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TEACHERS' PREFERENCES OF TEACHING GYMNASTICS IN PRIMARY EDUCATION: DIFFERENCES IN LENGTH OF TEACHERS' CAREER LEVELS

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Preferencje nauczycieli w nauczaniu gimnastyki w edukacji podstawowej: różnice wynikające z długości stażu pracy nauczycieli

Streszczenie

Nauczyciele (edukatorzy) utrzymują błędne przekonanie, że nauczanie gimnastyki w edukacji podstawowej jest pełne wyzwań (ryzyka, komplikacji). Niezależnie od tego, czy jest się początkującym, czy doświadczonym nauczycielem w edukacji podstawowej, towarzyszenie uczniom w opanowaniu gimnastyki może być trudne. Ponieważ w literaturze, na skalę słowacką (według wiedzy autorów), nadal występują luki, niniejsze badanie miało na celu analizę i porównanie preferencji nauczycieli dotyczących nauczania gimnastyki w edukacji podstawowej. Ankieta składająca się z trzech pytań (preferencje nauczycieli w zakresie nauczania gimnastyki) została przeprowadzona przez 18 tygodni (1 czerwca – 30 września 2023 r.), obejmując 1246 (100%) nauczycieli edukacji podstawowej: (i) Początkujący nauczyciele (490, 39,32%); (ii) Doświadczeni nauczyciele (756, 60,68%). Do oceny danych wykorzystano statystyki opisowe (procent – %, średnia arytmetyczna – $\bar{x}$) oraz statystyki wnioskowania (test chi-kwadrat – $\chi 2$) (Ibm Spss Modeler). 30,5% (380) nauczy-

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cieli w edukacji podstawowej uważa, że nauczanie gimnastyki (tańca) jest wymagające, w porównaniu do zajęć na świeżym powietrzu (108, 8,60%) ($\chi2(4) = 3,08$ E-05; $p = 26,04$). 786 (62,34%) nauczycieli w edukacji podstawowej korzysta z tradycyjnego sprzętu gimnastycznego, w porównaniu do 1,92% (24), którzy w ogóle nie uczą gimnastyki ($\chi2(3) = 19,54$; $p = 0,0002$). 42,78% (532) nauczycieli w edukacji podstawowej uważa, że dostępny sprzęt do nauczania gimnastyki jest wystarczający, w porównaniu do 20,14% (250), którzy mają odmienne zdanie (niewystarczający) ($\chi2(3) = 0,64$; $p = 1,68$). Pomimo wyzwań włączenie gimnastyki do edukacji podstawowej może przynieść korzyści, w szczególności takie, jak: rozwijanie koordynacji i równowagi oraz wspieranie pracy zespołowej i współpracy. Odpowiednie przygotowanie i dostęp do zasobów może pomóc nauczycielom w pokonywaniu wyzwań związanych z nauczaniem gimnastyki oraz zapewnić uczniom wartościowe doświadczenia edukacyjne.

Słowa kluczowe: poziomy kariery, edukacja podstawowa, preferencje nauczycieli, nauczanie gimnastyki.

Abstract

Teachers (educators) maintain the misunderstanding that teaching gymnastics in primary education is full of challenges (risks, complications). Regardless of whether you are a beginner and/or an experienced teacher in primary education, leading students (pupils) to mastering gymnastics may be challenging. Because many gaps remain in literature, in terms of Slovak scale (to the best of the authors' knowledge), the present study was aimed at analyzing and comparing teachers' preferences of teaching gymnastics in primary education. A 3-question survey (teachers' preferences of teaching gymnastics) was carried out during 18 weeks (June 1 – September 30, 2023), aiming at 1246 (100%) teachers in primary education: (i) Beginning teachers (490, 39.32%); (ii) Experienced teachers (756, 60.68%). Descriptive (percentage – %, arithmetic mean – $\bar{x}$) and inferential (chi-square test – $\chi2$) statistics was used to evaluate the data (Ibm Spss Modeler). 30.50% (380) of teachers in primary education believe that teaching gymnastics (dance) is demanding, compared to outdoor adventure (108, 8.60%) ($\chi2(4) = 3.08$ E-05; $p = 26.04$). 786 (62.34%) of teachers in primary education use traditional gymnastics equipment, compared to 1.92% (24) who do not teach gymnastics (at all) ($\chi2(3) = 19.54$; $p = 0.0002$). 42.78% (532) of teachers in primary education believe that material equipment (available) in teaching gymnastics in sufficient, compared to 20.14% (250) who take the opposite view (insufficient) ($\chi2(3) = 0.64$; $p= 1.68$). Despite the challenges, incorporating gymnastics in primary education may offer advantages, in particular, developing coordination and balance, fostering teamwork and cooperation. Adequate preparation and access to resources may help teachers navigate the challenges of teaching gymnastics and provide learning experiences.

