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Examination of the Relationship between Classroom Teachers' Multiple Intelligence Areas and Their Students' Academic Achievements

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ABSTRACT The purpose of this research is to determine the relationship between multiple intelligence areas of 4th and 5th grade teachers and the grade point averages of their students in Turkish, mathematics, science and technology and social studies courses. The research sample consists of 81 classroom teachers who worked in primary schools in the central districts of Diyarbakir during the 2011-2012 academic year. In this research, single and relational survey models were used. In the analysis of the data obtained from this study, Descriptive Statistics, Independent Sample t-test and Pearson Product Moment Correlation Coefficient were used. The findings of the study, suggest that there was no statistically significant difference between the classroom teachers' average scores of verbal-linguistic, visual-spatial, naturalistic, musical, logical-mathematical, intrapersonal, interpersonal and bodily-kinesthetic intelligence areas in terms of the "gender" and "grade level" variables.

INTRODUCTION

The issue of what intelligence is and how it should be defined has been an area of interest for many researchers. While some researchers have relied upon Intelligence Quotient (IQ) tests, which measure human intelligence by taking intellectual functions or performance as base, and defined intelligence as a quantity that these tests measure, others identified intelligence as learning power that an individual possess (Saban 2005). Consequently, intelligence researchers go into their research with what appear to be different ideological predispositions. These predispositions seem to predict the kinds of findings that emerge from their research (Sternberg 2014).

Gardner stated that he defined intelligence more broadly by objecting to the traditional concept, which argues that human intelligence can be measured objectively (Armstrong 2000). Gardner claims that intelligence includes numerous abilities, which cannot be explained with just one factor, and that humans do not have a unique intelligence (Selcuk et al. 2004); rather, all of these abilities and capacities exist in every human at a minimum level (Vincent and Ross 2001; Weller 1999).

Gardner defines intelligence as the ability to discover and solve problems and fashion valuable products in one's cultural setting (Campbell 1992). Gardner (1999) lists the characteristics of intelligence as follows:

- Every human has the ability to increase and improve his/her intelligence.
- Intelligence not only changes, but it can also be taught to others.
- Intelligence is a multidimensional phenomenon resulting from interaction of the intellect and the brain.
- Intelligence is a whole, complete in itself despite being multidirectional.
- Every individual can become dominant in one of the intelligence areas.
- Various areas operate with each other, generally in harmony.
- There are many ways in which an individual can be intelligent in every area.

Gardner (1993) separated the intelligences into seven groups according to ability in his book *Multiple Intelligences: The Theory in Practice*. Then, Gardner, mentioning an eighth area, stat-

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ed that the existence of a ninth area was possible in his book *Intelligences Reframed: Multiple Intelligences for the 21st Century*, which was published in 1999 (Armstrong 2000; Saban 2005). The eighth intelligence that Gardner defined is naturalistic intelligence (Hoerr 1997). Existential intelligence, which was theorized as the possible ninth area, has been examined (Bumen 2010). According to the multiple intelligences concept, every intelligence area is equivalent, and no single one or few are more important than others (Walters 1992). However, the one useful purpose that these multiple claims for various types of intelligence serve is to draw attention away from the traditional focus on rationality, reason, and the prioritizing of mathematical dimensions of intelligence, as well as quantitative, 'scientific' approaches to understanding and measuring intelligence. Rather, the approach draws attention to emotional, interpersonal, intrapersonal, social, cultural, and humanistic dimensions of human thought and behavior (Macnamara 2015).

The descriptions of each of Gardner's eight intelligences explicitly refer to skills, capacities, and potential (Macnamara 2015). The characteristics of these areas are as follows.

Verbal-Linguistic Intelligence

Verbal-linguistic intelligence is related to the capacity for using words effectively, whether orally or in writing (Saban 2015). It is the efficient use of language as frequently demonstrated by a politician, a poet, a writer or a journalist (Armstrong 2000; Saban 2005). Individuals who have this intelligence area meet the requirements of grammatical structure, syntax, and word stress when they make a statement (Saban 2005). Gardner defined this area as the sensitivity to meaning, sounds and structure of words (Weller 1999; Green et al. 2005). Accordingly, individuals who have strong verbal-linguistic intelligence learn words best by seeing, hearing and saying (Saban 2005; Vincent and Ross 2001).

