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The Relationship Between Multiple Intelligences and Students' Career Interests and Preferences

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Abstract In school practice in the Tuzla Canton, the tools used in the final phase of career orientation are Gardner's Multiple Intelligences Self-Assessment Checklist and Holland's Career Interests and Preferences Questionnaire. Based on these self-assessments, students receive recommendations for secondary school selection and future career choices. These recommendations are derived from a qualitative comparison of the results obtained from the two instruments, without consideration of their statistical correlation. Therefore, this research aimed to examine the relationship between multiple intelligences and students' career interests and preferences, as well as to determine how to optimise the parallel use of the two instruments. Correlational research was conducted on a convenient sample of 124 ninth-grade students. Data were collected using the Multiple Intelligences Self-Assessment Checklist (Gardner, 1983) and the Assessment of Career Interests and Preferences (Holland, 1973). In addition to descriptive statistics, multiple correlation and regression coefficients were calculated. The obtained results indicate that, on average, interpersonal and intrapersonal intelligence are the most developed types of intelligence among students, while their career interests and preferences are most strongly represented in the investigative and social fields. The correlation between individual types of intelligence is strongest with success in performing activities. The second strongest correlation is with career interests, while the weakest correlation is with desired occupations. In three of the six career fields, this latter correlation is statistically insignificant. These results suggest that, when making recommendations for secondary school selection and future career choices, the greatest emphasis should be placed on the results obtained on the activity scale, in order to ensure better conditions for further educational and professional success.

Keywords: 1. student career orientation; 2. multiple intelligences; 3. career interests and preferences.

Odnos višestrukih inteligencija s profesionalnim interesima i sklonostima učenika

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Abstract U školskoj praksi u Tuzlanskom kantonu, u završnoj fazi profesionalne orijentacije, koriste se Gardnerova ček-lista za samoprocjenu višestrukih inteligencija i Hollandov upitnik profesionalnih interesa i sklonosti. Na temelju samoprocjene, učenicima se sugerira upis srednje škole i izbor budućeg zanimanja. Preporuka se donosi na osnovu kvalitativne usporedbe rezultata dobivenih pomoću dva instrumenta, bez uvida u njihov statistički odnos. Stoga je ovo istraživanje imalo za cilj ispitati odnos višestrukih inteligencija i profesionalnih interesa i sklonosti učenika, te utvrditi kako se mogu postići najbolji efekti paralelne upotrebe dva instrumenta. Korelacijsko istraživanje je provedeno na uzorku od 124 učenika devetog razreda. Uzorak je bio prigodni, sa elementima uzorka potpunog obuhvata. Podaci su prikupljeni uz pomoć Ček-liste za samoprocjenu višestrukih inteligencija (Gardner, 1983) i Upitnika profesionalnih interesa i sklonosti (Holland, 1973). Za statističku obradu podataka korišten je računarski program IBM SPSS. Pored deskriptivnih statistika, utvrđeni su koeficijenti multiple korelacije i regresije. Dobiveni rezultati ukazuju da učenici u prosjeku imaju najrazvijeniju interpersonalnu i intrapersonalnu inteligenciju, dok su im profesionalni interesi i sklonosti najviše zastupljeni na istraživačkom i socijalnom polju. Povezanost pojedinačnih tipova inteligencije najjača je sa uspjehom u obavljanju aktivnosti. Na drugom mjestu je korelacija sa profesionalnim interesima, dok je povezanost sa željenim zanimanjima najslabija, te je u tri od šest profesionalnih područja statistički beznačajna. Ovakvi rezultati sugeriraju da je prilikom davanja preporuke za izbor srednje škole i budućeg zanimanja najveću težinu potrebno pripisati rezultatima dobivenim na skali aktivnosti, kako bi se osigurale bolje pretpostavke za daljnji obrazovni i profesionalni uspjeh.

Ključne riječi: 1. profesionalna orijentacija učenika; 2. višestruke inteligencije; 3. profesionalni interesi i sklonosti.

