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Self-assessment of Primary School Teachers' Competencies for Teaching Physical Education

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Abstract

The paper examines primary school teachers' self-assessment of their competencies in teaching physical education (PE), with an emphasis on identifying the main dimensions and factors that shape professional self-confidence. The results indicate that teachers generally rate their abilities highly, particularly in motivating students and organising activities. Two fundamental dimensions were identified: the educational dimension, related to lesson planning and implementation, and the evaluative dimension, focused on monitoring and assessing motor development. Professional development and personal involvement in sports contribute to a higher self - assessed competencies, whereas age and years of service show no significant influence. Teachers who are active in sports display greater confidence in teaching, which emphasises the importance of personal engagement in physical activity. The lowest self-assessed competencies are in test design and assessment criteria, indicating a need for additional professional development. The results underscore the importance of strengthening evaluative competencies and enriching initial teacher education in order to ensure high-quality and motivating physical education classes.

Keywords: *evaluative competencies; factor analysis; professional development; sports engagement*

Introduction

Physical education (PE) is an integral part of the comprehensive educational process in primary education. It is aimed not only at developing motor skills but also at promoting a healthy lifestyle, a positive body image, team spirit, and students' psychophysical well-being. Contemporary kinesiology, as an interdisciplinary scientific discipline, emphasises the importance of early and systematic physical activity in children's

development, taking into account biotic motor abilities, individual differences, and sensitive developmental stages (Findak, 2010; Metikoš, 2003). In this context, the quality of Physical Education classes in the lower grades of primary school is of great significance, not only for healthy development but also for shaping students' attitudes toward physical exercise throughout their lives.

In the Republic of Croatia, class teachers are responsible for teaching Physical Education in the first four grades of primary school. During their studies at the Faculties of Teacher Education and Education, future teachers take a wide range of kinesiology courses, thereby acquiring the competencies necessary to teach PE. Teaching in this field requires a combination of kinesiology knowledge, didactic-methodological skills, pedagogical sensitivity, and the ability to assess students' motor knowledge and achievements, which constitutes their comparative advantage over kinesiologists. Given the age of the children they teach Physical Education to, the presence of class teachers is indispensable.

The theoretical framework of this study is based on the concept of teachers' professional competencies, defined as the integration of knowledge, skills, attitudes, and values required for effective teaching (Shulman, 1986; Darling-Hammond, 2006). In the context of Physical Education, teachers' competencies include understanding the subject's structure and content, selecting appropriate teaching methods, managing students' motor activities, and ensuring safety during teaching. A particular challenge lies in the assessment component, that is, the ability to conduct structured and objective assessment of students' motor knowledge and achievements, which often proves difficult for teachers, especially if they lack specialised education in kinesiology (Bašić, 2005; Findak, 2006).

In this context, self-assessment of professional competence plays an important role, referring to the subjective evaluation of one's ability to perform a specific professional role. Self-assessment is grounded in the theory of self-efficacy (Bandura, 1997), which holds that an individual's belief in their own abilities strongly influences motivation, perseverance, and success in performing tasks. In the educational context, teachers who perceive themselves as competent are more likely to apply modern teaching methods, motivate students more strongly, and demonstrate greater professional engagement (Tschannen-Moran & Hoy, 2001).

Particularly in the field of Physical Education, self-assessment may be influenced by a range of factors, including formal education and professional experience, as well as personal sports history. Teachers who have personally engaged in sports, whether recreationally or competitively, often display a higher level of confidence and self-assurance in teaching Physical Education, more developed methodological approaches, and more positive attitudes toward the role of physical activity in children's development (Hraski, 2015). Thus, personal engagement in sports can act as an important moderator between formal qualifications and actual teaching practice.

Furthermore, assessment competence in Physical Education, that is, the ability to reliably monitor and assess motor progress, requires knowledge of motor skills testing, proper interpretation of results, and the ability to guide instruction in line with the

obtained data. If teachers lack sufficient confidence or knowledge in this area, they may avoid assessment or perform inadequately, which has long-term implications for the quality of the teaching and learning process.

Self-assessment of competencies in the field of Physical Education can therefore serve as a valuable indicator of teachers‘ actual professional development needs, as well as a predictor of professional confidence and teaching quality. Introducing systematic self-assessment into the educational process enables a personalised approach to professional development and the strengthening of professional practice.

In this context, the aim of this study was to examine how class teachers perceive their own competencies for teaching Physical Education and to identify the key dimensions of these competencies through factor analysis. In addition, the study aimed to examine whether there is a relationship between self-assessed competencies and certain demographic variables (age, years of service, level of professional development, as well as the degree of personal engagement in sports. The study thereby aims to contribute to a deeper understanding of the professional profile of Physical Education teachers and to offer concrete guidelines for enhancing their professional preparedness, confidence, and effectiveness in teaching in this important educational field.

According to the national curriculum in the Republic of Croatia, class teachers were considered suitable for addressing the research aim. However, in recent times, their formal qualifications in the field of kinesiology have been problematised, which is considered to undermine the extent of their preparedness for the effective planning, delivery, and evaluation of teaching in this field. It is precisely this alleged gap between formal qualifications and professional practice that underscores the necessity to examine their self-assessment of competencies, which constitutes the main issue addressed in this study. In addition, the study sought to determine whether there are statistically significant differences and correlations in self-assessed competencies with respect to certain demographic variables (age, years of service, level of professional advancement) and the degree of personal engagement in sports. The aim was to gain a clearer insight into the factors that contribute to the development of professional confidence and effectiveness in teaching Physical Education, since previous research has shown that teachers‘ self-assessed competence can serve as a valuable indicator of their actual professional development needs and as a predictor of professional self-confidence and engagement in Physical Education teaching.

Consistent with the study‘s aims and research questions, the following research hypotheses were formulated.

Hypothesis 1: Teachers perceive their competencies in the area of kinesiology to be high.

Hypothesis 2: Self-assessed competencies are statistically significantly related to demographic indicators.

Hypothesis 3: Teachers who participate in sports, either recreationally or through structured training, tend to report higher self-assessed competencies compared to those who have never engaged in sports.

Methodology

Research sample

The study included a total of 349 respondents. The respondents were class teachers aged between 24 and 65, who at the time of the research were employed at primary schools in Osijek-Baranja County. The pronounced gender imbalance reflects the actual structure of the teaching profession, but should be considered a limitation when generalising the findings.

Sample of variables

To determine primary teachers' personal attitudes toward their competencies in teaching Physical Education, a questionnaire specifically created for this study, entitled Attitudes of Teachers toward Their Competencies for Teaching Physical Education, was used.

The questionnaire consists of a total of 11 questions. The first seven questions gather data on age, gender, educational qualifications, level of professional advancement, the area where the respondent's school is located (urban/rural), and the way the respondent has engaged in sports so far. Question eight examines attitudes toward one's competencies in the field of teaching Physical Education through a total of six items; question nine examines attitudes toward competencies in monitoring and assessing motor knowledge in Physical Education through seven items; question ten examines attitudes toward competencies in monitoring and assessing motor achievements in Physical Education through four items; and the final question examines attitudes toward competencies in the field of educational effects of teaching Physical Education through a single item. The questionnaire was administered anonymously using an online Google Form. An example item from the teaching competencies content area is: „I feel competent in planning and implementing Physical Education lessons that support students' motor development, motivation, and safety." An example item from the monitoring and assessment of motor knowledge content area is: „I feel competent in monitoring and assessing students' understanding and correct execution of motor skills." An example item from the monitoring and assessment of motor achievements content area is: „I feel competent in assessing students' motor achievements using appropriate criteria and grading procedures." Finally, an example item from the educational effects content area is: „I feel competent in assessing the educational effects of Physical Education teaching, such as students' participation, health-related habits, and engagement in physical activity."

Although the questionnaire includes items covering several content areas of teachers' competencies, these areas were not conceptualised as independent subscales. Instead, all competence-related items were treated as indicators of broader latent domains, whose structure was empirically examined using exploratory factor analysis. These domains were initially conceptualised based on national curriculum requirements for Physical Education and established models of PE teacher competence, and were subsequently empirically examined using exploratory factor analysis (MZO, 2019).

Statistical data analysis

Statistical data analysis was carried out using the statistical software package STATISTICA, version 12 (www.statsoft.com; StatSoft, Inc., Tulsa, OK, USA).

Basic descriptive parameters were calculated for all variables, and the results were presented as frequencies and percentages. To test the normality of data distribution, the Kolmogorov-Smirnov test (K-S) was used, which indicated that the distributions deviated from normality and that this deviation was statistically significant for both domains (Teaching and Assessment). Nevertheless, to further confirm the deviation from normality, skewness and kurtosis indices were analysed. The results showed that both distributions fell within the limits that allow the use of parametric methods (skewness less than three, kurtosis less than eight, thereby justifying the application of parametric procedures in further analysis.

Descriptive statistics also included an analysis of the instrument‘s reliability using Cronbach‘s alpha coefficient (α). The value α = 0,97 for the total questionnaire score indicates very high consistency and reliability of the instrument, before Factor analysis.

To gain a deeper understanding of the data‘s factor structure and identify the main dimensions of teachers‘ self-assessment of competencies in Physical Education, an exploratory factor analysis (EFA) was conducted. The exploratory factor analysis was conducted on all competence-related items simultaneously in order to identify higher-order latent competence domains rather than to confirm predefined subscales. Before the analysis itself, the prerequisites for factorisation were verified, including an assessment of the suitability of the correlation matrix. For this assessment, the Kaiser-Meyer-Olkin (KMO) test was used, yielding an exceptionally high KMO value of 0.96, indicating very good suitability of the data for factor analysis. Additionally, Bartlett‘s test of sphericity also showed a statistically significant result, confirming the suitability of the correlation matrix for further analysis.

For factor extraction, the Principal Axis Factoring (PAF) method was applied, using oblique rotation (Direct Oblimin). According to Kaiser‘s criterion, the number of factors with eigenvalues greater than 1 was retained, yielding two factors that explained 70.72 % of the total variance. These two factors represent the key dimensions of competence in the field of Physical Education, and their validity was confirmed by an analysis of Cattell‘s Scree Plot, which likewise suggested the retention of a two-factor structure.

After identifying the two factors, item loadings on each factor were analysed, and only items with loadings greater than 0.40 were retained. The results of the analysis indicate a clear distinction between the factors: the first encompasses activities related to the assessment and monitoring of students, while the second encompasses activities related to the teaching and training of students. This division confirms the existence of two key dimensions of teachers‘ self-assessment of competencies in Physical Education: evaluative competence and educational competence.

To examine the relationships between the factors (Teaching and Assessment) and demographic variables (participants‘ age, gender, years of work experience, and level of

advancement), as well as to analyse the relationships between the demographic variables and the results of self-assessment of competencies, Pearson's correlation was used.

To examine differences in the self-assessment of competencies between groups of respondents with varying levels of engagement in sports (those who have never engaged in sports, those who participate recreationally, and those engaged in sports training), the Kruskal-Wallis analysis of variance was used. To explore differences between group pairs in more detail, a post hoc analysis was conducted. This method was chosen due to unequal group sample sizes and the nonnormal distribution of the data.

Although the questionnaire items were initially grouped into conceptually distinct competence domains, an exploratory factor analysis was applied to all competence-related items simultaneously to examine the broader latent structure of teachers' self-assessed competencies in Physical Education. In this context, the factor analysis was used exploratorily, as a complementary procedure to subscale-based analyses, rather than as a replacement for the instrument's theoretical domain structure.