Keywords: career levels, primary education, teachers' preferences, teaching gymnastics.

Introduction

Addressing the global issue of physical (in)activity in students of different age groups (Guthold et al., 2020; González-Serrano et al., 2022), necessitates an indispensable role of educational system by means of physical education (i.e. physical education and sports) worldwide. The educational process (teaching) is crucial in fostering relationships towards physical activity in students, acquiring

skills (new) as a prerequisite for engaging in physical activity, shaping the holistic development of students (Izáková & Hrušovská, 2009; Bertills et al., 2018). Survey of School Physical Education (Unesco, 2023) provides information on teaching physical education worldwide. Teachers' qualifications stand as an important criterion influencing the quality of education. ± 52% (just) of teachers (physical education) in primary education are qualified; however, the remaining (± 48%) are not qualified enough in teaching physical education, compromising the quality of students' education and/or diminishing the correlations between teachers' qualifications and students' attitudes towards physical education (Sucuoglu & Atamturk, 2020). Students who have more positive attitudes towards physical education participate more in physical activities outside of school (Adamčák et al., 2023).

Teaching gymnastics (primary education) is an important component of each physical education curriculum, aimed at fostering the development (i.e., cognitive, physical) of students. Teachers play an important role in delivering gymnastics, shaping students' attitudes towards physical activity, and promoting (their) health (Adamčák et al., 2023). Gymnastics provides (unique) benefits to students' development during the formative years. It enhances (physical) fitness by improving balance and coordination and promotes (cognitive) skills, in particular, concentration and awareness by means of mastering sequences (movements) in gymnastics (Baumgarten & Pagnan-Richardson, 2010).

Teachers' preferences of teaching gymnastics (primary education) manifest pedagogical beliefs, educational background, and practical experiences (Kremnický, 2020). Teachers (may) integrate gymnastics into physical education programs (broader), aligning lessons with objectives of their curriculum and educational standards to ensure development of skills. Despite its benefits, teaching gymnastics (primary education) introduces challenges. Limited resources, including equipment and space, may constrain the implementation of gymnastics in schools, impacting the quality and scope of instruction (Adamčák et al., 2023). Ensuring students' safety during gymnastics remains an utmost concern.

Teaching gymnastics (primary education) remains a challenging, complex task, influenced by various factors, in particular, teachers' experiences (length of teachers' careers). Understanding how it intersects is important in terms of optimizing gymnastics (education) in primary schools (Rudd et al., 2017). Teachers with longer careers (length) are presumed to possess greater pedagogical experiences (expertise) and instructional strategies developed by years of practice. Beginning teachers may approach gymnastics with perspectives influenced by recent educational training and evolving curricular demands (Ramos & Ruiz, 2016). Teachers' preferences of teaching gymnastics (primary education) are shaped by educational attainments. Experienced teachers may emphasize traditional methods of teaching, whereas beginning teachers may integrate inno-

vative methods (approaches) and learning environments. The length of teachers' careers may influence the confidence levels, motivation and identity in teaching gymnastics. Advancing in their careers, teachers develop adaptations to meet diverse students' needs (Collie & Martin, 2016). Understanding how it influences teaching preferences may explain initiatives at enhancing gymnastics instruction in settings.

Because many (research) gaps remain in literature, in terms of Slovak scale (to the best of the authors' knowledge), the present study was aimed at analyzing and comparing teachers' preferences of teaching gymnastics in primary education.

Methods

Participants

Regarding the study aim (see *Aim of Study*), a 3-question survey (teachers' preferences of teaching gymnastics) was carried out during 18 weeks (June 1 – September 30, 2023), aiming at 1246 (100%) teachers in primary education. Teachers in primary education (1246, 100%) (i.e., survey group) constituted a convenience sample, recruited via email (Sappleton & Lourenço, 2016). The recruitment (process of selection) of the survey group (1246, 100%) was carried out during 18 weeks (June 1 – September 30, 2023) at regular intervals (1x/ week; Mon), aiming at selective sampling, in particular, educational attainment (career level): (i) Beginning teachers (490, 39.32%), (ii) Experienced teachers (756, 60.68%) (Table 1). The 3-question survey (teachers' preferences of teaching gymnastics) covered 1246 (100%) teachers in primary education (8 regions of Slovakia), employed in public schools, which equaled 8.14% (15295) teachers in primary education in Slovakia. An adequate sample size of the survey group (1246, 100%) was determined by means of conventional standards: (i) teachers in primary education (15295); (ii) estimation error of ± 4%; (iii) variance of 50%; (iiii) estimation reliability of 99% ($1 - \alpha$).