1 Introduction

Gardner's theory of multiple intelligences (Gardner, 1983; Gardner, 2011), which contrasts the general intellectual ability model with a multidimensional model, has found wide application in the field of learning and teaching (Davis, Christodoulou, Seider, and Gardner, 2012). In primary schools in the Tuzla Canton, it is used alongside Holland's theory of career choice (Holland, 1973), for student career orientation. Although both theories are grounded in abilities required for success across a wide range of activities, including professional ones, few studies have examined their alignment and/or complementarity. Therefore, the theoretical justification for the parallel use of the Multiple Intelligences Self-Assessment Checklist and the Career Interests and Preferences Questionnaire can be challenged. While Azmir, Johari and Mahmud (2019), Jayaseely (2020) and Lee, Lai and Wahid (2017) do point to the connection between the results obtained using these two instruments, there are still unresolved questions regarding the weighting factors of the instruments as a whole and their individual subscales, as well as the appropriate application of these results in the student career orientation process. Some other studies that employed somewhat different theoretical frameworks and instruments found that multiple intelligences possess predictive value for career choice in general (Hadi, Aryani and Suwidagdho, 2020; Setyadia, Ruswanti and Wahyuningsihc, 2024; Wolfram, 2023), as well as for satisfaction during professional education (Kiss, 2022).

2 Gardner's Theory of Multiple Intelligences

According to Gardner's theory of multiple intelligences, intelligence is not a general intellectual ability of an individual. Rather, it is a multidimensional construct, and Gardner (1983) identifies seven types of intelligence: linguistic, logical-mathematical, visual-spatial, musical, bodily-kinaesthetic, interpersonal, and intrapersonal intelligence. In his later work, Gardner (1995) expanded his theory by adding naturalistic intelligence, and considered several other potential dimensions of intelligence.

Linguistic intelligence refers to the ability to understand and produce both spoken and written language (Gardner, 1983; Gardner, 1999; Gardner, 2011). Examples of occupations where individuals with well-developed linguistic intelligence excel include writers, speakers, and public relations specialists (Holleran and Gilbert, 2015; Morgan, 2021).

Logical-mathematical intelligence is demonstrated through the ability to analyse, engage in logical reasoning, and manipulate numbers (Gardner, 1983; Gardner, 1999; Gardner, 2011). It is characteristic of scientists, economists, and computer

programmers (Holleran and Gilbert, 2015; Morgan, 2021). However, logical reasoning is required in every profession, regardless of the complexity of the tasks involved.

Visual-spatial intelligence refers to the ability to visualise and create mental images (Gardner, 1983; Gardner, 1999; Gardner, 2011). It is a skill commonly found in architects, sculptors, painters, and photographers (Holleran and Gilbert, 2015; Morgan, 2021).

Musical intelligence describes the ability to produce and recognize complex sound patterns (Gardner, 1983; Gardner, 1999; Gardner, 2011), typically associated with musicians and others working in the music industry (Holleran and Gilbert, 2015; Morgan, 2021).

Bodily-kinaesthetic intelligence refers to the ability to skilfully use one's body and bodily movements, including hands and fingers (Gardner, 1983; Gardner, 1999; Gardner, 2011). This is characteristic of athletes, dancers, mechanics, and surgeons (Holleran and Gilbert, 2015; Morgan, 2021).

Interpersonal intelligence refers to the ability to communicate effectively with others, to recognize their emotions and adapt one's own behaviour to the situation (Gardner, 1983; Gardner, 1999; Gardner, 2011). This intelligence is commonly found in salespeople, teachers, counsellors, and psychotherapists (Holleran and Gilbert, 2015; Morgan, 2021).

Intrapersonal intelligence is described as the ability to recognize one's own emotions, analyse and predict personal behaviour, and apply lessons learned from past experiences (Gardner, 1983; Gardner, 1999; Gardner, 2011; Holleran and Gilbert, 2015; Morgan, 2021).