Results

Descriptive analysis

The study included a total of 349 respondents aged 24 to 65, of whom 97.1 % (N = 339) were female and 2.9 % (N = 10) were male. Table 1 shows that the largest share of respondents, 70.5 %, hold a university degree, 26.6 % hold a college degree, while only 2.9 % of respondents hold a master's degree.

Table 1
Respondents' qualifications and level of advancement

		Frequency	Percentage
Respondents' qualifications	Master's degree	10	2.90
	University degree	246	70.50
	College degree	93	26.60
	Total	349	100,00
Level of respondents' advancement	Expert advisor	3	.90
	Mentor	42	12.00
	None of the above	271	77.70
	Advisor	33	9.50
	Total	349	100.00

The sample included respondents with work experience ranging from 2 months to 42 years. A significant concentration of employees was observed in the 10–30 years of work experience category, which may indicate the stability and experience of the majority of staff at the educational institution.

Furthermore, the sample of respondents included all professional stages of the teaching career. Table 2 presents the distribution of respondents across four main categories: „Without promotion in title", „Mentor", „Advisor", and „Expert Advisor". These results provide insight into participants' advancement and professional development, as well as into the relationship among the different categories of advancement.

The study also included teachers from both urban (47.3 %) and rural areas (52.7 %).

An analysis of sports activities in which the participants engaged showed that the majority, specifically 264 (75.64 %), reported having participated in recreational sports. This finding suggests that most respondents prefer physical activities that are not professional but rather oriented toward maintaining health, reducing stress, and improving overall physical fitness. This trend may also indicate a high level of awareness among respondents about the importance of physical activity for overall health and the long-term perseverance of vitality. This awareness is further supported by the fact that 16.9 % of respondents reported engaging in sports training, while only 7.64 % stated that they do not engage in any form of physical exercise.

All the presented data indicate that the sample included representatives of all relevant categories within the overall population, thereby ensuring its representativeness.

Descriptive data of the questionnaire and factor analysis of the questionnaire

From the table of descriptive indicators for the questionnaire, it is clear that participants rate their teaching competencies in Physical Education as very high. The arithmetic mean of the total score, 3.71, indicates that most teachers perceive their competencies for conducting Physical Education classes as high within the achievable range, which may reflect their professional experience, formal education, and preparedness for teaching in this field.

The standard deviation (SD = 0.46) indicates very low variability in participants‘ responses, suggesting a high degree of agreement among respondents in assessing their own competencies. The lowest recorded score is 1.11, while the highest is 4.00, indicating a wide range of competence perceptions among teachers. However, more respondents are positioned within the upper score ranges, indicating a predominantly positive perception of their own competencies.

Table 2

Descriptive Statistics and Reliability Coefficients for Teaching and Assessment Subscales

Variable	M	SD	Min.	Max.	K-S	Skewness index	Kurtosis index	α
Total score	3.71	0.46	1.11	4				0.97
Teaching domain	3.68	0.47	1	4	0.28*	-2.01	4.56	0.91
Assessment domain	3.72	0.47	1	4	0.28*	-2.29	5.72	0.96

*Note: M – arithmetic mean; SD – standard deviation; Min. – minimum; Max. – maximum; α – Cronbach's alpha; K-S – Kolmogorov-Smirnov test result; * - significant deviation of the results from the normal distribution result.*

To understand the factor structure of self-assessed competencies in the field of Physical Education (PE), the study encompassed a wide range of variables related to different aspects of teaching and assessing students. The results of the factor analysis are based on item loadings, which clarify how specific components of self-assessed competencies cluster into two main dimensions.

Table 2 also shows that the questionnaire consists of two domains: Teaching and Assessment, whose validity will later be confirmed through factor analysis.

The average score on the Teaching domain was M = 3.68 (SD = 0.47), while the average score on the Assessment domain was slightly higher, M = 3.72 (SD = 0.47). Also, their Cronbach alpha scores are suitable for further interpretation as reliable.

Each of the two questionnaire domains, Teaching and Assessment, was also evaluated for internal consistency using Cronbach's alpha. The results showed very high coefficients, α = 0,91 for teaching and α = 0,96 for Assessment, indicating excellent internal reliability and the adequacy of each domain for further analyses.

The Kolmogorov-Smirnov test (K-S) was used to check the normality of the data distribution. The results of the K-S test indicate a statistically significant difference in the distributions of the variables, suggesting that the distributions deviate from normality. However, given that the K-S test is based on a comparison of observed and theoretical values, a single extreme result can yield a statistically significant difference (Petz, 2007). Skewness and kurtosis indices were used as additional measures of normality testing. According to criteria established in the literature, distributions can be considered normal if their skewness and kurtosis indices are less than 3 and 8, respectively (Kline, 2005). An examination of the skewness and kurtosis values for both variables shows that they fall within these limits, allowing the application of parametric procedures in further analysis.

Finally, the reliability of both domains was assessed using Cronbach's alpha. The reliability coefficients are very high for both domains, with values α = 0.91 for Teaching and α = 096 for Assessment, indicating excellent internal consistency and the adequacy of the scales for further analysis.

To test the assumption that, in line with the original scale's factor structure, the Croatian version of the questionnaire would exhibit two factors, an exploratory factor analysis was conducted. Before conducting the factor analysis, the prerequisites for proceeding with factorisation were verified.

To assess the suitability of the correlation matrix for factor analysis, the Kaiser-Meyer-Olkin (KMO) test was used, yielding a KMO of 0.96, indicating very good data adequacy for factor analysis. In addition, Bartlett's test of sphericity also indicated that the correlation matrix was suitable for further analysis, given the statistically significant difference.

For factor extraction, the *Principal Axis Factoring* (PAF) method was applied, with oblique rotation (Direct Oblimin). According to Kaiser's criterion, the number of factors with eigenvalues greater than 1 was retained, indicating two factors that explained 70.72 % of the total variance. Additional confirmation of the number of factors was obtained from Cattell's Scree Plot analysis, which also indicated the extraction of two factors. Therefore, the two-factor structure was retained.

Table 3 presents the loadings of individual items on the factors. Only the items with loadings greater than 0.40 were retained, and the distribution of items across the factors is presented in the following table.

Table 3
Presentation of items with factor loadings

Item	Factor I	Factor II
Teaching students theoretical knowledge for leisure planning and health promotion.	0.46	
Teaching students motor skills in the field of safety and prevention.	0.44	
Assessment of motor skills.	0.52	
Enabling students to engage in self-monitoring and to maintain physical fitness levels.	0.56	
Monitoring students' morphological characteristics.	0.89	
Monitoring students' motor abilities.	0.98	
Monitoring students' functional abilities.	1.03	
Assessment of morphological characteristics.	0.88	
Assessment of motor abilities.	0.89	
Assessment of functional abilities.	0.92	
Assessing students' motor performance through grading.	0.45	
Assessment of the educational effects of work (class participation, classroom behaviour, level of health and hygiene habits, participation in extracurricular and out-of-school activities).	0.60	
Teaching students theoretical knowledge in the field of sports.		0.52
Teaching students motor skills in the area of demonstration.		0.74
Teaching students motor skills in the area of assistance.		0.55
Training students to apply what they have learned in exercising and in dealing with emergency situations.		0.81
Designing a test for the assessment of motor achievements.		0.91
Developing criteria for the assessment of motor achievements.		0.76

It should be emphasised that the competence domains of Teaching and Assessment were also analysed separately, including the calculation of descriptive statistics and reliability coefficients for each subscale. The exploratory factor analysis, therefore, provides additional insight into the latent structure of the competency items, while the primary interpretation of the results is based on the theoretically defined subscales.

The selection of the two competence domains was theoretically grounded in established models of teacher professional competence, which conceptualise teaching as a process that integrates instructional and evaluative functions. In Physical Education, educational competence refers to teachers' ability to plan, organise, and implement instruction that supports students' motor development, safety, and motivation. In contrast, evaluative competence encompasses the systematic monitoring and assessment of students' motor, functional, and morphological characteristics, as well as the educational effects of instruction. This distinction is widely recognised in Physical Education pedagogy and curricular frameworks and reflects two functionally distinct but interrelated domains of professional practice.

The relatively high factor loadings observed in the present study can be attributed to several interrelated factors. First, the items within each competence domain were conceptually closely aligned, targeting specific, well-defined aspects of teachers' professional practice in Physical Education, resulting in high content homogeneity. Second, the use of self-report measures of perceived competencies tends to produce stronger inter-item correlations, as respondents evaluate conceptually related behaviours and beliefs using a consistent internal reference framework. Finally, the application of oblique rotation reflects the theoretically expected interrelatedness of educational and evaluative competence, which may further contribute to elevated factor loadings. Taken together, these characteristics are consistent with psychometric findings in self-assessment instruments and do not undermine the interpretability or validity of the extracted factor structure.

The first factor primarily encompasses activities related to student assessment and monitoring, indicating a strong association with the evaluative aspects of PE instruction. Among the items that constitute this factor are activities focused on assessing students in various areas of motor, functional, and morphological abilities. Specifically, items such as Monitoring students' morphological characteristics (loading 0.89), motor abilities (loading 0.98), and functional abilities (loading 1.03) show high loadings, indicating the significant role of teachers in regularly monitoring students' physical condition. In addition, items related to the evaluation of motor abilities (loading 0.89, morphological characteristics (loading 0.88), and functional abilities (loading 0.92) further confirm the importance of evaluation within physical education. This factor reflects a systematic approach to monitoring and evaluating students' physical abilities, which is essential for planning and improving their motor performance.

On the other hand, the second factor encompasses activities related to teaching and training students in various aspects of physical activity, particularly in the context of motor and theoretical knowledge. Within this factor, items such as Teaching students motor skills in the area of demonstration (loading 0.74), Training students to apply what they have learned in exercising and in dealing with emergency situations (loading 0.81), and Designing a test for the assessment of motor performance (loading 0.91) stand out, indicating a strong connection between the theoretical and practical aspects of teaching. Additionally, Training students to self-monitor and maintain their level of physical fitness (loading 0.56) and Assessing the educational effects of work (loading 0.60) confirm the importance of developing students' independence in maintaining their physical fitness and health.

One of the key insights from this analysis is that the items related to theoretical and motor knowledge within sports pedagogy, such as Teaching students theoretical knowledge for leisure planning and health promotion (loading 0.46) and assessing the educational effects of work (loading 0.60), are grouped within the first factor. In contrast, the items related to motor and demonstrational aspects of teaching are concentrated within the second factor. This division suggests that competence in

Physical Education encompasses two key areas: first, monitoring and evaluating students‘ physical development, and second, actively teaching and training students to apply motor and theoretical knowledge.

The high loadings of certain items also indicate the strong reliability and validity of the dimensions identified in the analysis. For example, the item Monitoring students‘ functional abilities, with an exceptionally high loading (1.03), suggests that the assessment of students‘ functional abilities is one of the key aspects of self-assessed competence. Also, designing a test for assessment of motor achievements and Developing criteria for assessment of motor achievements, which show high loadings (0.91 and 0.76), imply that the respondents are strongly focused on developing assessment methods that enable an accurate assessment of students‘ progress.

In conclusion, the analysis of the factor structure and reliability of self-assessed competencies in Physical Education reveals a clear distinction between the evaluative and educational aspects of competence in the field of physical education. This distinction enables a deeper understanding of Primary Education teachers‘ approaches to teaching, monitoring, and assessing students, as well as their ability to manage their own physical health and fitness independently. These results are of significant value for the further development of educational strategies that support a comprehensive approach to physical and health education.