Logical-Mathematical Intelligence

Logical-mathematical intelligence is related to the capacity for using numbers effectively and reasoning well (Saban 2015). According to Gardner, logical-mathematical intelligence includes discerning logical and numerical examples and symbols and using long chains of reasoning (Weller 1999).

Visual-Spatial Intelligence

Spatial intelligence is related to the ability to perceive the visual-spatial world accurately and to perform transformations on those perceptions (Saban 2015). An individual who has this area of intelligence observes, perceives and evaluates the world around him/her. Beyond this, they visualize spatial ideas graphically. Individuals who exhibit strength in this area are quite sensitive to phenomena such as place, time, color, line, image, form and pattern and relationships between these (Selcuk et al. 2004).

Bodily-Kinesthetic Intelligence

Bodily-kinesthetic intelligence is related to the capacity to use one's own body to express ideas and feelings and to produce things (Saban 2015). According to Gardner, this intelligence area includes controlling one's bodily motions and making use of objects skillfully (Weller 1999).

Musical Intelligence

Musical intelligence is related to the capacity to perceive, transform or express musical forms (Saban 2015), including, for example, the ability to recognize, transform and compose rhythms, pitches, melodies and tones in different musical forms (Green et al. 2005). The individual who exhibits strength in this area is quite sensitive to peaks and troughs, acoustic characteristics, melodies, rhythms, tones and instruments (Saban 2005).

Interpersonal Intelligence

Interpersonal intelligence is related to the ability to perceive other people's moods, intentions, and feelings (Armstrong 2000; Gardner 1993; Saban 2015). According to Gardner, individuals who have high interpersonal intelligence are sensitive and responsive to other individuals' moods, temperaments and motivations (Weller 1999), and they empathize with others better (Gardner 1993). This intelligence is demonstrated in behaviors such as communicating with other individuals, comprehending moods and skills of others, as well as understanding them very well. Politicians, religious leaders, teachers, and psychologists utilize these abilities skillfully (Campbell et al. 1996).

Intrapersonal Intelligence

This area refers to having deep understanding of the self, therefore acquiring knowledge about the self and being capable of acting in accordance with the living conditions in light of knowledge acquired (Armstrong 2000; Gardner 1993; Green et al. 2005; Saban 2015). This intelligence area involves abilities of the individual to assess the self objectively, being aware of emotions, needs and goals, self-disciplining, and feeling confident (Saban 2005).

Naturalistic Intelligence

Naturalistic intelligence is related to expertise in the recognition and classification of the numerous species of an individual's environment (Saban 2015). Naturalistic intelligence is also responsive to other features of the natural world (clouds, rock formations), and it includes the ability to make distinctions between living organisms (plants, animals) (Checkly 1997). Gardner defines the people having naturalistic intelligence as the individuals who can recognize the flora and fauna in an area, make important differences in the natural world, and use their abilities in a productive way in areas such hunting, farming, and biology (Meyer 1997).

Multiple intelligence is a new model of learning that helps students learn effectively (Al-Kalbani and Al-Wahaibia 2015). If teachers can determine the intelligences (enhanced abilities) in each student and then teach to those enhanced abilities, students will learn better (Adcock 2014). According to this theory, not all students will have the same dominant intelligence area in the classroom environment. At the same time, the students' dominant intelligence areas have an effect on their learning styles as well. For example, students who have strong verbal-linguistic intelligence learn better by hearing, talking, reading, discussing and communicating and interacting with others. Students who are strong in logical intelligence learn better by establishing the logical relationships between events, digitizing and calculating the properties of objects in a quantitative manner, and thinking over abstract relationships between events (Checkly 1997; Morgan 1996; Saban 2005; Shearer 2004). Hence, Brauldi (1996) expresses that the best way to benefit from the theory is to behold the varied abilities and talents of students and arrange teaching practices according to these differences. Here, the important point is organization of the educational environment by means appealing to all intelligence areas, not according to one specific intelligence area (Stanford 2003).