Gardner's theory of multiple intelligences has been validated through numerous studies, both generally and specifically in the field of education (Gardner and Moran, 2006). However, it has also been the subject of scientific criticism. Most critics point to the strong correlation between Gardner's factors and the general (G) factor of intelligence, thereby questioning the multidimensionality of the construct (Barnett, Ceci, and Williams, 2006; Visser, Ashton, Vernon, 2006; Willingham, 2004). Based on extensive meta-analyses, Shearer and Karaninan (Shearer and Karaninan, 2017; Shearer 2019) suggest the existence of distinct neurological structural units for each of the eight types of intelligence. This provides a scientifically grounded physiological explanation for the theory of multiple intelligences.

3 Holland's Theory of Career Choice

According to Holland's Theory of Career Choice (Holland, 1973), there are six core occupational personality types: Realistic, Investigative, Artistic, Social, Enterprising and Conventional. As with any typology, pure types exist only in theory. In practice, each individual represents a specific combination of these types. The maximum number of possible combinations is 720 (Holland, 1973).

The Realistic type (doers) is characterised by individuals who possess motor or manual skills (Holland, 1973). They enjoy working with objects, machines, tools, plants or animals, and prefer spending time outdoors. They are inclined toward manual work, are practical by nature and excel at solving problems efficiently (Shearer and Luzzo, 2009; Spokane and Cruza-Guet, 2005).

The Investigative type (thinkers) includes individuals who enjoy observing, learning, investigating, evaluating, or solving problems (Holland, 1973). They often prefer working independently, are typically skilled in mathematics and the natural sciences, and enjoy analysing data (Shearer and Luzzo, 2009; Spokane and Cruza-Guet, 2005).

The Artistic type (creatives) gravitates toward art, innovation, and intuition (Holland, 1973). They prefer working in unstructured environments where they can express their imagination and creativity. They enjoy theatrical and musical performances, as well as virtual art (Shearer and Luzzo, 2009; Spokane and Cruza-Guet, 2005).

The Social type (helpers) enjoys working with people to educate, teach, inform, assist, or heal them (Holland, 1973). They are typically skilled in public speaking, empathetic and always ready to help others (Shearer and Luzzo, 2009; Spokane and Cruza-Guet, 2005).

The Enterprising type (persuaders) also enjoys working with people, but focuses on influencing or persuading them (Holland, 1973). They prefer leading or managing to achieve organizational goals or economic profit. They are characterized by strong persuasion skills and assertiveness (Shearer and Luzzo, 2009; Spokane and Cruza-Guet, 2005).

The Conventional type (organisers) pays attention to details and enjoys working with data. These individuals have strong administrative skills (Holland, 1973) and follow instructions well. They have excellent organizational skills and are proficient in tasks involving numbers. They excel in structured environments (Shearer and Luzzo, 2009; Spokane and Cruza-Guet, 2005).

Holland's Theory of Career Choice has broad applications in the field of career counselling. The validity of the constructs has been confirmed in numerous studies (Gottfredson, 1980; Leong and Morris, 1989; Nauta, 2010). Criticism of the Theory is based on the limited predictive value of the results obtained from the questionnaire

in relation to subsequent job performance success (Savickas, 1991). Leong and Morris (1989) attribute this lack of predictive value to career maturity, which develops later in life and has proven to be a significant factor in job success.

4 Research Aim and Methodology

The aim of the research was to examine the relationship between multiple intelligences and career interests and preferences in the context of career orientation among final-year primary school students (9th grade).

The research was based on the assumption that there is a positive correlation between these constructs, and that certain types of intelligence have predictive value for specific professional interests and preferences. Additionally, it was hypothesised that the predictive value would vary depending on self-assessed success in performing activities, expressed career interests and career aspirations.

The study included 124 ninth-grade students from Miladije Primary School in Tuzla during the 2022-2023 and 2023-2024 school years, comprising 66 male and 58 female students. The sample was a convenience sample.

The methodological framework of the empirical part of the study was based on the survey method, represented through techniques of assessment, self-assessment and scaling. In addition to descriptive statistical procedures, multiple regression analysis was employed. Statistical data analysis was conducted using IBM SPSS software.