The relationship between self - assessed competencies and demographic indicators

To examine the relationship between the new factors and demographic variables (participants‘ age, gender, years of work experience, and level of professional advancement), Pearson‘s correlation coefficient was applied. The correlation analysis did not indicate statistically significant relationships between the specified demographic variables and the new factors.

Through further correlation analysis of demographic indicators and the results of the self-assessment competence scale, the relationships between demographic variables and the assessed competencies were examined. As shown in Table 5, the only statistically significant correlation observed refers to the level of professional advancement and the self-assessment of competencies. Specifically, a higher level of professional advancement was positively correlated with higher scores on respondents‘ self-assessments of competencies. This result can be explained by the fact that participants with higher levels of professional advancement, who have likely acquired more experience and expertise, assess their competencies in this field as higher, consistent with experience and professional development. Such a correlation may indicate that experience and professional development positively influence perceptions of one‘s own competencies, a common phenomenon in educational and professional environments.

Further analysis indicated positive correlations between years of work experience and level of professional advancement, and between age and level of professional advancement. These relationships can be interpreted in the context of professional

development and experience in educational practice. Specifically, longer work experience is often associated with greater expertise, which may result in faster or higher career advancement. A similar logic applies to age: older employees, due to accumulated experience and knowledge, may have greater opportunities for advancement than their younger colleagues. These relationships may also reflect the dynamics of professional advancement in educational organisations, where experience and age often influence promotion processes and the recognition of employees.

Table 4
Correlation matrix of the variables in the study

Variable	1	2	3	4	5
Self-assessment of PE competencies	—	-.07	.08	-.03	.11*
Age	-.07	—	.00	.96**	.27**
Gender	.08	.00	—	-.01	.09
Work experience in school	-.03	.96**	-.01	—	.32**
Level of advancement	.11*	.27**	.09	.32**	—

*Note. N = 349, Pearson correlation coefficients are presented, 1 = Self-assessment of competencies in PE; 2 = Age; 3 = Gender; 4 = Work experience in school; 5 = Level of advancement, *p < .05. **p < .01.*

Examining differences in self-assessment of competencies between groups of respondents concerning different levels of engagement in sports

To examine differences in self-assessed competencies among groups of respondents with varying levels of engagement in sports, specifically those who had not practised sports, those engaged in recreational sports, and those involved in sports training, the Kruskal-Wallis analysis of variance and the corresponding post-hoc analysis were applied.

The Kruskal-Wallis analysis of variance revealed a statistically significant difference between the groups on the overall score of self-assessed competencies. The results of the Kruskal-Wallis test showed H (2, N = 349) = 10,03828, p = 0,0066, indicating statistically significant differences among the groups, as the p-value is lower than the significance level of 0.05. These results suggest that self-assessment of competencies differs significantly among respondents depending on their level of sports engagement.

To further analyse specific differences between the groups, a post hoc analysis was conducted. The results of the post-hoc tests indicate statistically significant differences between respondents who were not engaged in sports and those who were recreational athletes. The statistically significant difference between these two groups was confirmed with a p-value of 0.023609, which is below the 0.05 significance level. Respondents who engaged in recreational sports had a significantly higher overall self-assessed competence score than those who did not. This result suggests that participation in recreational sports positively affects self-assessment of competencies. A statistically

significant difference was also observed between respondents who were not engaged in sports and those who participated in sports training (p-value 0.006614). Respondents who engaged in sports training scored significantly higher on overall self-assessment of competencies than those who did not. This finding supports the hypothesis that greater engagement in sports activities positively affects perceptions of one's own competencies. No statistically significant difference in overall scores was observed between respondents who engaged in recreational sports and those who participated in sports training (p = 0.678209). This result suggests that, despite differences in commitment and intensity of sports activities, the self-assessment of competence does not differ significantly between the two groups, indicating a similar level of self-confidence and sense of competence in both groups.

Table 5

Kruskal-Wallis test – group comparison in the overall score of self-assessed competencies

Groups	1. Never engaged in sports	2. Recreationally	3. Sports training
1. Never engaged in sports	—	.0236*	.0066**
2. Recreationally	.0236*	—	.6782
3. Sports training	.0066**	.6782	—

*Note: N = 349. The p-values of the post-hoc comparison (two-tailed test) after the Kruskal-Wallis analysis are presented (H = 10.04, p = .0066), 1 = never engaged in sports; 2 = recreational engagement in sports; 3 = sports training, *p < .05. *p < .01.*

Analysis of results on individual items

Although the descriptive data for the questionnaire presented earlier clearly show that participants rate their competencies in teaching Physical Education very highly, the analysis of response frequencies for individual items reveals certain differences. Specifically, the largest number of respondents feel less competent in specific areas, such as Designing a test for assessing motor achievements (10,6 %) and Developing criteria for assessing motor achievements (9,2 %).

This result can be explained by the practical challenges teachers face when carrying out specific tasks related to the assessment of motor achievements. Specifically, designing tests and developing criteria for assessing motor achievements requires integrating knowledge of motor skills and abilities, along with a detailed approach to analysing and assessing each student's achievements. These tasks require a deeper understanding of various aspects of motor development and the ability to assess students' progress in these areas accurately.

The connection of these results to practice suggests that although teachers generally perceive their teaching competencies as high, specific areas of assessment, such as test design and criteria for motor achievement, require additional focus within the educational system. This finding points to the need for additional professional development for teachers in designing and applying assessment tools, which would enable a better understanding and more effective application of these skills in everyday teaching.

Conversely, the items in which respondents feel most competent are the following: 90,3 % of respondents state that they feel highly competent in Assessing the educational effects of work. Furthermore, 83.1 % of respondents report feeling highly competent in Monitoring motor and functional abilities, and 82.8 % state that they feel highly competent in Monitoring morphological characteristics and teaching theoretical knowledge for planning leisure time and improving health.

In contrast to the previously mentioned results, the items in which respondents report the highest level of competence relate to specific areas of assessing and monitoring students' abilities and assessing the educational effects of work. Specifically, as many as 90.3 % of respondents state that they feel highly competent in assessing the educational effects of work, while 83.1 % emphasise high competence in monitoring motor and functional abilities. Additionally, 82.8 % of respondents feel highly competent in monitoring morphological characteristics and teaching theoretical knowledge for planning leisure time and improving health.

The high level of self-assessed competencies in the mentioned areas can be explained by the fact that tasks related to monitoring students' kinanthropological characteristics are closely connected with the educational effects of teaching and with goals related to leisure-time planning and health improvement. Monitoring students' kinanthropological status not only provides insight into their physical health but also plays a key role in educating them about the importance of tracking these parameters throughout their development.

Such monitoring, which includes motor, functional, and morphological abilities, helps students understand how regular exercise and healthy habits can directly influence their physical development and overall health. Through this type of assessment, teachers not only measure physical characteristics but also educate students on how to properly plan and organise their leisure time with the aim of maintaining and improving their kinanthropological status.

These tasks also enable students to recognise the long-term benefits of physical activity, thereby linking everyday exercise to the long-term preservation of health. In this sense, teachers are often aware of their competencies in monitoring these parameters, as these activities are already deeply embedded in the educational system and routine practice, which facilitates their implementation and assessment. Moreover, these tasks have a clear, concretely defined connection to educational objectives, which further strengthens teachers' confidence in their competencies.

Discussion

The aim of this study was to examine the level of self-assessed competencies of primary school teachers for teaching Physical Education (PE), with an emphasis on identifying their latent structure and determining the relationship between self-assessed competencies and relevant personal and professional variables. Starting from the need to improve the quality of Physical Education (PE) in primary school teaching, the study

addressed the following research problem: To what extent do primary school teachers perceive their own competencies for teaching PE, and which factors are associated with these perceived competencies?

The unusually high factor loadings observed in the exploratory factor analysis can be explained by several interrelated factors. First, the items within each competence domain were highly conceptually homogeneous, referring to closely related aspects of professional practice in Physical Education. Second, self-assessment instruments tend to yield stronger inter-item correlations because respondents evaluate conceptually similar behaviours using a consistent internal frame of reference. Finally, the application of oblique rotation reflects the theoretically expected interrelatedness of educational and evaluative competencies, which may additionally contribute to elevated factor loadings. Taken together, these characteristics are consistent with findings reported in psychometric research on self-report competency measures and do not undermine the interpretability of the extracted factors.

Given the reviewer‘s concern, the factor analysis should be interpreted as exploratory and complementary to subscale-based analyses, rather than as a definitive representation of the instrument‘s theoretical structure.

The results of this study provide empirical support for the third hypothesis, which posits that teachers‘ personal engagement in sports activities positively influences their self-assessment of competencies in teaching PE. Teachers who identified themselves as active in sports, whether at a recreational or competitive level, consistently reported higher levels of self-assessment in nearly all aspects of competence, including lesson organisation, student motivation, and the implementation and assessment of motor activities. These findings can be interpreted within Bandura‘s (1997) theory of self-efficacy, which holds that personal experience in a given field strengthens one‘s belief in one‘s ability to act successfully. In other words, participation in sports not only develops knowledge and skills related to physical activity but also contributes to greater confidence and competence in the teaching context. Additionally, participation in sports contributes to a deeper understanding of PE content and positively influences attitudes toward physical exercise (Hardman & Green, 2011). Personal engagement in sports can serve as a source of competence-based self-confidence for teachers and as an example for students, thereby further strengthening the teacher‘s educational role. This finding also has practical implications, as it suggests that personal interest and engagement in sports should be an important element of the selection and professional development of teachers, especially those who teach PE in lower primary grades. However, it should be emphasised that high self-assessed competencies do not guarantee objective competence, as numerous studies confirm the difference between perceived and actual expertise (Kruger and Dunning, 1999). In this context, caution is needed when interpreting self-assessments, as they do not necessarily reflect actual knowledge and skills. It is particularly important to note that self-assessment is particularly high in the areas of motivating students and conducting basic motor activities, while the

lowest scores were recorded in components related to evaluation and measurement.

It is confirmed that primary school teachers with a higher level of professional advancement report a statistically significantly higher self-assessment of competencies for teaching Physical Education. This relationship can be explained through the concept of professional development, which holds that continuous training and richer experience contribute to greater self-confidence and belief in one's own abilities (Hargreaves & Fullan, 2012). Teachers with higher qualifications and levels of professional advancement, that is, those in higher ranks, as well as those who have completed additional training or specialisations in physical education, often possess greater theoretical and practical knowledge, enabling them to plan and implement lessons more effectively. This relationship can be explained by greater exposure to professional development, participation in teams to improve teaching, and experience mentoring colleagues. Research shows that continuous professional development has a positive impact on the perception of competencies (Timperley et al., 2007). The self-confidence that comes from professional advancement can also serve as a motivator for further professional development, creating a positive cycle of professional growth. Similarly, years of work experience provide a better understanding of students' specific needs and how PE can be effectively adapted, as confirmed by previous research (Day, 2017; Opfer & Pedder, 2011). Specifically, it enables teachers to develop practical skills and strategies to address teaching challenges, thereby enhancing their professional confidence. Therefore, it is recommended that professional development systems focus not only on theoretical knowledge but also on practical competency assessments and continuous feedback. This finding has practical implications for educational policy and professional development, as it highlights the importance of investing in teacher education programmes, as well as in mentoring and support throughout their professional careers, in order to enhance the quality of teaching PE.