Evaluating (e.g., analyzing, comparing) teachers' preferences for teaching gymnastics in primary education was carried out in accordance with ethical standards as laid down in 1964 Declaration of Helsinki and its later amendments and/or comparable ethical standards. All subjects (1246, 100%) provided written informed consent (Harriss et al., 2022).

Table 1
Demographic data of the survey group (*1246, 100%*)

Career Level		
Beginning teachers		490 (n), 39.32%
Experienced teachers		756 (n), 60.68%
Gender		
Beginning teachers	Male	320 (n), 65.30%
	Female	170 (n), 34.70%
Experienced teachers	Male	546 (n), 72.20%
	Female	210 (n), 27.80%
Age		
Beginning teachers		25.30 ± 0.60
Experienced teachers		50.30 ± 4.60

(n) – Number of teachers, **%** – Percentage, **±** – Plus/minus sign.

Measures and Procedures

The 3-question survey (teachers' preferences of teaching gymnastics) was carried out during 18 weeks (4 months) (June 1 – September 30, 2023), aiming at 1246 (100%) teachers in primary education: (i) Beginning teachers (490, 39.32%); (ii) Experienced teachers (756, 60.68%). Creating the 3-question survey (instrument) made it easier to evaluate (comparative analysis) the data, which consisted of 2 sections: (i) Demographic data (age, gender, career level) (Table 1); (ii) Survey items consisting of 4 questions (1 question/ 4 answers) : (i) Asking about one's teaching unit (thematic) in primary education (Table 2); (ii) Gymnastics equipment (traditional) in primary education (Table 3); (iii) Material equipment (gymnastics) in primary education (Table 4) (Adamčák et al., 2023). The 3-question survey was (available) online, collecting the data (Microsoft Forms, M. Office 365). The 3-question survey was chosen because of cost effectiveness, time saving, and easy access (Adamčák et al., 2023). Feedback (available) indicated no issues of design (descriptive-comparative).

Data analysis

Available data of the survey group (1246, 100%) was tabulated in database design (i.e. descriptive-comparative) (Adamčák et al., 2023). Incidence of responses (each item) of the survey group (1246, 100%) was evaluated (i.e., comparative analysis) by using Ibm Spss Modeler (Version 26). After cleaning available data of the survey group (1246, 100%), descriptive (percentage – %, arithmetic mean – $\bar{x}$) and inferential (chi-square test – $\chi 2$) statistics was used to evaluate the data (clean). Descriptive statistics described the basic features of the

survey group (1246, 100%) (Rana & Singhal, 2015). Chi-square test (χ2), whose significance level (α) was 0.01 and 0.05., evaluated the differences among 1246 (100%) teachers in primary education: (i) Beginning teachers (490, 39.32%), (ii) Experienced teachers (756, 60.68%) (Table 1) (Turhan, 2020).

Results

Asking about one's Teaching Unit (Thematic) in Primary Education

Regarding the study aim, Table 2 illustrates the question on teaching units (thematic) of 1246 (100%) teachers in primary education (Table 2). 30.50% (380) of teachers in primary education believed that teaching gymnastics (dance) was demanding, compared to outdoor adventure (108, 8.60%). Health (fitness) was inscribed by 239 (37.46%) teachers in primary education out of 1246 (100%); in particular, 160 (32.86%) beginning teachers and 318 (42.06%) experienced teachers. Athletics was inscribed by 56 (9.56%) teachers in primary education. Sports games as a teaching unit (thematic) was chosen by 85 (14.10%) teachers in primary education.

Differences between 1246 (100%) teachers in primary education; in particular, 490 (39.32%) beginning teachers and 756 (60.68%) experienced teachers, were significant (statistically, $p < 0.01$) ($\chi^2_{(4)} = 3.08$ E-05; $p = 26.04$) (Table 2).

Table 2
Asking about one's teaching unit (*thematic*) *in primary education* (*1246, 100%*)

Survey item – Question 1		
	Beginning teachers	**Experienced teachers**
Outdoor adventure	48 (n), 9.80%	58 (n), 7.80%
Gymnastics, Dance	138 (n), 28.16%	242 (n), 32.02%
Sports games	84 (n), 16.94%	86 (n), 11.24%
Health, Fitness	160 (n), 32.86%	318 (n), 42.06%
Athletics	60 (n), 12.24%	52 (n), 6.88%
$\chi^2_{(4)}$ = 3.08 E-05; P = 26.04		

(n) – Number of teachers, **%** – Percentage, **χ^2** – Chi-square (test), **E –** 10 to minus, **P** – Value.

