. The program equips students with fundamental knowledge of essential concepts such as techniques and technology, innovation, materials, energy, and information. Theoretical content covers the principles of technical systems, the historical development of technology, and technological progress's societal and environmental impacts.

Practical application involves handling tools and materials, creating technical drawings and models, and working with digital technologies. These activities enable students to apply theoretical knowledge in real-world situations and develop practical skills.

The program's integrated approach is evident in project-based learning, experiments, and visits to factories, workshops, and museums, which help students connect theory with practice. This approach ensures students acquire both knowledge and hands-on experience, enhancing their ability to understand and apply what they have learned.

Determining the structure of the Techniques and Technologies curriculum

The first step is analysing teaching areas and teaching outcomes. Table 1 shows each area's total number of teaching outcomes by grade.

Table 1
Analysis of teaching outcome by grades

Teaching area	5th grade	6th grade	7th grade	8th grade	Total
Living and working environment	5	5	5	5	20
Traffic	9	4	4	4	21
Technical and digital literacy	7	3	7	5	22
Resources and production	8	7	8	8	31
Constructive modelling	3	6	7	6	22
In total	32	25	31	28	116

The analysis of the curriculum reveals the following key points:

1. Balance Between Teaching Areas:

- "Living and Working Environment" consistently has five outcomes per grade, indicating stable focus.
- "Traffic": Most outcomes in the 5th grade (9) decrease in higher grades, suggesting that foundational traffic concepts are introduced early.
- "Technical and Digital Literacy" is present in every grade with variations, peaking in the 5th and 7th grades.
- "Resources and Production": the most represented area with 31 outcomes, particularly emphasised in the 5th and 8th grades, indicating a strong focus on practical education.
- "Constructor Modeling": Outcomes increased from the 5th to 7th grade, with a slight drop in the 8th grade, reflecting a gradual introduction of complex tasks.

2. Total Number of Teaching outcomes by grade:

It varies by grade, decreasing from 32 to 25 outcomes between grades 5 and 6 and increasing again in grades 7 and 8, suggesting varying program intensity by age and education stage.

3. Distribution of Teaching Outcomes by Area:

- "Resources and Production" is the most prominent area (31 outcomes), highlighting its importance in practical education.
- "Constructor Modelling" and "Technical and Digital Literacy" follow with 22 outcomes each.
- "Traffic" and "Living and Working Environment" have fewer outcomes (21 and 20), likely treated as complementary or specialised areas.

Based on the conclusions, the following ***recommendations*** are suggested:

- ***Adjust Program Intensity***: Reevaluate the reduced number of outcomes in the 6th grade to determine if an increase is needed to support continuous learning and skill development.

- ***Integrate Fields***: Promote content integration across different areas to provide comprehensive educational experiences that link theory with practice.
- ***Flexible outcomes Allocation:*** Consider revising the distribution of outcomes in areas like "Transport" to ensure students gain adequate knowledge and practice in all essential topics.

Analysis of teaching outcomes by domains

The next step of the research involves analysing teaching outcomes by domes through a qualitative approach, counting theoretical and practical results to identify patterns.

Theoretical outcomes include acquiring knowledge, understanding concepts, classifying information, and performing analysis and synthesis, which are crucial for developing students' basic understanding and critical thinking. Examples include 5th graders describing the role of technology in community development and 8th graders evaluating the importance of electrical engineering in daily life.

Practical outcomes focus on applying knowledge through tasks such as using tools, creating models, and demonstrating skills essential for applying theoretical knowledge in real situations. Examples include 5th graders independently drawing simple objects and 8th graders building and controlling electromechanical models. Table 2 illustrates the distribution of theoretical and practical teaching outcomes by grade.

The analysis of teaching outcomes of the technology and technology curriculum involves analysing teaching outcomes through a qualitative approach, counting theoretical and practical results to identify patterns.

Table 2
Analysis of teaching outcomes

Class	Theoretical results		Practical results		Total
	numerical	%	numerical	%	
5th grade	13	30.23%	30	69.77%	43
6th grade	10	30.00%	23	70.00%	33
7th grade	13	43.33%	17	56.7%	30
8th grade	14	53.85%	12	46.15%	26
Total	50	45,46%	72	54,54%	132

Based on the data, the following observations can be made:

1. **Overall balance**: The curriculum favours practical outcomes (54.54%) over theoretical ones (45.46%), indicating a slight emphasis on hands-on learning, though the approach remains well-balanced.