Data collection instruments included the Multiple Intelligences Self-Assessment Checklist (Gardner, 1983) and the Career Interests and Preferences Questionnaire (Holland, 1973). The Multiple Intelligences Self-Assessment Checklist consists of 28 statements, divided into seven subscales, with four statements for each of the seven types of intelligence. (The instrument officially used by the schools does not include naturalistic intelligence, so the eighth subscale was excluded from the study due to lack of data.) Each statement was accompanied by four degrees of agreement. The Career Interests and Preferences Questionnaire consists of three scales: the activity scale (success in activities important for the profession), the interest scale (interest in certain occupations) and the occupation scale (choice of future occupation). Each scale has 18 statements – with three statements for each of the Realistic, Investigative, Artistic, Social, Enterprising and Conventional personality types, resulting in a total of 54 statements in the Questionnaire. Respondents rated themselves using a five-point Likert scale.

The response rate for the questionnaires was 100%, as schools have a legal obligation to provide career orientation for all students.

5 Results

The results presented in Table 1 show that, based on the average total scale value of self-assessment, interpersonal intelligence is the highest among final-year primary school students, followed by intrapersonal, bodily-kinaesthetic, visual-spatial, linguistic, musical, and logical-mathematical intelligence.

Table 1: ***Descriptive Statistics for Gardner's Subscales***

	N	min.	max.	M	σ	rank
Linguistic	124	1	12	6.90	2.51	5
Mathematical	124	1	11	5.62	2.67	7
Visual	124	2	12	7.23	2.12	4
Bodily-Kinaesthetic	124	1	12	8.29	2.67	3
Musical	124	1	12	6.74	2.74	6
Interpersonal	124	1	12	9.15	2.36	1
Intrapersonal	124	1	12	8.37	2.23	2

Note: N – number of participants; M – mean; σ – standard deviation.

As seen in Table 2, according to the average total scale value obtained from all three subscales of Holland's Career Interests and Preferences Questionnaire, the investigative type ranks first among final-year primary school students, followed by social, enterprising, realistic, artistic, and conventional.

Table 2: ***Descriptive Statistics for Holland's Subscales***

	N	min.	max.	M	σ	rank
Realistic	124	16	43	26.37	5.38	4
Investigative	124	14	47	29.06	6.88	1
Artistic	124	10	50	25.62	8.76	5
Social	124	14	50	28.96	7.17	2
Enterprising	124	10	45	27.33	7.22	3
Conventional	124	11	47	22.83	7.23	6

Note: N – number of participants; M – mean; σ – standard deviation.

Table 3 shows the results of the multiple correlation and regression model for the realistic occupational type. The relationship between multiple intelligences and the realistic occupational type is weak (R=.35, p=.02), which means that multiple intelligences can explain about 13% of the variance of the realistic occupational type. According to the definition of the realistic type, the predictor variable in the model is bodily-kinaesthetic intelligence (ß=.28, p=.00). Surprisingly, linguistic intelligence (ß=-.32, p=.01) also appears as a predictor.

Breaking down the model for the realistic occupational type into three models, which correspond to the self-assessment of success in activities important for the occupation, interest in occupations within the realistic domain and choice of occupation within the realistic domain, resulted in a moderate correlation for the activity model (R=.47, p=.00) A weaker and statistically insignificant correlation was found for the models of interest and occupation. Alongside bodily-kinaesthetic intelligence (ß=.39, p=.00), logical-mathematical intelligence appears (ß=.23, p=.01) as a predictor variable in the activity model.

Table 3: ***Multiple Correlation Coefficients for the Realistic Occupational Type Model***

	R	R^2	ΔR^2	std. err.	F	p
Realistic type (total)	.35	.13	.76	5.17	2.45	.02
Realistic type (activities)	.47	.22	.18	1.89	4.89	.00
Realistic type (interest)	.27	.07	.02	2.29	1.4	.21
Realistic type (occupation)	.31	.09	.04	2.64	1.8	.08

Note: R–coefficient of correlation; R^2– coefficient of multiple determination; ΔR^2– adjusted R^2; F–statistic; p –level of significance.

Table 4 shows the results of the multiple correlation and regression model for the investigative occupational type. The correlation between multiple intelligences and the investigative occupational type is moderate (R=.47; p=.00), and multiple intelligences can explain approximately 22% of the variance in the investigative occupational type. The predictor variables in the model include logical-mathematical (ß=.27, p=.00) and musical intelligence (ß=.20, p=.04).