The first step for teachers who want to apply the multiple intelligence theory to their classes efficiently must be to discover their own intelligence areas and become conscious of the theory. Discovering multiple intelligence areas of teachers helps give an idea of the intelligence areas used widely in their own lives, as well as to realize the areas of intelligence that require development (Gungor 2005). Teachers perform a variety of activities in the process of learning teaching, but they often unintentionally exhibit preferences for activities that match their own strongest areas of intelligence. They may prefer some activities, which are not compatible with their own intelligence areas, or they may add new and different activities, which are compatible with their own intelligence (Genc 2012). In a study made by Ghamrawi (2014), teachers showed a tendency to address the intelligences that were their personal predominant intelligences. Thus, these findings suggest that there is an important relationship between the teaching style of teachers who use MI theory and their personal multiple intelligence profiles when the choice of teaching activities is left up to them. The question then becomes whether the preferences of teachers affect student academic achievement in the learning process either positively or negatively. Research results determining such a relationship between teachers' multiple intelligence areas and their students' academic success have not been observed in the literature search. As such, this study is expected to contribute to this aspect of the literature.

The Purpose of Research

The purpose of this research is to determine the relationship between multiple intelligence areas of classroom teachers and their students' academic success (school report card averages) in Turkish, mathematics, science and technology and social studies courses. In the direction of this general purpose, the following sub-objectives were sought:

1. What are the classroom teachers' average scores of multiple intelligence areas on the multiple intelligences inventory?

2. Is there a statistically significant difference between the classroom teachers' average scores of multiple intelligence areas on the multiple intelligences inventory in terms of gender variable?
3. Is there a statistically significant difference between the classroom teachers' average scores of multiple intelligence areas on the multiple intelligences inventory in terms of grade level variable?
4. Is there a statistically significant relationship between the classroom teachers' average scores of multiple intelligence areas on the multiple intelligences inventory and their students' academic success averages in Turkish, mathematics, social studies and science and technology courses?

METHODOLOGY

Research Model

In this research, single and relational survey models among general survey models were used in order to determine the relationship between the classroom teachers' multiple intelligence areas and their students' academic success averages (grade point average in school report). Single survey models are the research models in which variables such as event, matter, individual, group, institution and subject belong to the unit and are sought to be described separately. Relational survey models are the research models, which aim to determine the presence of covariance and/or degree of covariance between two or more variables (Karasar 2011).

Research Sample

The research arena is composed of classroom teachers who worked in primary schools in the central districts of Diyarbakir in during the 2011-2012 academic year. In this study, because it is not possible to reach the entirety of this teaching universe, a sample selection has been concluded. A simple random sampling method was used in the selection of the sample. It is an unbiased selection process as it takes into account the possibility of being equal and independent in the sample selection of each unit in the universe (Balci 2004). The research sample consists of 81 classroom teachers. The sample consists of 50 male and 31 female teachers, of whom 42 are 4^{th} grade teachers and 39 are 5^{th} grade teachers.

Data Collection Instrument and Procedure

The Multiple Intelligences Inventory developed by Gardner (1994) and adapted to Turkish by Oral (2001) was used in order to identify classroom teachers' multiple intelligence areas. This inventory with its 80 articles was prepared Likert-style. The inventory includes ten articles for each type of intelligence. The scores that can be obtained for each area of intelligence are between 10 and 50. The inventory was applied to 615 university students studying in different departments. Cronbach's Alpha internal consistency coefficient regarding the whole inventory was found to have a reliability of .90, and the reliability of each of the eight subdimensions in the inventory was separately calculated. Cronbach's Alpha internal consistency coefficients for the inventory's subdimensions were determined as follows: Bodily-Kinesthetic Intelligence .60, Interpersonal Intelligence .62, Intrapersonal Intelligence .63, Logical-Mathematical Intelligence .62, Musical Intelligence .79, Verbal-Linguistic Intelligence .62, Visual-Spatial Intelligence .60, and Naturalistic Intelligence .63 (Oral 2001). The inventories with reliability coefficients above .60 are considered fairly reliable and those above .80 as highly reliable (Ozdamar 1999). Accordingly, it can be said that each dimension of the inventory is reliable, as is the entire inventory.