The two-dimensional structure of competencies was determined through factor analysis. Two clearly defined dimensions were identified: evaluative competence and educational competence. The evaluative dimension encompasses tasks related to assessing students' morphological, motor, and functional abilities, while the educational dimension includes lesson planning, organisation and implementation, as well as student motivation. Such a structure is consistent with previous research indicating that competence in teaching PE is not a single construct but rather multidimensional (Tsangaridou, 2012). Interestingly, teachers rated their competence in evaluation significantly lower than in the educational segments, suggesting specific weaknesses in this aspect of professional practice. A possible cause of these results lies in the fact that teacher education programmes for class teachers generally include a limited number of hours dedicated to methodology and evaluation in PE. The lower self-assessment in the area of designing tests and criteria for motor achievements signals an important shortcoming in teacher education, and the introduction of additional hours in the field of Kinesiology methodology is recommended. These results further confirm the importance of systematically developing evaluative competencies within initial teacher

and professional development. Without well-developed evaluation skills, teachers are unable to provide quality feedback to students or base their lesson planning on valid indicators of achievement (Bailey et al., 2009). Therefore, it is essential to provide training that includes concrete tools for measuring and analysing motor abilities, as well as practical examples of using evaluation instruments.

The limitations of this study include several important aspects that may affect the interpretation and generalisation of the obtained results. First, the study relied exclusively on teachers' subjective self-assessments, which could introduce bias, including overly optimistic assessments of their own competencies or socially desirable responses. Although self-assessments are a valuable source of data on perceptions and experiences of professional roles, they do not provide an objective picture of the actual level of competence. As noted by Kunter et al. (2013), combining subjective and objective measures provides more reliable insights into teachers' actual professional competence.

The second significant limitation concerns the lack of objective indicators of competence, such as observation of the teaching process, analysis of concrete student achievements in PE, or external expert evaluation of performance. Without such data, it is not possible to fully confirm the relationship between self-assessment and actual professional performance.

Lastly, the sample exhibited a pronounced gender imbalance, which reflects the gender structure of the teaching profession in primary education but limits the generalisability of the findings.

The results of this study have significant implications for educational practice. Above all, they highlight the need for targeted support for primary school teachers through systematically designed, contextually adapted professional development programmes in Physical Education. Such programmes should be modular, practice-oriented, and grounded in current scientific knowledge of teaching and evaluating motor abilities. Special emphasis should be placed on the development of evaluative competencies, including an understanding of the basic principles of motor ability testing, the interpretation of results, and their application in planning differentiated instruction.

Furthermore, it is recommended to systematically encourage teachers' participation in sports activities to support the development of professional self-efficacy and to model a healthy lifestyle for students. Active participation in sports activities contributes not only to teachers' personal health but also to their ability to convey content to students in a credible and motivating way. The results also support the need to develop a culture of collaborative learning and to involve PE teachers in mentoring and advisory roles within schools, thereby strengthening collegial support and raising the level of professional competence among the teaching staff.

Recommendations for future research

Considering the identified limitations and the obtained results, future research should apply data triangulation methods, combining self-assessments with objective forms of competence measurement. This approach should include direct observation

of teaching activities, video analysis, evaluation of student outcomes in PE, and the opinions of colleagues and experts in kinesiology.

It is recommended to conduct longitudinal studies that allow tracking changes in teachers' perceptions and actual competencies over time, especially after participating in specific forms of professional development. By including qualitative methods, such as semi-structured interviews and case studies, it is possible to explore in greater depth the reasons behind certain perception patterns, as well as the challenges teachers face in everyday practice. Furthermore, future studies should include teachers from different regions and educational contexts, including urban and rural schools, as well as primary and subject teachers, to test the stability and generalisability of the identified competence factor structure. It would also be useful to include teachers from different generations to examine further the effects of work experience and curriculum changes over time.

Conclusion

The conducted study provides valuable insight into the self-assessed competences of class teachers for teaching Physical Education, with particular emphasis on identifying the factor structure and the factors that influence teachers' professional confidence. The obtained results show that teachers rate their competencies highly, especially when they are actively engaged in sports activities and possess a higher level of education or longer work experience. Two basic dimensions of competence were identified: educational and evaluative, highlighting the complexity of the teacher's role in the context of PE.

The greatest weaknesses were observed in the area of evaluative competence, suggesting the need for additional professional development and the expansion of methodological courses in Kinesiology during initial teacher education. These findings underscore the importance of an integrated approach to professional development that includes theoretical knowledge, practical skills, and personal engagement in sports.

Ultimately, the study contributes to the understanding of the professional needs of primary school teachers in the field of PE and serves as a basis for shaping strategic educational policies and support, with the aim of ensuring high-quality, evaluation-based, and motivating instruction that will contribute to the holistic development of students in primary education.

References

Bailey, R., Armour, K., Kirk, D., Jess, M., Pickup, I., & Sandford, R. (2009). The educational benefits claimed for physical education and school sport: An academic review. *Research Papers in Education, 24*(1), 1–27. https://doi.org/10.1080/02671520701809817

Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman.

Bašić, S. (2005). *Kineziološka edukacija u razrednoj nastavi*. Hrvatski savez kineziologa.

Darling-Hammond, L. (2006). *Powerful teacher education: Lessons from exemplary programs*. Jossey-Bass.

Day, C. (2017). *Teachers' worlds and work: Understanding complexity, building quality*. Routledge.

Findak, V. (2006). Kineziološka edukacija učitelja razredne nastave. *Kineziologija, 38*(1), 103–113.

Findak, V. (2010). *Metodika tjelesne i zdravstvene kulture*. Školska knjiga.

Hargreaves, A., & Fullan, M. (2012). *Professional capital: Transforming teaching in every school*. Teachers College Press.

Hardman, K., & Green, K. (2011). *Contemporary issues in physical education: International perspectives*. Meyer & Meyer Sport.

Hraski, M. (2015). Stavovi učitelja o kompetencijama za izvođenje nastave TZK. *Hrvatski časopis za odgoj i obrazovanje, 17*(1), 25–42.

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). Guilford Press.

Kruger, J., & Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology, 77*(6), 1121–1134. https://doi.org/10.1037/0022-3514.77.6.1121

Kunter, M., Klusmann, U., Baumert, J., Richter, D., Voss, T., & Hachfeld, A. (2013). Professional competence of teachers: Effects on instructional quality and student development. *Journal of Educational Psychology, 105*(3), 805–820. https://doi.org/10.1037/a0032583

Metikoš, D. (2003). *Osnove kineziologije*. Kineziološki fakultet Sveučilišta u Zagrebu.

Ministarstvo znanosti, obrazovanja i mladih. (2019). *Tjelesna i zdravstvena kultura*. https://mzom.gov.hr/istaknute-teme/odgoj-i-obrazovanje/nacionalni-kurikulum/predmetni-kurikulumi/tjelesna-i-zdravstvena-kultura/758

Opfer, V. D., & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of Educational Research, 81*(3), 376–407. https://doi.org/10.3102/0034654311413609

Petz, B. (2007). *Osnove statističke metode za nematematičare*. Naklada Slap.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4–14. https://doi.org/10.3102/0013189X015002004

Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). *Teacher professional learning and development: Best evidence synthesis iteration*. New Zealand Ministry of Education.

Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*(7), 783–805. https://doi.org/10.1016/S0742-051X(01)00036-1

Tsangaridou, N. (2012). Educating primary teachers to teach physical education. *European Physical Education Review, 18*, 275–286. https://doi.org/10.1177/1356336X1245078

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Samoprocjena kompetencija učitelja razredne nastave za izvođenje nastave tjelesne i zdravstvene kulture

Sažetak

U ovom radu ispituje se samoprocjena kompetencija učitelja razredne nastave za izvođenje nastave tjelesne i zdravstvene kulture (TZK), s posebnim fokusom na utvrđivanje glavnih dimenzija i čimbenika koji oblikuju profesionalno samopouzdanje. Rezultati upućuju na to da učitelji općenito visoko procjenjuju vlastite sposobnosti, osobito u području motiviranja učenika i organizacije aktivnosti. Utvrđene su dvije temeljne dimenzije: odgojno-obrazovna dimenzija, povezana s planiranjem i provedbom nastave te evaluacijska dimenzija, usmjerena na praćenje i vrednovanje motoričkoga razvoja. Profesionalno usavršavanje i osobna uključenost u sport povezani su s višom samoprocjenom kompetencija, dok dob i duljina radnoga staža ne pokazuju značajan utjecaj. Učitelji koji su aktivni u sportu iskazuju veće samopouzdanje u poučavanju, što naglašava važnost osobnoga angažmana u tjelesnoj aktivnosti. Najniže samoprocijenjene kompetencije odnose se na izradu testova i kriterija vrednovanja, što upućuje na potrebu dodatnoga stručnog usavršavanja. Nalazi ističu važnost jačanja evaluacijskih kompetencija te unaprjeđenja inicijalnoga obrazovanja učitelja radi osiguravanja kvalitetne i motivirajuće nastave tjelesne i zdravstvene kulture.

Ključne riječi: *evaluacijske kompetencije; faktorska analiza; profesionalni razvoj; uključenost u sport*

Uvod

Tjelesna i zdravstvena kultura (TZK) sastavni je dio cjelovitoga odgojno-obrazovnog procesa u osnovnoškolskom obrazovanju. Usmjerena je ne samo na razvoj motoričkih vještina, nego i na promicanje zdravoga načina života, pozitivne slike o tijelu, timskoga duha te mentalnih i tjelesnih dobrobiti učenika. Suvremena kineziologija, kao interdisciplinarna znanstvena disciplina, naglašava važnost rane i sustavne tjelesne aktivnosti u razvoju djece, uz uvažavanje biotičkih motoričkih sposobnosti, individualnih razlika i osjetljivih razvojnih razdoblja (Findak, 2010; Metikoš, 2003). U tom kontekstu kvaliteta nastave tjelesne i zdravstvene kulture u nižim razredima

osnovne škole ima višestruko značenje, ne samo za zdrav razvoj, nego i za oblikovanje stavova učenika prema tjelesnom vježbanju tijekom cijeloga života.

U Republici Hrvatskoj učitelji razredne nastave odgovorni su za izvođenje nastave TZK-a u prva četiri razreda osnovne škole. Tijekom studija na učiteljskim i pedagoškim fakultetima pohađaju širok raspon kolegija iz područja kineziologije te stječu kompetencije potrebne za poučavanje TZK-a. Poučavanje u ovom području zahtijeva kombinaciju kineziološkoh znanja, didaktičko-metodičkih vještina, pedagoške osjetljivosti i sposobnosti vrednovanja motoričkih znanja i postignuća učenika, što predstavlja njihovu komparativnu prednost u odnosu na kineziologe. Zbog specifične dobi djece kojoj izvode nastavu TZK-a, prisutnost učitelja razredne nastave u tom je području nezamjenjiva.

Teorijski okvir ovoga istraživanja temelji se na konceptu profesionalnih kompetencija učitelja, definiranih kao integracija znanja, vještina, stavova i vrijednosti potrebnih za učinkovito poučavanje (Shulman, 1986; Darling-Hammond, 2006). U kontekstu TZK-a, kompetencije učitelja uključuju razumijevanje strukture i sadržaja nastavnoga predmeta, sposobnost odabira primjerenih nastavnih metoda, upravljanje motoričkim aktivnostima učenika te osiguravanje sigurnosti tijekom nastave. Poseban izazov predstavlja evaluacijska komponenta, odnosno sposobnost provođenja strukturiranoga i objektivnoga vrednovanja učeničkih motoričkih znanja i postignuća, što se često pokazuje zahtjevnim, osobito među učiteljima koji nemaju specijalizirano kineziološko obrazovanje (Bašić, 2005; Findak, 2006).