2. **Class analysis:**

- ***5th Grade:*** Practical outcomes dominate (69.77%), focusing on developing practical skills at the introductory level.
- ***6th Grade***: Practical outcomes surpass theoretical ones (70.00%), emphasising continued hands-on learning and skill development.
- ***7th Grade:*** The distribution is more balanced, with practical outcomes at 56.67%, reflecting a transition between skill application and more complex theoretical knowledge.
- ***8th Grade:*** Theoretical outcomes take a slight lead (53.85%), suggesting a focus on reinforcing conceptual understanding as students prepare for more advanced topics.

3. Content Analysis:

- ***Theoretical Outcomes***: These are most prominent in the 8th grade (14 outcomes, 53.85%), showing an increasing focus on theory as students progress, while in earlier grades, the emphasis on theory is relatively lower.
- ***Practical Outcomes***: Practical learning is prevalent throughout, peaking in the 6th grade (23 outcomes, 70.00%). While it slightly decreases by the 8th grade, it remains a crucial part of the curriculum.

The analysis of teaching outcomes in the Technique and Technology curriculum for elementary school shows a slight preference for practical outcomes (54.54%) compared to theoretical ones (45.46%), which indicates a balanced approach between acquiring knowledge and developing skills through practical work. This balance helps students acquire technical skills while understanding basic theoretical concepts. Practical outcomes are most represented in lower grades (5th and 6th grade), where students learn more through work and application of technological procedures. In comparison, in higher grades (7th and 8th grade), the number of theoretical outcomes gradually increases, aligning with expectations of educational advancement and preparation for more complex technical concepts.

It determines the percentage representation of theoretical and practical learning outcomes.

Table 3

Presentation of the relationship between theoretical and practical outcomes by class

Class	Total number of outcomes	Ratio of theoretical and practical outcomes	Deviation from balance (50:50 theory and practice) %
5th grade	43	.43	19.77%
6th grade	33	.43	20.00%
7th grade	30	.76	6.67%
8th grade	26	1.16	3.85%

The data presents the distribution of theoretical and practical outcomes in the technical education curriculum across different grade levels:

1. 5th Grade: The practical outcomes dominate with a ratio of .43, meaning there is a 19.77% deviation from a balanced 50:50 split. This significant deviation suggests a strong emphasis on practical skills early in the curriculum, focusing on hands-on activities and applications rather than theoretical knowledge.

2. 6th Grade: Similar to the 5th grade, the practical outcomes remain dominant with a .43 ratio and a 20.00% deviation from balance. This continues the trend of emphasising practical knowledge, which likely reinforces the foundational skills learned in the previous year, making students more proficient in application-based learning.

3. 7th Grade: The balance shifts, with a .76 ratio and only a 6.67% deviation. This indicates a more balanced integration of theory and practice, suggesting that students now engage more in theoretical concepts, likely to support more advanced practical applications.

4. 8th Grade: A further shift toward theoretical outcomes is observed with a ratio of 1.16 and a slight 3.85% deviation. This indicates that theory begins to take a leading role in the curriculum, reflecting the need for students to understand more complex concepts near the end of their technical education at this level.

5. Overall: The program maintains a balanced approach across all grades, with an average ratio of 1.21 and a 4.65% deviation from the 50:50 balance. This slight emphasis on practical outcomes in the earlier grades transitions toward a more balanced or theory-leaning approach in the upper grades.

The overall technical education curriculum thoughtfully progresses from a practical to a more theoretical focus as students advance. The emphasis on practical skills is evident in the earlier grades (5th and 6th), while theory plays a more critical role in the upper grades (7th and 8th). This balance ensures that students develop strong foundational skills early on and are equipped with the necessary theoretical knowledge to prepare for more complex challenges.

Recommendations

1. Maintaining Balance: To maintain the balance between theoretical and practical outcomes means ensuring the comprehensive development of students. Placing greater emphasis on theoretical concepts in upper grades can help students better understand technological processes and principles, while practice allows for acquiring concrete skills.

2. Increasing Theoretical Outcomes in Lower Grades: In the 5th and 6th grades, where practical outcomes dominate, it would be helpful to introduce more theoretical elements so that students can bridge the gap between practice and theory earlier and develop a deeper understanding of technological concepts.