Breaking down the investigative occupational type model into three models, corresponding to the self-assessment of success in activities important for the occupation, interest in occupations within the investigative domain, and choice of occupation within the investigative domain, also resulted in a moderate, but

stronger correlation for the activity model (R=.57, p=.00), and a weaker correlation for the interest (R=.40, p=.00) and choice of occupation (R=.37, p=.01) models. The activity model is significantly influenced by logical-mathematical intelligence (ß=.28, p=.00), the interest model by musical intelligence (ß=.32, p=.00), and the choice of occupation model by logical-mathematical (ß=.24, p=.01) and intrapersonal intelligence (ß=-.23, p=.04).

Table 4: ***Multiple Correlation Coefficients for the Investigative Occupational Type Model***

	R	R^2	ΔR^2	std. err.	F	p
Investigative type (total)	.48	.23	.18	6.21	5.01	.00
Investigative type (activities)	.57	.32	.28	1.77	8.11	.00
Investigative type (interest)	.40	.16	.11	2.86	3.18	.00
Investigative type (occupation)	.37	.13	.08	3.63	2.67	.01

Note: R–coefficient of correlation; R^2– coefficient of multiple determination; ΔR^2– adjusted R^2; F–statistic; p –level of significance.

Table 5 presents the results of the multiple correlation and regression model for the artistic occupational type. The relationship between multiple intelligences and the artistic occupational type is moderate (R=.58, p=.00), with multiple intelligences accounting for approximately 34% of the variance in the artistic occupational type. In line with the definition of the artistic type, the model is significantly influenced by musical (ß=.44, p=.00) and visual-spatial intelligence (ß=.23, p=.01).

Breaking down the model for the artistic occupational type into three models corresponding to the self-assessment of success in activities important for the occupation, interest in artistic occupations within the artistic domain and the choice of occupation within the artistic domain, resulted in moderate but weaker correlations for the models of activity (R=.50, p=.00), interest (R=.56, p=.00) and choice of occupation (R=.49, p=.00). Musical intelligence is a significant predictor in all three models (respectively ß=.33, p=.00; ß=.37, p=.00; ß=.40, p=.00), while visual-spatial intelligence contributes to the interest (ß=.23, p=.01) and choice of occupation models (ß=.21, p=.02), and bodily-kinaesthetic intelligence only contributes to the model of interest (ß=-.24, p=.00).

Table 5: ***Multiple Correlation Coefficients for the Artistic Occupational Type Model***

	R	R^2	ΔR^2	std. err.	F	p
Artistic type (total)	.58	.34	.30	7.32	8.63	.00
Artistic type (activities)	.50	.25	.20	2.48	5.55	.00
Artistic type (interest)	.56	.31	.27	2.95	7.76	.00
Artistic type (occupation)	.49	.24	.19	3.62	5.22	.00

Note: R–coefficient of correlation; R^2– coefficient of multiple determination; ΔR^2– adjusted R^2; F–statistic; p –level of significance.

Table 6 presents the results of the multiple correlation and regression model for the social occupational type. The correlation between multiple intelligences and the social occupational type is moderate (R=.51, p=.00), with multiple intelligences explaining approximately 26% of the variance in the social occupational type. As expected, the predictor variable in the model is interpersonal intelligence (ß=.23, p=.01).

Breaking down the model of the social occupational type into three models that correspond to self-assessment of success in activities important for the occupation, interest in occupations within the social domain and the choice of occupations within the social domain, resulted in a moderate but somewhat stronger correlation for the activity model (R=.53, p=. 00), and weaker correlations for models of interest (R=.34, p=.03) and choice of occupation (R=.41, p=.02). Interpersonal intelligence is a predictor for the activity and interest models (respectively ß=.38, p=.00; ß=.24, p=.04), with bodily-kinaesthetic intelligence acting as a predictor to the choice of occupation model (ß=-.18, p=.04).