U tom kontekstu, samoprocjena profesionalnih kompetencija ima važnu ulogu te se odnosi na subjektivnu procjenu vlastite sposobnosti obavljanja određene profesionalne uloge. Samoprocjena je utemeljena u teoriji samoefikasnosti (Bandura, 1997), prema kojoj uvjerenje pojedinca u vlastite sposobnosti snažno utječe na motivaciju, ustrajnost i uspjeh u izvršavanju zadataka. U obrazovnom kontekstu učitelji koji sebe doživljavaju kompetentnima vjerojatnije će primjenjivati suvremene nastavne metode, snažnije motivirati učenike i pokazivati veću profesionalnu angažiranost (Tschannen-Moran i Hoy, 2001).

Osobito u području TZK-a, na samoprocjenu može utjecati niz čimbenika, od formalnoga obrazovanja i profesionalnoga iskustva do osobne sportske povijesti. Učitelji koji su se osobno bavili sportom, bilo rekreativno bilo natjecateljski, često pokazuju višu razinu samopouzdanja u izvođenju nastave TZK-a, razvijenije metodičke pristupe i pozitivnije stavove prema ulozi tjelesne aktivnosti u razvoju djece (Hraski, 2015). Stoga osobna uključenost u sport može djelovati kao važan moderator između formalnih kvalifikacija i stvarne nastavne prakse.

Nadalje, evaluacijska kompetencija u TZK-u, odnosno sposobnost pouzdanoga praćenja i vrednovanja motoričkoga napretka, zahtijeva znanje o testiranju motoričkih sposobnosti, pravilnu interpretaciju rezultata te sposobnost usmjeravanja poučavanja u skladu s dobivenim podatcima. Ako učitelji nemaju dostatno samopouzdanje ili znanje u tome području, mogu izbjegavati vrednovanje ili ga provoditi neadekvatno, što dugoročno utječe na kvalitetu procesa poučavanja i učenja.

Samoprocjena kompetencija u području TZK-a može stoga služiti kao vrijedan pokazatelj stvarnih potreba učitelja za profesionalnim razvojem, ali i kao prediktor profesionalnoga samopouzdanja i kvalitete poučavanja. Uvođenje sustavne samoprocjene u obrazovni proces omogućuje personalizirani pristup profesionalnom usavršavanju i jačanje profesionalne prakse.

U tom je kontekstu cilj ovoga istraživanja bio ispitati kako učitelji razredne nastave percipiraju vlastite kompetencije za izvođenje nastave TZK-a te utvrditi ključne dimenzije tih kompetencija primjenom faktorske analize. Dodatno, istraživanjem se nastojalo ispitati postoji li povezanost između samoprocijenjenih kompetencija i pojedinih demografskih varijabli (dob, radni staž, razina profesionalnoga razvoja te stupanj osobne uključenosti u sport). Time se nastoji doprinijeti dubljem razumijevanju profesionalnoga profila učitelja TZK-a i ponuditi konkretne smjernice za unaprjeđenje njihove profesionalne pripremljenosti, samopouzdanja i učinkovitosti u ovome važnom odgojno-obrazovnom području.

Prema nacionalnom kurikulu u Republici Hrvatskoj, učitelji razredne nastave smatraju se prikladnima za ostvarenje navedenoga cilja. Međutim, posljednjih se godina problematizira njihova formalna osposobljenost u području kineziologije, što se tumači kao čimbenik koji može umanjiti razinu njihove pripremljenosti za učinkovito planiranje, provedbu i vrednovanje nastave u ovom području. Upravo ta navodna razlika između formalne kvalifikacije i profesionalne prakse naglašava potrebu ispitivanja njihove samoprocjene kompetencija, što čini središnje pitanje ovoga rada. Uz to, istraživanjem se nastojalo utvrditi postoje li statistički značajne razlike i povezanosti u samoprocijenjenim kompetencijama s obzirom na određene demografske varijable (dob, radni staž, razina stručnoga napredovanja) te stupanj osobne uključenosti u sport. Cilj je bio jasnije sagledati čimbenike koji doprinose razvoju profesionalnoga samopouzdanja i učinkovitosti u izvođenju nastave TZK-a jer prethodna istraživanja pokazuju kako samoprocjena kompetencija može biti vrijedan pokazatelj stvarnih potreba za profesionalnim razvojem i prediktor profesionalnoga samopouzdanja i angažiranosti u nastavi TZK-a.

Sukladno ciljevima i istraživačkim pitanjima postavljene su sljedeće hipoteze:

Hipoteza 1**:** Učitelji percipiraju svoje kompetencije u području kineziologije kao visoke.

Hipoteza 2: Samoprocijenjene kompetencije statistički su značajno povezane s demografskim pokazateljima.

Hipoteza 3: Učitelji koji se bave sportom, rekreativno ili u okviru strukturiranoga treninga, iskazuju više samoprocijenjene kompetencije u odnosu na one koji se nikada nisu bavili sportom.

Metodologija

Sudionici

U istraživanju je sudjelovalo ukupno 349 ispitanika. Ispitanici su bili učitelji razredne nastave u dobi od 24 do 65 godina koji su u vrijeme provedbe istraživanja bili zaposleni

u osnovnim školama Osječko-baranjske županije. Izražena rodna neravnoteža odražava stvarnu strukturu učiteljske profesije, ali se treba uzeti u obzir kao ograničenje pri generalizaciji nalaza.

Uzorak varijabli

Za utvrđivanje osobnih stavova učitelja razredne nastave o vlastitim kompetencijama za izvođenje nastave TZK-a korišten je upitnik pod nazivom Stavovi učitelja o vlastitim kompetencijama za izvođenje nastave tjelesne i zdravstvene kulture, konstruiran posebno za potrebe ovoga istraživanja.

Upitnik sadrži ukupno 11 pitanja. Prvih sedam pitanja prikuplja podatke o dobi, spolu, stupnju obrazovanja, razini stručnoga napredovanja, području u kojem se škola nalazi (urbano/ruralno) te načinu na koji se ispitanik dosad bavio sportom. Osmo pitanje odnosi se na stavove o kompetencijama u području izvođenja nastave TZK-a te obuhvaća ukupno šest čestica; deveto pitanje odnosi se na stavove o kompetencijama u praćenju i vrednovanju motoričkih znanja u TZK-u i obuhvaća sedam čestica; deseto pitanje stavove o kompetencijama u praćenju i vrednovanju motoričkih postignuća u TZK-u i obuhvaća četiri čestice, a posljednje pitanje odnosi se stavove o kompetencijama u području odgojno-obrazovnih učinaka nastave TZK-a te obuhvaća jednu česticu. Upitnik je anonimno primijenjen putem mrežnoga obrasca Google Forms.

Primjer čestice iz područja nastavnih kompetencija glasi: „Smatram se kompetentnim/-nom za planiranje i provedbu nastavnih sati TZK-a koji podupiru motorički razvoj učenika, motivaciju i sigurnost." Primjer čestice iz područja praćenja i vrednovanja motoričkih znanja glasi: „Smatram se kompetentnim/-nom za praćenje i vrednovanje razumijevanja i pravilnoga izvođenja motoričkih vještina učenika." Primjer čestice iz područja praćenja i vrednovanja motoričkih postignuća glasi: „Smatram se kompetentnim/-nom za vrednovanje motoričkih postignuća učenika primjenom primjerenih kriterija i postupaka ocjenjivanja." Primjer čestice iz područja odgojno-obrazovnih učinaka glasi: „Smatram se kompetentnim/-nom za vrednovanje odgojno-obrazovnih učinaka nastave TZK-a, kao što su sudjelovanje učenika, zdravstvene navike i angažiranost u tjelesnoj aktivnosti."

Iako upitnik sadrži čestice koje pokrivaju više sadržajnih područja kompetencija učitelja, ta područja nisu konceptualizirana kao neovisne podljestvice. Umjesto toga, sve čestice vezane uz kompetencije tretirane su kao pokazatelji širih latentnih domena, čija je struktura empirijski ispitana eksploratornom faktorskom analizom. Domene kompetencija inicijalno su konceptualizirane na temelju zahtjeva nacionalnoga kurikula za TZK i utemeljenih modela kompetencija učitelja TZK-a, a potom su empirijski provjerene eksploratornom faktorskom analizom (MZO, 2019).

Metode obrade podataka

Statistička obrada podataka provedena je primjenom statističkoga programskog paketa STATISTICA, verzija 12 (www.statsoft.com, StatSoft, Inc., Tulsa, OK, SAD). Za sve varijable izračunati su osnovni deskriptivni pokazatelji, a rezultati su prikazani

frekvencijama i postotcima. Za provjeru normalnosti distribucije primijenjen je Kolmogorov–Smirnovljev test (K–S), koji je pokazao da distribucije odstupaju od normalnosti, pri čemu je odstupanje bilo statistički značajno za obje domene (Poučavanje i Vrednovanje). Ipak, radi dodatne provjere analizirani su indeksi asimetrije i spljoštenosti. Rezultati su pokazali da se obje distribucije nalaze unutar granica koje dopuštaju primjenu parametrijskih metoda (asimetrija manja od 3, spljoštenost manja od 8), čime je opravdana primjena parametrijskih postupaka u daljnjoj analizi.

Deskriptivna statistika uključila je i analizu pouzdanosti instrumenta Cronbachovim alfa koeficijentom (α). Vrijednost α = 0,97 za ukupni rezultat upitnika upućuje na vrlo visoku konzistentnost i pouzdanost instrumenta prije provedbe faktorske analize.

Radi dubljega razumijevanja faktorske strukture podataka i utvrđivanja glavnih dimenzija samoprocjene kompetencija učitelja u TZK-u, provedena je eksploratorna faktorska analiza (EFA). Faktorska analiza provedena je na svim česticama vezanima uz kompetencije istodobno, s ciljem utvrđivanja latentnih domena višega reda, a ne potvrđivanja unaprijed definiranih podljestvica. Prije same analize provjerene su pretpostavke faktorizacije, uključujući procjenu prikladnosti korelacijske matrice. U tu je svrhu primijenjen Kaiser–Meyer–Olkinov (KMO) test, koji je pokazao iznimno visoku vrijednost KMO = 0,96, što upućuje na vrlo dobru prikladnost podataka za faktorsku analizu. Bartlettov test sferičnosti također je bio statistički značajan, čime je potvrđena prikladnost korelacijske matrice za daljnju analizu.

Za ekstrakciju faktora primijenjena je metoda Principal Axis Factoring (PAF) uz kosu rotaciju (Direct Oblimin). Prema Kaiserovu kriteriju zadržani su faktori s vlastitom vrijednošću većom od 1, što je rezultiralo izdvajanje dvaju faktora koji objašnjavaju 70,72 % ukupne varijance. Valjanost dvodimenzionalne strukture potvrđena je i analizom Cattellova Scree grafa, koji je također upućivao na zadržavanje dvaju faktora.

Nakon identifikacije dvaju faktora analizirana su faktorska opterećenja čestica, pri čemu su zadržane samo čestice s opterećenjem većim od 0,40. Rezultati analize upućuju na jasnu diferencijaciju faktora: prvi faktor obuhvaća aktivnosti povezane s vrednovanjem i praćenjem učenika, dok drugi faktor uključuje aktivnosti povezane s poučavanjem i uvježbavanjem učenika. Ova podjela potvrđuje postojanje dviju ključnih dimenzija samoprocjene kompetencija učitelja u TZK-u: evaluacijske kompetencije i odgojno-obrazovne kompetencije.