3. Strengthening Practical Outcomes in 7th and 8th Grade: Although theoretical outcomes become more significant in higher grades, it is essential to continue emphasising practical skills so that students gain as much experience as possible in applying knowledge in real situations, primarily through projects and teamwork.

4. Development of Innovative Learning Methods: Introduce more digital tools and simulations that could help integrate theoretical knowledge with practical skills, especially in technology and engineering, to enable students to gain holistic knowledge applicable to future career paths.

These recommendations could improve teaching outcomes and enable students to acquire the comprehensive technical competencies necessary for success in STEM fields.

Discussion

The research results show that the Technique and Technology curriculum in primary education in Serbia is successfully structured to balance theoretical and practical content, which is aligned with modern educational practices that emphasise the importance of applying knowledge in real situations. Previous studies, such as Purković (2016), Aleksić et al., and the report of the Maryland State Department of Education (2021), point out that technical education should integrate cognitive, psychomotor and affective aspects so that students develop comprehensive competencies.

The obtained results align with the literature that recommends that technical education emphasises the acquisition of knowledge and the development of practical skills that equip students to handle real-world and professional scenarios (ITEEA, 2020) (Wisconsin, 2017). While the program generally maintains a good balance, the analysis shows a slightly higher representation of theoretical outcomes, especially in the lower grades. This trend supports the claims of Purković (2016) that it is essential to ensure that practical skills are integrated already in the early stages of education in order to ensure seamless integration of theoretical knowledge and practical skills.

Opportunities for improvement: The literature highlights the importance of continuous evaluation and adaptation of curricula to ensure they remain relevant and aligned with changes in society and technology (ITEEA, 2020). The research results point to several critical areas for improvement, including the need for greater integration of practical skills and strengthening of the affective domain. It is essential to increase the participation of practical tasks in lower grades and to integrate modern technologies such as 3D printing and CAD software into teaching. These recommendations align with contemporary education trends that emphasise the importance of STEM skills (Science et al.) for students' future professional success (Wisconsin, 2017).

Preparation for future educational and professional challenges: The Technique and Technology program provides a solid foundation for students' further education and professional development. The literature confirms this emphasis on developing

technical skills as a key competency for future generations (Purković, 2015). However, to ensure optimal student preparation for future challenges, it is necessary to continuously monitor and adapt the program to modern standards and labour market expectations. This way, students will be better prepared to face complex tasks in a modern technological environment.

Based on the results obtained and the literature used, it is confirmed that the curriculum for Technique and Technology in primary education in Serbia has been successfully set up to balance theoretical and practical content. Nevertheless, there is room for further improvements, especially in greater integration of practical skills in lower grades, strengthening the affective domain and aligning the program with modern educational standards. Through these changes, the program can further strengthen its role in preparing students for contemporary educational and professional challenges.

Conclusion

This research provided a deeper insight into the balance between theoretical and practical teaching outcomes within the Technique and Technology curriculum in primary schools in Serbia. The results of the research confirmed hypothesis 1 that the theoretical and practical outcomes in the program are balanced, but at the same time, pointed to the need to improve the program in terms of better integration of theoretical elements in the early grades and maintaining a solid practical aspect in the upper grades. Several recommendations for improvement have been proposed, including strengthening theoretical elements in lower grades and greater integration of digital tools and innovations into the teaching process.

Based on the analysis, the distribution of theoretical and practical outcomes in the Engineering and Technology program is not uniform across grades. In the lower grades (5th and 6th grade), practical outcomes are predominant, while in the 7th grade, a balance is achieved, and in the 8th grade, theoretical outcomes gain prominence. These findings do not align with hypothesis 2, which states that theoretical and practical outcomes are equally distributed across grades. Although there is a trend towards balance in the middle grades, the distribution of outcomes shows that practical outcomes are significantly more prevalent in the early stages (5th and 6th grade). In contrast, theoretical outcomes assume greater significance in the final grades (7th and 8th grade).

The analysis showed that the programme generally balances theoretical and practical components, with a slight predominance of practical outcomes in the lower grades. This aligns with the need to develop practical skills in the early stages of education. However, theoretical outcomes are increasing in higher grades, indicating the gradual introduction of more complex concepts to prepare students for a deeper understanding and application of technical and technological knowledge.