Table 6: ***Multiple Correlation Coefficients for the Social Occupational Type Model***

	R	R^2	ΔR^2	std. err.	F	p
Social type (total)	.51	.26	.21	6.34	5.87	.00
Social type (activities)	.53	.28	.24	1.96	6.65	.00
Social type (interest)	.34	.12	.06	2.96	2.29	.00
Social type (occupation)	.41	.17	.12	3.56	3.45	.00

Note: R–coefficient of correlation; R^2– coefficient of multiple determination; ΔR^2– adjusted R^2; F–statistic; p –level of significance.

Table 7 presents the results of the multiple correlation and regression model for the enterprising occupational type. The correlation between multiple intelligences and the enterprising occupational type is moderate (R=.47, p=.00), with multiple intelligences explaining about 22% of the variance. The predictor variables in the model include logical-mathematical (ß=.21, p=.02), bodily-kinaesthetic (ß=.22, p=.01) and interpersonal intelligence (ß=.28, p=.01).

Breaking down the model of the enterprising occupational type into three models, corresponding to the self-assessment of success in activities important for the occupation, interest in occupations within the enterprising domain and the choice of occupation in the enterprising domain, resulted in a moderate but slightly stronger correlation for the activity model (R=.54, p=.00), weak correlation for the interest model (R=.39, p=.00) and a statistically insignificant correlation for the occupational choice model (R=.32, p=.07). Logical-mathematical intelligence is present as a predictor variable in both the interest and activity models (respectively ß=.21, p=.02; ß=.20, p=.02), along with bodily-kinaesthetic (ß=.23, p=.00) and interpersonal intelligence (ß=.42, p=.00) in the activity model.

Table 7: ***Multiple Correlation Coefficients for the Enterprising Occupational Type Model***

	R	R^2	ΔR^2	std. err.	F	p
Enterprising type (total)	.47	.22	.17	6.55	4.78	.00
Enterprising type (activities)	.54	.30	.25	1.95	7.12	.00
Enterprising type (interest)	.39	.15	.10	3.17	2.98	.00
Enterprising type (occupation)	.32	.10	.04	3.71	1.90	.07

Note: R–coefficient of correlation; R^2– coefficient of multiple determination; ΔR^2– adjusted R^2; F–statistic; p –level of significance.

Table 8 presents the results of the multiple correlation and regression model for the conventional occupational type. The correlation between multiple intelligences and conventional occupational type is statistically insignificant (R=.32, p=.06).

Breaking down the model of the conventional occupational type into three models corresponding to self-assessment of success in activities important for the occupation, interest in occupations within the enterprising domain and the choice of occupation within the enterprising domain, resulted in a moderate correlation for the activity model (R=.41, p=.00), and a statistically insignificant correlation

for the models of interest and choice of occupation. The predictor variables in the activity model include logical-mathematical (ß=.26, p=.00), linguistic (ß=.27, p=.02) and intrapersonal intelligence (ß=-.22, p=.04).

Table 8: ***Multiple Correlation Coefficients for the Conventional Occupational Type Model***

	R	R^2	ΔR^2	std. err.	F	p
Conventional type (total)	.32	.10	.05	7.04	1.96	.06
Conventional type (activities)	.41	.17	.12	2.27	3.53	.00
Conventional type (interest)	.23	.05	.00	2.67	1.00	.43
Conventional type (occupation)	.22	.05	-.00	3.78	0.89	.51

Note: R–coefficient of correlation; R^2– coefficient of multiple determination; ΔR^2– adjusted R^2; F–statistic; p –level of significance.

Based on the results presented above, the research hypothesis was confirmed, stating that there is a positive correlation between multiple intelligences on the one hand, and the career interests and preferences of final-year elementary school students on the other. Additionally, it was found that certain types of intelligence have predictive value for particular career interests and preferences. Furthermore, a part of the hypothesis was accepted, indicating that the predictive value of multiple intelligences varies in the case of self-assessed success in performing activities, expressed career interests and occupational aspirations, with the tendency for the correlation between multiple intelligences and success in performing activities to be higher than the correlation between multiple intelligences and expressed career interests, and especially higher than the correlation with the choice of occupation.