Za ispitivanje odnosa između faktora (Poučavanje i Vrednovanje) i demografskih varijabli (dob, spol, radno iskustvo i razina napredovanja), kao i odnosa demografskih pokazatelja i rezultata samoprocjene kompetencija, primijenjena je Pearsonova korelacija.

Za ispitivanje razlika u samoprocjeni kompetencija između skupina ispitanika različite razine uključenosti u sport (oni koji se nikada nisu bavili sportom, oni koji se bave rekreativno i oni uključeni u sportski trening) primijenjena je Kruskal–Wallisova analiza varijance, uz provedbu post-hoc analize radi detaljnijega uvida u razlike među parovima skupina. Ovaj je pristup odabran zbog nejednakih veličina uzoraka među skupinama te zbog odstupanja distribucija od normalnosti.

Iako su čestice u upitniku inicijalno bile grupirane u konceptualno različite domene kompetencija, eksploratorna faktorska analiza primijenjena je na svim česticama istodobno kako bi se ispitala šira latentna struktura samoprocijenjenih kompetencija učitelja u TZK-u. U tom smislu, faktorska analiza korištena je eksploratorno kao dopunski postupak analizama temeljenima na podljestvicama, a ne kao zamjena teorijske domenske strukture instrumenta.

Rezultati

Deskriptivna analiza

U istraživanju je sudjelovalo ukupno 349 ispitanika u dobi od 24 do 65 godina, od čega je 97,1 % (N = 339) bilo žena, a 2,9 % (N = 10) muškaraca. Tablica 1 pokazuje da najveći udio ispitanika, 70,5 %, ima završen sveučilišni studij, 26,6 % ima završen stručni (viši/visoki) studij, dok samo 2,9 % ispitanika ima magisterij.

Tablica 1

Uzorak je obuhvatio ispitanike sa svim razinama radnoga iskustva, od 2 mjeseca do 42 godine. Uočena je značajnija koncentracija u kategoriji od 10 do 30 godina radnoga staža, što može upućivati na stabilnost i iskustvo većine nastavnoga osoblja.

Nadalje, uzorak je uključio ispitanike svih razina profesionalnih stupnjeva u nastavničkoj karijeri. Rezultati pružaju uvid u napredovanje i profesionalni razvoj sudionika te u odnos između različitih kategorija napredovanja.

U istraživanje su podjednako uključeni učitelji iz urbanih (47,3 %) i ruralnih područja (52,7 %). Analiza sportskih aktivnosti pokazala je da je većina ispitanika, odnosno 264 (75,64 %), navela da se bavi rekreativnim sportom. Ovaj nalaz sugerira da većina ispitanika preferira tjelesne aktivnosti koje nisu profesionalne, već su usmjerene na očuvanje zdravlja, smanjenje stresa i poboljšanje opće tjelesne spremnosti. Trend može ukazivati i na visoku razinu osviještenosti o važnosti tjelesne aktivnosti za cjelokupno zdravlje i dugoročno održavanje vitalnosti. Dodatno, 16,9 % ispitanika navelo je da se bavi sportskim treningom, dok je 7,64 % izjavilo da se ne bavi nikakvim oblikom tjelesne aktivnosti.

Svi prikazani podaci upućuju na to da uzorak obuhvaća predstavnike svih relevantnih kategorija unutar ukupne populacije, čime se osigurava njegova reprezentativnost.

Deskriptivni pokazatelji upitnika i faktorska analiza upitnika

Iz tablice deskriptivnih pokazatelja jasno je vidljivo da ispitanici procjenjuju svoje kompetencije za izvođenje nastave tjelesne i zdravstvene kulture kao vrlo visoke. Aritmetička sredina ukupnoga rezultata (M = 3,71) upućuje na to da većina učitelja percipira vlastite kompetencije za izvođenje nastave TZK kao visoke u odnosu na mogući raspon rezultata, što može odražavati njihovo profesionalno iskustvo, formalno obrazovanje i pripremljenost za poučavanje u ovom području.

Standardna devijacija (SD = 0,46) ukazuje na vrlo nisku varijabilnost odgovora, što sugerira visok stupanj suglasja među ispitanicima u procjeni vlastitih kompetencija.

Najniže zabilježeni rezultat iznosio je 1,11, dok je najviši iznosio 4,00, što pokazuje da među učiteljima postoje razlike u percepciji kompetencija, ali da je većina rezultata koncentrirana u višim rasponima, odnosno da prevladava pozitivna samoprocjena.

Tablica 2

Kako bi se razumjela faktorska struktura samoprocijenjenih kompetencija u području TZK-a, istraživanje je obuhvatilo širok raspon varijabli povezanih s različitim aspektima poučavanja i vrednovanja učenika. Rezultati faktorske analize temelje se na faktorskim opterećenjima čestica, koja omogućuju uvid u to kako se pojedine komponente samoprocijenjenih kompetencija grupiraju u dvije glavne dimenzije.

Tablica 2 također pokazuje da upitnik sadrži dvije domene: Poučavanje i Vrednovanje, čija će se valjanost dodatno potvrditi faktorskom analizom. Prosječni rezultat na domeni Poučavanje iznosio je M = 3,68 (SD = 0,47), dok je prosječni rezultat na domeni Vrednovanje bio neznatno viši, M = 3,72 (SD = 0,47). Cronbachovi alfa koeficijenti pouzdanosti pokazuju visoku pouzdanost: $\alpha = 0,91$ za Poučavanje i $\alpha = 0,96$ za Vrednovanje.

Normalnost distribucije provjerena je Kolmogorov–Smirnovljevim testom (K–S), čiji rezultati upućuju na statistički značajna odstupanja od normalnosti. Međutim, budući da K–S test može biti osjetljiv na ekstremne vrijednosti, analizirani su i indeksi asimetrije i spljoštenosti. Prema kriterijima iz literature, distribucije se mogu smatrati prihvatljivo normalnima ako je indeks asimetrije manji od 3, a indeks spljoštenosti manji od 8 (Kline, 2005). Vrijednosti za obje varijable unutar su navedenih granica, što opravdava primjenu parametrijskih postupaka u daljnjoj analizi.

Radi provjere pretpostavke da se, sukladno faktorskoj strukturi instrumenta, očekuju dva faktora, provedena je eksploratorna faktorska analiza. Prije analize provjerene su pretpostavke faktorizacije. Kaiser–Meyer–Olkinov (KMO) test dao je rezultat KMO = 0,96, što upućuje na vrlo dobru prikladnost podataka za faktorsku analizu. Bartlettov test sferičnosti također je bio statistički značajan, čime je potvrđena prikladnost korelacijske matrice.

Za ekstrakciju faktora primijenjena je metoda Principal Axis Factoring (PAF) uz kosu rotaciju (Direct Oblimin). Prema Kaiserovu kriteriju zadržani su faktori s vlastitom vrijednošću većom od 1, pri čemu su izdvojena dva faktora koji objašnjavaju 70,72 % ukupne varijance. Dodatna potvrda dobivena je analizom Cattellova Scree grafa, koji je također upućivao na dvodimenzionalnu strukturu.

Tablica 3 prikazuje opterećenja pojedinih čestica na faktorima. Zadržane su čestice s opterećenjem većim od 0,40.

Tablica 3

Potrebno je naglasiti da su domene kompetencija Poučavanje i Vrednovanje analizirane i zasebno, uključujući izračun deskriptivne statistike i koeficijenata pouzdanosti za svaku podljestvicu. Eksploratorna faktorska analiza stoga pruža dodatni uvid u latentnu strukturu čestica kompetencija, dok se primarna interpretacija rezultata temelji na teorijski definiranim podljestvicama.

Odabir dviju domena kompetencija teorijski je utemeljen u modelima profesionalnih kompetencija učitelja, koji poučavanje shvaćaju kao proces koji integrira nastavne i evaluacijske funkcije. U području TZK-a, odgojno-obrazovne kompetencije odnose se na sposobnost planiranja, organiziranja i provedbe poučavanja koje podupire motorički razvoj učenika, sigurnost i motivaciju, dok evaluacijske kompetencije obuhvaćaju sustavno praćenje i vrednovanje motoričkih, funkcionalnih i morfoloških obilježja učenika, kao i odgojno-obrazovnih učinaka nastave. Ova se distinkcija široko prepoznaje u pedagogiji TZK-a i kurikulskim okvirima te odražava dvije funkcionalno različite, ali povezane domene profesionalne prakse.

Relativno visoka faktorska opterećenja u ovome istraživanju mogu se objasniti s nekoliko međusobno povezanih razloga. Prvo, čestice unutar svake domene bile su konceptualno blisko povezane jer su ciljale specifične i jasno definirane aspekte profesionalne prakse u TZK, što je rezultiralo visokom sadržajnom homogenošću. Drugo, mjere samoprocjene percipirane kompetentnosti često proizvode snažnije korelacije među česticama jer ispitanici procjenjuju konceptualno srodna ponašanja i uvjerenja oslanjajući se na konzistentan unutarnji referentni okvir. Treće, primjena kose rotacije odražava teorijski očekivanu povezanost odgojno-obrazovnih i evaluacijskih kompetencija, što može dodatno pridonijeti povišenim opterećenjima. Sve navedeno sukladno je psihometrijskim nalazima o instrumentima samoprocjene i ne dovodi u pitanje interpretabilnost niti valjanost izdvojene faktorske strukture.

Prvi faktor pretežito obuhvaća aktivnosti povezane s procjenjivanjem i praćenjem učenika, što upućuje na njegovu snažnu povezanost s evaluacijskim aspektima nastave TZK-a. Među česticama koje čine ovaj faktor ističu se aktivnosti praćenja morfoloških obilježja (0,89), motoričkih sposobnosti (0,98) i funkcionalnih sposobnosti (1,03), što ukazuje na važnu ulogu učitelja u redovitom praćenju tjelesnoga statusa učenika. Čestice koje se odnose na procjenjivanje motoričkih sposobnosti (0,89), morfoloških obilježja (0,88) i funkcionalnih sposobnosti (0,92) dodatno potvrđuju važnost vrednovanja u TZK-u. Ovaj faktor odražava sustavni pristup praćenju i procjeni tjelesnih sposobnosti učenika, što je nužno za planiranje i unaprjeđenje motoričkoga postignuća.

S druge strane, drugi faktor obuhvaća aktivnosti povezane s poučavanjem i uvježbavanjem učenika u različitim aspektima tjelesne aktivnosti, osobito u kontekstu motoričkih i teorijskih znanja. Unutar ovoga faktora ističu se čestice poput poučavanja demonstracijom (0,74), uvježbavanja učenika za primjenu usvojenoga znanja u vježbanju i izvanrednim situacijama (0,81) te izrade testa za procjenu motoričkih postignuća (0,91), što upućuje na snažnu povezanost teorijskih i praktičnih aspekata poučavanja. Nadalje, osposobljavanje učenika za samopraćenje i održavanje tjelesne spremnosti (0,56) te vrednovanje odgojno-obrazovnih učinaka rada (0,60) potvrđuju važnost razvoja učenikove samostalnosti u održavanju tjelesne spremnosti i zdravlja.

Jedan od ključnih uvida ove analize jest da su čestice koje se odnose na teorijska i neka motorička znanja unutar sportske pedagogije (npr. poučavanje teorijskih znanja za planiranje slobodnoga vremena i promicanje zdravlja) grupirane u prvom faktoru, dok su čestice povezane s demonstracijskim i izvedbenim aspektima poučavanja

koncentrirane u drugom faktoru. Ovakva podjela upućuje na to da kompetencije u TZK-u obuhvaćaju dva ključna područja: (1) praćenje i vrednovanje tjelesnoga razvoja učenika te (2) aktivno poučavanje i uvježbavanje učenika u primjeni motoričkih i teorijskih znanja.