This research highlighted the importance of balancing theory and practice in technical and technological education for students to acquire comprehensive compe-

tencies necessary for the modern labour market and future professional development. Despite the progress made, the curriculum requires continuous evaluation and adaptation to remain in line with the requirements of modern technology and industry, which is an essential step towards raising the quality of education and preparing students for the challenges of modern society.

Suggestions for further research: Research on the affective domain could focus on how students' emotional development and attitudes towards technical subjects affect the development of practical skills and their overall progress in education, as well as interdisciplinary research that can examine how the integration of technical education with mathematics, physics and the arts contribute to a better balance between theory and practice and the development of comprehensive skills in students.

Technical and technological education is crucial for developing skills necessary in modern society. Its implementation must not be left to chance but requires careful planning and balancing between theoretical knowledge and practical skills to prepare students for future challenges.

ANALIZA BALANSA TEORIJE I PRAKSE U PROGRAMU TEHNIKE I TEHNOLOGIJE

Apstrakt

U savremenom društvu, koje se ubrzano tehnološki razvija sticanje tehničkih veština u didaktičko - metodičkoj interpretaciji kurikuluma, a prema zahtevima nastavne prakse, postaje neophodno za uspeh učenika u budućim karijerama. Integracija teorijske i praktične nastave koja je ključna za razvoj tehničkih veština doprinosi dizajniranju nastavnog procesa koji je usmeren ka razvijanju akcionih kompetencija učenika kao najvišeg ishoda predmetnog kurikuluma.

Mogućnosti za ostvarivanje kurikularnog balansa u pogledu ciljeva i ishoda integracijom teorijske i praktične nastave pruža u osnovnim školama predmet Tehnika i tehnologija. Teorijska nastava omogućava učenicima da razviju kritičko mišljenje, analitičke sposobnosti i konceptualno razumevanje tehničkih principa. Praktična nastava, sa druge strane, pruža mogućnost učenicima da primene svoje teorijsko znanje kroz konkretne projekte, laboratorijske vežbe i simulacije. Time se razvijaju manuelne veštine, tehnička pismenost, kreativnost i sposobnost za rešavanje problema u realnom vremenu.

Definisanje adekvatnog modela uzajamne povezanosti i didaktičko–metodičkog reciprociteta teorijske nastave i prakse operacionalizovano je istraživačkim pitanjem - koliko uspešno tehničko - tehnološko obrazovanje balansira između teorije i prakse, i da li je postojeći kurikulum pogodan okvir za razvoj veština potrebnih za život u savremenom svetu?

Istraživanje je sprovedeno sa ciljem da analizira odnos između teorijskih ciljeva i praktičnih ishoda učenja u kurikulumu predmeta Tehnika i tehnologija u osnovnim školama. Definisane su sledeće hipoteze:

H1 Teorijski ciljevi i praktični ishodi u kurikulumu Tehnike i tehnologije su u ravnoteži;

H2 Teorijski ciljevi i praktični ishodi su ravnomerno raspoređeni po razredima u kurikulumu Tehnike i tehnologije.

U istraživanju je korišćena kombinacija kvantitativnih i kvalitativnih pristupa. Kvantitativna analiza je omogućila pregled distribucije teorijskih ciljeva i praktičnih ishoda učenja po razredima, dok je kvalitativna analiza fokusirana na tematske veze između nastavnih jedinica i ishoda učenja, kako bi se utvrdilo da li postoji usklađenost između planiranih ciljeva i ostvarenih ishoda u nastavnoj praksi.

Kvantitativni podaci su pokazali da kurikulum generalno održava balans između teorijskih ciljeva i praktičnih ishoda, ali da postoji blaga dominacija praktičnih ishoda u petom i šestom razredu, dok se teorijski ciljevi više naglašavaju u sedmom i osmom razredu**.** Ovaj obrazac odgovara obrazovnoj logici prema kojoj se učenici najpre suočavaju u petom i šestom razredu sa praktičnim zadacima kako bi razvili osnovne tehničke veštine, dok se u sedmom i osmom uvode složeniji teorijski koncepti koji im pomažu da dublje razumeju tehničke procese.