Gymnastics Equipment (Traditional) in Primary Education

Smartphone Table 3 illustrates (shows) gymnastics equipment (traditional) in primary education (1246, 100 %). 62.34% (786) of teachers in primary education used traditional gymnastics equipment (bars, rings), compared to 1.92% (24) who did not teach gymnastics (at all) ($\chi^2_{(3)} = 19.54$; $p = 0.0002$) (Table 1). Non-traditional (mats, rollers) gymnastics equipment was used by 85 (14.20%) teachers in primary education. 132 (10.60%) teachers in primary education, in

particular 22.04% (108) of beginning teachers (490, 39.32%) and 21.02% (158) of experienced teachers (756, 60.68%) used the combination of gymnastics equipment.

Differences between 1246 (100%) teachers in primary education, in particular, 490 (39.32%) beginning teachers and 756 (60.68%) experienced teachers, were significant (statistically, $p < 0.01$) ($\chi^2_{(3)} = 19.54$; $p = 0.0002$) (Table 3).

Table 3
Gymnastics equipment (*traditional*) *in primary education* (*1246, 100%*)

Survey item – Question 2		
	Beginning teachers	**Experienced teachers**
Not teaching	10 (n), 2.04%	14 (n), 1.84%
Traditional	292 (n), 59.40%	494 (n), 65.26%
Non-traditional	80 (n), 16.52%	90 (n), 11.88%
Traditional + Non-traditional	108 (n), 22.04%	158 (n), 21.02%
	$\chi^2_{(3)} = 19.54$; P = 0.0002**	

(n) – Number of teachers, **%** – Percentage, **χ^2** – Chi-square (test), **E** – 10 to minus, **P** – Value, ** – $P < 0.01$.

Material Equipment (Gymnastics) in Primary Education

Table 4 illustrates material equipment (gymnastics) in primary education (1246, 100%). 42.78% (532) of teachers in primary education believed that material equipment, available at schools, for teaching gymnastics was sufficient, compared to 20.14% (250) who believed the contrary (insufficient). 3.28% (16) of beginning teachers (490, 39.32%) and 2.38% (18) of experienced teachers believed that material equipment in teaching gymnastics was excellent (Table 4). 214 (17.18%) teachers in primary education believed that material equipment, available in schools, for teaching gymnastics was good (162, 33.06% – beginning teachers; 266, 35.20% – experienced teachers).

Table 4
Material equipment (*gymnastics*) *in primary education* (*1246, 100%*)

Survey item – Question 3		
	Beginning teachers	**Experienced teachers**
Excellent	16 (n), 3.28%	18 (n), 2.38%
Good	162 (n), 33.06%	266 (n), 35.20%
Sufficient	216 (n), 44.08%	316 (n), 41.92%
Insufficient	96 (n), 19.58%	156 (n), 20.50%
	$\chi^2_{(3)} = 0.64$; P = 1.68	

(n) – Number of teachers, **%** – Percentage, **χ^2** – Chi-square (test), **E** – 10 to minus, **P** – Value.

Differences between 1246 (100%) teachers in primary education, in particular, 490 (39.32%) beginning teachers and 756 (60.68%) experienced teachers, were insignificant ($p > 0.05$) ($\chi^2_{(3)} = 0.64$; $p = 1.68$) (Table 4).

Discussion

Examining the teachers' preferences for teaching gymnastics in primary education in relation to the length of teachers' career may be demanding because of its subjective nature (Adamčák et al., 2023). The authors employed instruments (the 3-question survey) to evaluate the differences ($p < 0.01, 0.05$) between 1246 (100%) teachers in primary education, in particular, 490 (39.32%) beginning teachers and 756 (60.68%) experienced teachers. It is important to select instruments, which are sensitive in nature, educational attainment, and align with the aims of one's study.

30.50% (380) of teachers in primary education believed that teaching gymnastics is demanding (Table 2). 52.98% of beginning teachers (355, 100%) believed that teaching gymnastics was unsatisfactory (Robinson et al., 2022). Beginning teachers (355, 100%) included those (52.98%) who felt unable to teach gymnastics because of: (i) lack of skills; (ii) the fact they did not like it; (iii) the fact they did not know how to teach it; (iiii) it being a demanding (dangerous) teaching unit. Lack of attempts to teach gymnastics is due to physical education teachers' strong focus on other content and their lack of competence and/ or confidence in teaching (Robinson et al., 2022; Nemec et al., 2022). Regarding (our) results, 1.92% (24) of teachers in primary education did not teach gymnastics (at all). Common reasons for not teaching gymnastics are insufficient competences (Ramos & Ruiz, 2016; Mischenko et al., 2023). The results of the study on inclusion of gymnastics in primary education teaching in Slovenia are similar to ours. Gymnastics as a teaching (thematic) unit seems demanding to Slovenian teachers (Kovač et al., 2020).