6 Discussion

The results obtained show a moderate correlation between multiple intelligences and career interests and preferences among final-year primary school students. Exceptions include the realistic occupational type, where the correlation is weak, and the conventional type, where the correlation between multiple intelligences and the integrated model of career interests and preferences is not statistically significant. These results are in line with existing scientific findings (Azmir, Johari

and Mahmud, 2019; Jayaseely, 2020; Lee, Lai and Wahid, 2017), and align with theoretical descriptions of multiple intelligences and career interests and preferences. Additionally, the results of this research align with findings from previous studies concerning the general correlation between intellectual abilities and career choice (Hadi, Aryani and Suwidagdho, 2020; Setyadia, Ruswanti and Wahyuningsihc, 2024; Wolfram, 2023).

Breaking down the models of career interests and preferences of students, and separately analysing their self-assessment of success in performing activities, expressed career interests and career choice, resulted in a strengthening of the correlation between multiple intelligences and self-assessed success in performing activities, while weakening the correlation for expressed career interests and aspirations. The correlation between multiple intelligences and success in activities exceeded not only the individual correlations of intelligence with interests and occupational choices, but also with the overall Holland model. Such results are somewhat expected, because, as noted in the introduction, the claims that describe multiple intelligences also include the abilities necessary for success in performing various occupations. The decline in the correlation between intelligence and career interests, and especially career choice however, shows that students assess their own intelligence and success in activities consistently, while their career interests and career choice are possibly more strongly influenced by other factors. Those potential factors include parental expectations, peer pressure, the greater appeal of certain occupations, and the expected greater benefits associated with certain occupations (Adams, 2014; Kazi and Akhlaq, 2017; Alexander et al., 2010).

The only professional profile where the correlation coefficients between multiple intelligences and the individual models of activities, interests and occupations do not exceed the correlation coefficient between multiple intelligences and the integrated model of career interests and preferences is the artistic occupational type. This result suggests that, for occupations within the domain of arts, talent plays a more significant role compared to other professions, and that students are aware of this. Therefore, when expressing career interests and preferences, they remain focused on their identified abilities. An additional supporting argument for this claim, which further reinforces further Holland's integrated model, is the predictive value of musical intelligence in both the integrated and individual models.

The predictive value of multiple intelligences for the other five domains of career interests and preferences is largely consistent with expectations, with the exception of linguistic intelligence as a predictor in the integrated model of the realistic occupational type. However, this predictive value is not observed in the sub-model

assessing success in realistic occupational activities. A greater alignment between theoretical concepts and predictive variables of multiple intelligences in the case of success in activities across all occupational types provides further confirmation of strength and greater weight placed on success in performing activities as opposed to expressed career interest and occupational choice.

The absence of correlation between multiple intelligences and the integrated model of the conventional occupational type suggests that, in the students who opt for careers in this field, no particular intelligence stands out.

The importance of aligning multiple intelligences with career choice for successful professional orientation becomes even more important in the light of Kiss's (2022) findings about the relationship between professional orientation and satisfaction during professional education.

7 Conclusion

Gardner's Multiple Intelligences Self-Assessment Checklist can serve as a valuable addition to Holland's Career Interests and Preferences Questionnaire in the process of student career orientation. The research confirmed the hypothesis that there is a positive correlation between multiple intelligences and career interests and preferences of final-year primary school students, as well as that certain types of intelligence have a predictive value for specific career interests and preferences. The study identified varying predictive values of multiple intelligences in relation to self-assessed success in performing activities, expressed career interest and career choice. The correlation between multiple intelligences and success in performing activities tends to be stronger than the correlation of multiple intelligences and expressed career interests, and particularly stronger than the correlation with career choice.

Therefore, it is recommended that, when creating a student's career orientation report, especially in cases where Holland's Code is not clearly defined, greater emphasis should be placed on success in activities and self-assessed intelligence rather than expressed career interest and career choice. It is also recommended for assessments of career interests and preference to be conducted earlier in primary school, and for students gravitating towards more conventional occupations to receive additional support in recognising their abilities. A limitation of this study is the relatively small sample size.

Declaration of non-conflict of interest

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