Glavni rezultati istraživanja analize nastavnih oblasti i ishoda učenja pokazali su nekoliko ključnih nalaza: balans između nastavnih oblasti: Nastavna oblast "Životna i radna sredina" pokazuje stabilan fokus u svim razredima sa po pet ishoda. "Saobraćaj" je najviše zastupljen u petom razredu, dok se u ostalim razredima taj fokus smanjuje. "Tehnička i digitalna pismenost" i "Resursi i proizvodnja" su ključne oblasti sa većim brojem ishoda u starijim razredima, što ukazuje na značaj praktične edukacije; ukupan broj ishoda po razredima: Broj ishoda varira po razredima, sa smanjenjem u šestom razredu i povećanjem u sedmom i osmom. To sugeriše da intenzitet programa varira u zavisnosti od uzrasta učenika.

Distribucija teorijskih i praktičnih ishoda: analiza pokazuje da praktični ishodi dominiraju u mlađim razredima, dok se u starijim razredima povećava broj teorijskih ishoda. U petom razredu praktični ishodi čine 69.77%, dok teorijski čine 30.23%. U osmom razredu odnos se menja, pa teorijski ishodi čine 53.85%, a praktični 46.15%.

Na osnovu sprovedene analize, autori zaključuju da program Tehnike i tehnologije najvećim delom uspešno balansira između teorijskih i praktičnih komponenti, kao i da analiza ukazuje na sledeće preporuke za unapređenje nastavnog koncepta:

1. Održavanje ravnoteže: kontinuirano održavanje ravnoteže između teorijskih i praktičnih rezultata kako bi se osigurao sveobuhvatan razvoj učenika. Naglasak na teorijskim konceptima u starijim razredima može pomoći učenicima da bolje razumeju tehnološke procese i principe, dok praksa omogućava sticanje konkretnih veština.

2. Povećanje teorijskog sadržaja u mlađim razredima: u petom i šestom razredu, gde su praktični ishodi dominantni, trebalo bi uvesti više teorijskih elemenata kako bi učenici ranije uspostavili povezanost između teorije i prakse.

3. Jačanje praktičnih ishoda u starijim razredima: iako teorijski ishodi postaju značajniji u sedmom i osmom razredu, važno je zadržati snažan fokus na praktičnim veštinama kako bi učenici stekli što više iskustva u primeni znanja u realnim situacijama, posebno kroz projektni rad i timske zadatke.

4. Razvoj inovativnih metoda učenja: uvođenje više digitalnih alata i simulacija, poput 3D štampanja i CAD softvera, može pomoći integraciji teorijskih znanja sa praktičnim veštinama, što će omogućiti učenicima da steknu sveobuhvatno znanje primenjivo u budućim karijerama.

Ove preporuke imaju za cilj da unaprede ishode nastave i omoguće učenicima sticanje tehničkih kompetencija neophodnih za uspeh u STEM oblastima (nauka, tehnologija, inženjering i matematika).

Istraživanje je potvrdilo da su teorijski ciljevi i praktični ishodi u programu Tehnike i tehnologije uravnoteženi, ali je istovremeno ukazalo na potrebu za boljom integracijom teorijskih elemenata u mlađim razredima i zadržavanjem snažnog praktičnog aspekta u starijim razredima. Distribucija ishoda pokazuje da praktični ishodi dominiraju u mlađim razredima, dok teorijski ishodi postaju značajniji u starijim razredima. Iako je napredak očigledan, kurikulum zahteva kontinuiranu evaluaciju i adaptaciju kako bi ostao u skladu sa zahtevima modernog tržišta rada i tehnoloških inovacija. Predlozi za dalja istraživanja mogu biti usmereni ka afektivnoj oblasti sa ciljem da se sagleda kako emocionalni razvoj učenika i stavovi prema tehničkim predmetima utiču na razvoj praktičnih veština i njihov ukupni napredak u obrazovanju, kao i ka interdisciplinarnim istraživanjima kojima bi se utvrdilo kako integracija tehničkog obrazovanja sa drugim predmetima doprinosi boljoj ravnoteži između teorije i prakse i razvoju sveobuhvatnih veština kod učenika.

Ključne reči: teorijski i praktični ishodi, teorijsko i praktično obrazovanje, nastavni plan i program Tehnike i tehnologije, tehničko obrazovanje u osnovnoj školi.

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