The Multiple Intelligences Inventory used in the study has been applied to classroom teachers personally by the researchers. The information on the grade point average of the students of the teachers in this study was collected from the school administration.

Data Analysis

The Statistical Package for the Social Sciences (SPSS) program was used for analysis of the data obtained in the study, and a significance level of .05 was used for all analyses. Descriptive statistics were used to determine intelligence areas of classroom teachers. Additionally, the normal distribution of the data was tested in order to determine the appropriate analysis type for the data collected in the study. For this purpose, Kolmogorov-Smirnov (K-S) test was used. Results from this test are shown in Tables 1 and 2.

As seen in Tables 1 and 2, it was determined that the data obtained from the Kolmogorov-Smirnov (K-S) test represented a normal distribution (p>.05). Therefore, the Independent Sam-

Table 1: **Tests of normality**

Teachers' multiple intelligence areas	*Kolmogorov-Smirnov*		
	Statistic	*df*	*Sig.*
Verbal-Linguistic	.078	81	.200
Visual-Spatial	.081	81	.200
Naturalistic	.098	81	.051
Musical	.096	81	.061
Logical-Mathematical	.102	81	.055
Intrapersonal	.075	81	.200
Interpersonal	.066	81	.200
Bodily-Kinesthetic	.061	81	.200

Table 2: **Tests of normality**

Students' grade point averages	*Kolmogorov-Smirnov*		
	Statistic	*df*	*Sig.*
Turkish	.080	81	.200
Mathematics	.065	81	.200
Science and Technology	.073	81	.200
Social Studies	.052	81	.200

ples t-test and Pearson Product Moment Correlation Coefficient were used for analyzing the data collected in the study.

"Completely true of me (5)," "Very true of me (4)," "Moderately true of me (3)," "Slightly true of me (2)," and "Very little true of me (1)" were used for expressions of the Multiple Intelligence Inventory.

FINDINGS

The findings are presented in accordance with the sub-purposes of the study. The average scores and standard deviations of classroom teachers' intelligence areas are given in Table 3.

Table 3: The average scores and standard deviation of classroom teachers' intelligent areas

Teachers' multiple intelligence areas	*n*	*Average scores*	*ss*
Verbal-Linguistic	81	35.02	5.912
Visual-Spatial	81	35.15	6.091
Naturalistic	81	37.06	5.883
Musical	81	31.21	9.034
Logical-Mathematical	81	40.15	6.000
Intrapersonal	81	34.05	6.064
Interpersonal	81	37.21	6.158
Bodily-Kinesthetic	81	35.65	5.738

In Table 3, it is demonstrated that the average scores of classroom teachers' intelligence areas ranged between 31.21 and 40.15, and scores were higher than average. The logical-mathematical (40.15) intelligence area has the highest average score and the musical intelligence area (31.21) has the lowest. This is followed by classroom teachers' interpersonal (37.21), nature (37.06), bodily-kinesthetic (35.65), visual-spatial (35.15), verbal-linguistic (35.02) and intrapersonal (34.05) intelligence area average scores.

The independent sample t-test results of the average scores on the intelligence area of classroom teachers in terms of gender are presented in Table 4.

Considering the findings in Table 4, it is demonstrated that there was no statistically significant difference on verbal-linguistic [$t_{(79)}$=0.337, p>.05], visual-spatial [$t_{(79)}$=0.726, p>.05], nature

Table 4: Independent samples t-test results of the average score on the intelligence area of classroom teachers in terms of gender