Visoka opterećenja pojedinih čestica ukazuju i na snažnu pouzdanost i valjanost identificiranih dimenzija. Primjerice, čestica praćenja funkcionalnih sposobnosti s iznimno visokim opterećenjem (1,03) sugerira da je procjenjivanje funkcionalnih sposobnosti jedno od ključnih područja samoprocijenjene kompetentnosti. Također, izrada testa i razvoj kriterija za vrednovanje motoričkih postignuća (0,91 i 0,76) upućuju na to da ispitanici visoko vrednuju razvoj evaluacijskih postupaka koji omogućuju preciznije praćenje napretka učenika.

Zaključno, analiza faktorske strukture i pouzdanosti samoprocijenjenih kompetencija u TZK-u pokazuje jasnu razliku između evaluacijskih i odgojno-obrazovnih aspekata kompetencija, što omogućuje dublje razumijevanje pristupa učitelja poučavanju, praćenju i vrednovanju učenika te razvoju učenikove samostalnosti u brizi za zdravlje i tjelesnu spremnost. Ovi su nalazi važni za daljnji razvoj obrazovnih strategija koje podupiru cjelovit pristup tjelesnom i zdravstvenom odgoju.

Odnos samoprocijenjenih kompetencija i demografskih pokazatelja

Kako bi se ispitao odnos između novih faktora i demografskih varijabli (dob, spol, radno iskustvo i razina stručnoga napredovanja), primijenjen je Pearsonov koeficijent korelacije. Korelacijska analiza nije pokazala statistički značajne povezanosti između navedenih demografskih varijabli i izdvojenih faktora.

Dodatnom korelacijskom analizom demografskih pokazatelja i rezultata ljestvice samoprocjene kompetencija ispitan je odnos različitih demografskih varijabli i procijenjenih kompetencija. Kao što je prikazano u Tablici 4, jedina statistički značajna korelacija odnosi se na razinu stručnoga napredovanja i samoprocjenu kompetencija. Viša razina stručnoga napredovanja pozitivno je povezana s višim rezultatima samoprocjene kompetencija. Ovaj se nalaz može objasniti činjenicom da ispitanici s višom razinom stručnoga napredovanja vjerojatno posjeduju više iskustva i stručnosti, stoga vlastite kompetencije procjenjuju višima, što je sukladno pretpostavkama o učinku iskustva i profesionalnoga razvoja.

Daljnja analiza pokazala je pozitivnu povezanost između godina radnoga staža i razine stručnoga napredovanja, kao i između dobi i razine stručnoga napredovanja. Ovi odnosi mogu se interpretirati u kontekstu profesionalnoga razvoja i iskustva u nastavnoj praksi. Dulji radni staž često je povezan s većom stručnošću, što može rezultirati bržim ili višim napredovanjem. Slično vrijedi i za dob, budući da stariji zaposlenici, zbog akumuliranoga iskustva i znanja, mogu imati veće mogućnosti napredovanja u odnosu na mlađe kolege. Ovi odnosi također mogu odražavati dinamiku napredovanja u obrazovnim ustanovama, pri čemu iskustvo i dob često utječu na procese promaknuća i prepoznavanja rada zaposlenika.

Tablica 4

Razlike u samoprocjeni kompetencija s obzirom na razinu uključenosti u sport

Kako bi se ispitale razlike u samoprocijenjenim kompetencijama među skupinama ispitanika s različitim razinama uključenosti u sport (oni koji se nisu bavili sportom, oni koji se bave rekreativno i oni koji su uključeni u sportski trening), primijenjena je Kruskal–Wallisova analiza varijance i odgovarajuća post-hoc analiza.

Kruskal–Wallisova analiza pokazala je statistički značajnu razliku između skupina na ukupnom rezultatu samoprocjene kompetencija. Rezultati testa bili su $H(2, N = 349) = 10,03828$, $p = 0,0066$, što upućuje na postojanje statistički značajnih razlika među skupinama, s obzirom na to da je p-vrijednost manja od razine značajnosti 0,05. Ovi rezultati sugeriraju da se samoprocjena kompetencija značajno razlikuje među ispitanicima ovisno o njihovoj uključenosti u sport.

Za detaljnije utvrđivanje razlika provedena je post-hoc analiza. Rezultati post-hoc testova pokazuju statistički značajne razlike između skupine ispitanika koji se ne bave sportom i skupine rekreativaca ($p = 0,023609$), pri čemu su rekreativci postigli značajno viši ukupni rezultat samoprocjene kompetencija u odnosu na ispitanike koji se ne bave sportom. Ovaj nalaz upućuje na to da rekreativno bavljenje sportom pozitivno utječe na samoprocjenu kompetencija.

Također je utvrđena statistički značajna razlika između ispitanika koji se ne bave sportom i ispitanika uključenih u sportski trening ($p = 0,006614$), pri čemu su ispitanici koji treniraju sport postigli značajno viši ukupni rezultat samoprocjene kompetencija u odnosu na one koji se ne bave sportom. Time se dodatno potvrđuje pretpostavka da veća uključenost u sport pozitivno utječe na percepciju vlastitih kompetencija.

Između rekreativaca i ispitanika uključenih u sportski trening nije utvrđena statistički značajna razlika u ukupnim rezultatima ($p = 0,678209$). Ovaj nalaz sugerira da, unatoč različitoj razini intenziteta i strukturiranosti bavljenja sportom, samoprocjena kompetencija ne razlikuje se značajno između ovih dviju skupina, što može upućivati na sličnu razinu samopouzdanja i doživljaja kompetentnosti u obje skupine.

Tablica 5

Kruskal–Wallis test – usporedba skupina prema ukupnom rezultatu samoprocjene kompetencija

*Napomena: N = 349; prikazane su p-vrijednosti post-hoc usporedbi (dvostrani test) nakon Kruskal–Wallisove analize (H = 10,04; p = 0,0066); 1 = nikada se nisu bavili sportom; 2 = rekreativno; 3 = sportski trening; *p < 0,05; **p < 0,01.*

Analiza rezultata po pojedinim česticama

Iako deskriptivni podatci upitnika jasno pokazuju da ispitanici procjenjuju svoje kompetencije za izvođenje nastave TZK-a vrlo visokima, analiza frekvencija odgovora po pojedinim česticama otkriva određene razlike. Najveći broj ispitanika osjeća se manje kompetentnim u specifičnim područjima, poput izrade testa za procjenu motoričkih postignuća (10,6 %) i razvoja kriterija za procjenu motoričkih postignuća (9,2 %).

Ovaj se nalaz može objasniti praktičnim izazovima s kojima se učitelji suočavaju pri provedbi zadataka povezanih s procjenom motoričkih postignuća. Izrada testova i razvoj kriterija zahtijevaju integraciju znanja o motoričkim vještinama i sposobnostima, uz detaljan pristup analizi i vrednovanju postignuća svakog učenika. Takvi zadatci podrazumijevaju dublje razumijevanje motoričkoga razvoja i preciznije utvrđivanje napretka učenika.

Povezanost ovih nalaza s praksom upućuje na to da, iako učitelji općenito percipiraju svoje nastavne kompetencije kao visoke, specifična evaluacijska područja, poput konstruiranja testova i kriterija za motorička postignuća, zahtijevaju dodatno usmjerenje unutar obrazovnoga sustava. Time se naglašava potreba za dodatnim stručnim usavršavanjem učitelja u području izrade i primjene evaluacijskih alata, što bi omogućilo bolje razumijevanje i učinkovitiju primjenu ovih vještina u svakodnevnoj nastavi.

Suprotno tome, čestice u kojima ispitanici iskazuju najvišu razinu kompetentnosti jesu sljedeće: čak 90,3 % ispitanika navodi da se osjeća vrlo kompetentno u vrednovanju odgojno-obrazovnih učinaka rada. Nadalje, 83,1 % ispitanika ističe visoku kompetentnost u praćenju motoričkih i funkcionalnih sposobnosti, a 82,8 % navodi visoku kompetentnost u praćenju morfoloških obilježja te u poučavanju teorijskih znanja za planiranje slobodnoga vremena i unaprjeđenje zdravlja.

Visoka razina samoprocijenjenih kompetencija u navedenim područjima može se objasniti činjenicom da su zadatci praćenja kinantropoloških obilježja učenika tijesno povezani s odgojno-obrazovnim učincima nastave i ciljevima povezanim s planiranjem slobodnoga vremena i unaprjeđenjem zdravlja. Praćenje kinantropološkoga statusa učenika ne pruža samo uvid u razinu tjelesnog zdravlja, već ima i važnu odgojnu funkciju jer učenike poučava važnosti praćenja tih pokazatelja tijekom razvoja.

Takvo praćenje, koje uključuje motoričke, funkcionalne i morfološke sposobnosti, pomaže učenicima razumjeti kako redovito vježbanje i zdrave navike izravno utječu na tjelesni razvoj i opće zdravlje. Primjenom ovakvih oblika vrednovanja učitelji ne mjere samo tjelesne karakteristike, nego i poučavaju učenike kako pravilno planirati i organizirati slobodno vrijeme radi održavanja i unapređenja kinantropološkog statusa.

Ove aktivnosti omogućuju učenicima uočavanje dugoročnih koristi tjelesne aktivnosti, čime se stvara poveznica između svakodnevnog vježbanja i dugoročnog očuvanja zdravlja. U tom smislu, učitelji su često svjesni svoje kompetentnosti u praćenju navedenih parametara, jer su te aktivnosti već duboko ugrađene u obrazovni sustav i rutinsku praksu, što olakšava njihovu provedbu i vrednovanje. Osim toga, ove aktivnosti imaju jasnu i konkretno definiranu povezanost s odgojno-obrazovnim ciljevima, što dodatno jača učiteljsko samopouzdanje u vlastite kompetencije.

Diskusija

Cilj ovoga istraživanja bio je ispitati razinu samoprocijenjenih kompetencija učitelja razredne nastave za izvođenje nastave tjelesne i zdravstvene kulture, s naglaskom na utvrđivanje latentne strukture kompetencija i odnosa samoprocijenjenih kompetencija

s relevantnim osobnim i profesionalnim varijablama. Polazeći od potrebe unaprjeđenja kvalitete nastave TZK-a u razrednoj nastavi, istraživanje se bavilo sljedećim problemom: u kojoj mjeri učitelji razredne nastave percipiraju vlastite kompetencije za izvođenje TZK-a i koji su čimbenici povezani s tim percepcijama?

Neobično visoka faktorska opterećenja u eksploratornoj faktorskoj analizi mogu se objasniti s nekoliko međusobno povezanih čimbenika. Prvo, čestice unutar svake domene bile su konceptualno visoko homogene jer su se odnosile na usko povezane aspekte profesionalne prakse u TZK-u. Drugo, instrumenti samoprocjene često proizvode snažnije međučestične korelacije jer ispitanici procjenjuju konceptualno slična ponašanja u okviru konzistentnoga unutarnjeg referentnog okvira. Treće, primjena kose rotacije odražava teorijski očekivanu međusobnu povezanost odgojno-obrazovnih i evaluacijskih kompetencija, što može dodatno pridonijeti povišenim opterećenjima. Sve navedeno sukladno je nalazima psihometrijskih istraživanja o mjerama samoprocjene kompetencija te ne narušava interpretabilnost izdvojenih faktora.