Instructions of skills in gymnastics was satisfactory to beginning teachers (40.22%), reflecting their enthusiasm (40.22%). Beginning teachers (40.22%) began to teach gymnastics because of passion, adhering to pedagogical methods acquired at university (Robinson et al., 2022). Authentic professional induction transpires by practical experience and interactions between teachers (beginning and experienced). Teachers enhance learning by overcoming the existing communication barriers and engaging in dialogue (Hargreaves, 2000; Borko, 2004).

Reasons given by teachers for not teaching gymnastics at the beginning of their careers (355, 100%) was inadequate working conditions, in particular, lack of resources (infrastructure) (45.90%), lack of teacher training (10.22%) (Robinson et al., 2022). 42.78% (532) of teachers in primary education believed that material equipment available at schools for teaching gymnastics was sufficient, compared to 20.14% (250) who believed the opposite (insufficient) (Table 4).

The analysis of the teachers' answers uncovered that most of the time (55%) in teaching gymnastics was devoted to exercises in floors, followed by vaulting (Kremnický, 2020). The least used equipment (material) were bars. It was surprising that teachers did not use 6-meter inflatable mats. Regarding our results, non-traditional (mats, rollers) gymnastics equipment was used by 14.20% (85) of teachers in primary education.

Connections between gymnastics and a declining interest in physical activity in students may be ascribed to several factors, including the perception of gymnastics as traditional (rigid) sport (Piepiora et al., 2024). Gymnastics (often) involves strict routines and demanding exercises, which may fail to engage students who prefer more fun and modern forms of physical activity. Students may find certain sports like gymnastics less attractive because of its structure, leading to decreased participation (Giolo-Melo, Pacheco, 2023). Generational changes play an important role in shaping attitudes and behaviors of students towards physical activity (e.g., gymnastics, in our case). Generation of (Baby) Boomers do prefer exercises of routines, while enjoyable forms of exercise are preferred by Generation X. Millennials (Gen Y) do associate physical activity with personal development. Gen (Generation) Z engages in useful exercises (only), smart technology in physical activity is preferred by Generation Alpha (Piepiora et al., 2024). Tailoring physical education approaches (gymnastics in our case) to each generation's preferences may help address the declining interest in physical activity (Sobolenko et al., 2020).

Conclusions

Examining the teachers' preferences for teaching gymnastics in primary education in relation to the length of teachers' careers (educational attainments) provides important understanding of factors influencing the instructional practices in the setting of primary education. Such insights are important in developing (targeted) interventions that support the (professional) growth and pedagogical efficacy of teachers, enhancing the quality of physical education in schools. The length of teachers' careers plays an important role in shaping their attitudes towards gymnastics. Beginning teachers, while enthusiastic, often lack pedagogical experience and confidence necessary to integrate gymnastics into the curriculum.

Our research shows how important it is for teachers in primary education at different career levels to keep learning and get support. It is important to help beginning (new) teachers improve necessary skills in teaching and feel confident at teaching gymnastics (primary education). It helps in creating better learning experience for students. Giving experienced teachers an opportunity to share ideas and best ways of teaching may make teaching environments better for everyone in primary schools (i.e. teachers, students).

STATEMENT OF ETHICS

This study was conducted in accordance with the World Medical Association Declaration of Helsinki. The study protocol was reviewed and approved by the Artistic and Pedagogical Council of Faculty of Performing Arts, Academy of Arts in Banská Bystrica, Slovakia (October 14, 2024, Banská Bystrica, Slovakia). Participants provided written informed consent to participate in this study.

DECLARATION OF CONFLICTING INTERESTS

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AUTHORS' CONTRIBUTIONS

M. Marko: Conceptualization; Methodology; Formal analysis; Data Curation; Writing – Original Draft; Writing – Review and Editing; Visualization; Supervision; Project administration; Funding acquisition.
Š. Adamčák: Conceptualization; Methodology; Formal analysis; Data Curation; Writing – Original Draft; Writing – Review and Editing; Visualization; Supervision; Project administration; Funding acquisition.
M. Slováková: Methodology; Validation; Investigation; Resources; Writing – Review and Editing; Project administration; Funding acquisition.
K. Görner: Methodology; Validation; Investigation; Resources; Writing – Review and Editing; Project administration; Funding acquisition.

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