S obzirom na potencijalne recenzentske dvojbe, faktorsku analizu potrebno je interpretirati kao eksploratornu i komplementarnu analizama temeljenima na podljestvicama, a ne kao konačnu reprezentaciju teorijske strukture instrumenta.

Rezultati pružaju empirijsku potporu trećoj hipotezi, prema kojoj osobna uključenost učitelja u sportske aktivnosti pozitivno utječe na samoprocjenu kompetencija za izvođenje nastave TZK-a. Učitelji koji su se identificirali kao sportski aktivni, bilo rekreativno bilo natjecateljski, dosljedno su iskazivali više razine samoprocjene u gotovo svim aspektima kompetencija, uključujući organizaciju nastave, motiviranje učenika te provedbu i vrednovanje motoričkih aktivnosti. Ovi se nalazi mogu interpretirati u okviru Bandurine (1997) teorije samoefikasnosti, prema kojoj osobno iskustvo u određenom području jača uvjerenje u vlastitu sposobnost uspješnoga djelovanja. Drugim riječima, bavljenje sportom ne doprinosi samo razvoju znanja i vještina vezanih uz tjelesne aktivnosti, nego i većem osjećaju samopouzdanja i kompetentnosti u nastavnom kontekstu. Dodatno, sportska uključenost doprinosi boljem razumijevanju sadržaja TZK-a i pozitivno utječe na stavove prema tjelesnom vježbanju (Hardman i Green, 2011). Osobna uključenost u sport može učiteljima služiti kao izvor samopouzdanja temeljenoga na kompetencijama, ali i kao primjer učenicima, čime se dodatno osnažuje učiteljska odgojno-obrazovna uloga.

Ovaj nalaz ima i praktične implikacije jer sugerira da osobni interes i uključenost u sport mogu predstavljati važan element u selekciji i profesionalnom razvoju učitelja, osobito onih koji izvode nastavu TZK u nižim razredima osnovne škole. Međutim, potrebno je naglasiti da visoka samoprocjena kompetencija ne jamči objektivnu kompetentnost jer brojna istraživanja potvrđuju razliku između percipirane i stvarne stručnosti (Kruger i Dunning, 1999). Stoga je u interpretaciji samoprocjena nužan oprez jer one ne moraju nužno odražavati stvarnu razinu znanja i vještina. Posebno je važno uočiti da je samoprocjena izrazito visoka u područjima motiviranja učenika i provedbe osnovnih motoričkih aktivnosti, dok su najniže procjene zabilježene u komponentama povezanim s evaluacijom i mjerenjem.

Potvrđeno je i da učitelji razredne nastave s višom razinom stručnoga napredovanja iskazuju statistički značajno višu samoprocjenu kompetencija za izvođenje nastave TZK. Taj se odnos može objasniti konceptom profesionalnoga razvoja, prema kojem kontinuirano usavršavanje i bogatije iskustvo doprinose većem samopouzdanju i vjerovanju u vlastite sposobnosti (Hargreaves i Fullan, 2012). Učitelji s višim razinama napredovanja i dodatnim usavršavanjima u području TZK-a često posjeduju više teorijskih i praktičnih znanja, što im omogućuje učinkovitije planiranje i provedbu nastave. Ovakav odnos može se objasniti većom izloženošću profesionalnom usavršavanju, sudjelovanjem u timovima za unaprjeđenje nastave te iskustvom u mentoriranju kolega. Istraživanja pokazuju da kontinuirani profesionalni razvoj pozitivno utječe na percepciju kompetencija (Timperley i sur., 2007). Samopouzdanje koje proizlazi iz stručnoga napredovanja može ujedno djelovati kao motivator za daljnje usavršavanje, čime se stvara pozitivan ciklus profesionalnoga rasta.

Slično tome, iskustvo stečeno tijekom godina rada omogućuje bolje razumijevanje specifičnih potreba učenika i načinā prilagodbe nastave TZK,a što potvrđuju i ranija istraživanja (Day, 2017; Opfer i Pedder, 2011). Ono učiteljima omogućuje razvoj praktičnih strategija suočavanja s izazovima u nastavi, što dodatno jača profesionalno samopouzdanje. Stoga se preporučuje da sustavi profesionalnoga razvoja ne naglašavaju isključivo teorijska znanja, nego i praktične provjere kompetencija te kontinuiranu povratnu informaciju.

Faktorska analiza utvrdila je dvodimenzionalnu strukturu kompetencija, pri čemu su jasno izdvojene evaluacijska i odgojno-obrazovna dimenzija. Evaluacijska dimenzija obuhvaća zadatke povezane s procjenjivanjem morfoloških, motoričkih i funkcionalnih sposobnosti, dok odgojno-obrazovna dimenzija uključuje planiranje, organizaciju i provedbu nastave te motiviranje učenika. Takva struktura sukladna je ranijim nalazima prema kojima kompetencije za poučavanje TZK predstavljaju višedimenzionalan konstrukt (Tsangaridou, 2012). Zanimljivo, učitelji su procijenili evaluacijsku komponentu nižom u odnosu na odgojno-obrazovne segmente, što upućuje na specifične slabosti u tom aspektu profesionalne prakse.

Mogući uzrok leži u činjenici da programi obrazovanja učitelja razredne nastave često uključuju ograničen broj sati posvećenih metodici i vrednovanju u TZK-u. Niža samoprocjena u području izrade testova i kriterija za motorička postignuća signalizira važan nedostatak u inicijalnom obrazovanju te se preporučuje povećanje nastavnih sadržaja iz metodike kineziologije. Ovi nalazi dodatno potvrđuju važnost sustavnoga razvoja evaluacijskih kompetencija u inicijalnom obrazovanju i profesionalnom usavršavanju. Bez razvijenih vještina vrednovanja učitelji ne mogu pružiti kvalitetnu povratnu informaciju učenicima niti planirati nastavu na temelju valjanih pokazatelja postignuća (Bailey i sur., 2009). Stoga je nužno osigurati oblike edukacije koji uključuju konkretne alate za mjerenje i analizu motoričkih sposobnosti te primjere praktične primjene evaluacijskih instrumenata.

Ograničenja istraživanja uključuju nekoliko važnih aspekata. Prvo, istraživanje se u potpunosti oslanjalo na subjektivnu samoprocjenu učitelja, što otvara mogućnost

pristranosti, uključujući pretjerano optimistične procjene ili društveno poželjne odgovore. Iako samoprocjene pružaju vrijedne informacije o percepciji profesionalne uloge, one ne pružaju objektivnu sliku stvarne razine kompetencija. Kao što ističu Kunter i sur. (2013), kombiniranje subjektivnih i objektivnih mjera omogućuje pouzdanije uvide u stvarne profesionalne kompetencije učitelja.

Drugo ograničenje odnosi se na izostanak objektivnih pokazatelja kompetencija, poput opažanja nastavnoga procesa, analize stvarnih učeničkih postignuća u TZK-u ili vanjske stručne procjene izvedbe. Bez takvih podataka nije moguće u potpunosti potvrditi odnos između samoprocjene i stvarne profesionalne uspješnosti.

Naposljetku, uzorak je pokazao izraženu rodnu neravnotežu, što odražava strukturu nastavničke profesije u razrednoj nastavi, ali ipak ograničava mogućnost generalizacije nalaza.

Dobiveni rezultati imaju značajne implikacije za odgojno-obrazovnu praksu. Prije svega, ističu potrebu ciljane podrške učiteljima razredne nastave putem sustavno osmišljenih i kontekstualno prilagođenih programa profesionalnoga usavršavanja u području TZK. Ti bi programi trebali biti modularni, praktično usmjereni i utemeljeni na suvremenim znanstvenim spoznajama o poučavanju i vrednovanju motoričkih sposobnosti. Poseban naglasak potrebno je staviti na razvoj evaluacijskih kompetencija, uključujući razumijevanje osnovnih načela testiranja motoričkih sposobnosti, interpretaciju rezultata i njihovu primjenu u planiranju diferencirane nastave.

Također se preporučuje sustavno poticanje učitelja na osobno bavljenje sportom i tjelesnom aktivnošću radi jačanja profesionalne samoefikasnosti i modeliranja zdravih životnih navika učenicima. Aktivno sudjelovanje u sportu doprinosi ne samo zdravlju učitelja, nego i većoj vjerodostojnosti i motivacijskom potencijalu u prenošenju sadržaja TZK-a. Rezultati nadalje podupiru potrebu razvoja kulture suradničkoga učenja i uključivanja učitelja TZK-a u mentorske i savjetodavne uloge unutar škola, čime se može osnažiti kolegijalna podrška i podići razina profesionalnih kompetencija nastavnoga osoblja.

Preporuke za buduća istraživanja

S obzirom na utvrđena ograničenja i dobivene rezultate, buduća bi istraživanja trebala primijeniti metode triangulacije podataka, kombinirajući samoprocjene s objektivnim oblicima mjerenja kompetencija. To uključuje izravno opažanje nastavnih aktivnosti, videoanalizu, vrednovanje učeničkih ishoda u TZK-u te mišljenja kolega i stručnjaka iz područja kineziologije.

Preporučuje se provođenje longitudinalnih istraživanja koja bi omogućila praćenje promjena u percepcijama učitelja i stvarnim kompetencijama tijekom vremena, osobito nakon sudjelovanja u specifičnim oblicima stručnoga usavršavanja. Uključivanjem kvalitativnih metoda, poput polustrukturiranih intervjua i studija slučaja, moguće je dublje istražiti razloge određenih obrazaca percepcije te izazove s kojima se učitelji suočavaju u svakodnevnoj praksi.

Nadalje, buduća bi istraživanja trebala uključiti učitelje iz različitih regija i obrazovnih konteksta, uključujući urbane i ruralne škole, kao i učitelje razredne nastave i predmetne nastavnike, kako bi se provjerila stabilnost i mogućnost generalizacije utvrđene faktorske strukture kompetencija. Korisno bi bilo uključiti i učitelje različitih generacija, čime bi se dodatno ispitao učinak radnoga iskustva i promjena kurikula tijekom vremena.

Zaključak

Provedeno istraživanje pruža vrijedan uvid u samoprocijenjene kompetencije učitelja razredne nastave za izvođenje nastave tjelesne i zdravstvene kulture, s posebnim naglaskom na utvrđivanje faktorske strukture i čimbenika koji utječu na profesionalno samopouzdanje učitelja. Dobiveni rezultati pokazuju da učitelji visoko procjenjuju vlastite kompetencije, osobito kada su aktivno uključeni u sportske aktivnosti i kada imaju višu razinu stručnoga napredovanja. Utvrđene su dvije temeljne dimenzije kompetencija: odgojno-obrazovna i evaluacijska, koje upućuju na složenost učiteljske uloge u području TZK-a.

Najizraženije slabosti uočene su u području evaluacijskih kompetencija, što upućuje na potrebu dodatnoga stručnog usavršavanja i proširenja metodičkih sadržaja iz kineziologije u inicijalnom obrazovanju učitelja. Ovi nalazi podupiru važnost integriranoga pristupa profesionalnom razvoju koji uključuje teorijska znanja, praktične vještine i osobnu uključenost u sport.

U konačnici, istraživanje doprinosi razumijevanju profesionalnih potreba učitelja razredne nastave u području TZK-a te može poslužiti kao osnova za oblikovanje strateških obrazovnih politika i sustava podrške s ciljem osiguravanja kvalitetne, na vrednovanju utemeljene i motivirajuće nastave koja doprinosi cjelovitom razvoju učenika u osnovnoškolskom obrazovanju.