Teachers' multiple intelligence areas	*Gender*	*n*	*Average scores*	*ss*	*Leven's test*		*sd*	*t*	*p*
					f	*p*			
Verbal-Linguistic	Female	31	34.74	5.927	.146	.703	79	-.337	.737
	Male	50	35.20	5.956					
Visual-Spatial	Female	31	35.77	6.682	.656	.420	79	.726	.470
	Male	50	34.76	5.731					
Naturalistic	Female	31	37.42	5.870	.178	.674	79	.429	.669
	Male	50	36.84	5.940					
Musical	Female	31	32.35	8.432	1.608	.208	79	.897	.372
	Male	50	30.50	9.401					
Logical-Mathematical	Female	31	40.61	7.269	3.390	.069	79	.546	.586
	Male	50	39.86	5.119					
Intrapersonal	Female	31	34.32	6.710	.705	.403	79	.317	.752
	Male	50	33.88	5.692					
Interpersonal	Female	31	37.19	6.784	.207	.650	79	-.019	.985
	Male	50	37.22	5.807					
Bodily-Kinesthetic	Female	31	36.13	5.772	.062	.803	79	.569	.571
	Male	50	35.38	5.757					

[$t_{(79)}$=0.429, p>.05], musical [$t_{(79)}$=0.897, p>.05], logical-mathematical [$t_{(79)}$=0.546, p>.05], intrapersonal [$t_{(79)}$=0.317, p>.05], interpersonal [$t_{(79)}$=0.019, p>.05] or bodily-kinesthetic [$t_{(79)}$=0.569, p>.05] intelligence area average scores in terms of the *gender* variable. In other words, it can be said that the gender variable does not have an impact on the average score of the intelligence areas of classroom teachers.

In Table 5, the independent sample t-test results of the average scores of classroom teachers' intelligence areas in terms of class-level variable are given.

According to the findings in Table 5, there was no statistically significant difference on verbal-linguistic [$t_{(79)}$=1.990, p>.05], visual-spatial [$t_{(79)}$=1.312, p>.05], nature [$t_{(79)}$=1.036, p>.05], musical [$t_{(79)}$=0.856, p>.05], logical-mathematical [$t_{(79)}$=0.731, p>.05], intrapersonal [$t_{(79)}$=1.248, p>.05], interpersonal [$t_{(79)}$=1.239, p>.05] and bodily-kinesthetic [$t_{(79)}$=0.734, p>.05] intelligence area average scores in terms of the *grade level* variable. In another words, it can be said the grade level variable does not have an impact on the average score of the intelligence area of classroom teachers.

Pearson product moment correlation matrix between the average scores of classroom teachers' intelligence areas and average academic achievement of their students' in Turkish, mathematics, social studies, and science and technology lessons are offered in Table 6.

As clearly demonstrated by the findings in Table 6, there is no statistically meaningful dif-

Table 5: Independent sample t-test results of average scores of classroom teachers' intelligence areas in terms of class-level variable

Teachers' multiple intelligence areas	*Grade level*	*n*	*Average scores*	*ss*	*Leven's test*		*sd*	*t*	*p*
					f	*p*			
Verbal-Linguistic	4th	31	36.26	6.352	1.714	.194	79	1.990	.051
	5th	50	33.69	5.151					
Visual-Spatial	4th	31	36.00	6.818	6.986	.070	79	1.312	.193
	5th	50	34.23	5.127					
Naturalistic	4th	31	37.71	5.645	.260	.612	79	1.036	.303
	5th	50	36.36	6.124					
Musical	4th	31	30.38	10.078	4.682	.054	79	-.856	.395
	5th	50	32.10	7.789					
Logical-Mathematical	4th	31	40.62	6.136	.002	.963	79	.731	.467
	5th	50	39.64	5.887					
Intrapersonal	4th	31	34.86	6.558	1.868	.176	79	1.248	.216
	5th	50	33.18	5.433					
Interpersonal	4th	31	38.02	5.740	.176	.676	79	1.239	.219
	5th	50	36.33	6.539					
Bodily-Kinesthetic	4th	31	36.12	6.318	2.737	.102	79	.734	.465
	5th	50	35.18	5.078					

Table 6: Pearson product moment correlation matrix between the average scores of classroom teachers' intelligence areas and average academic achievement of their students' in Turkish, mathematics, social studies, science and technology lessons

Teachers' multiple intelligence areas	*Turkish*		*Mathematics*		*Social Studies*		*Science and Tech*	
	r	*p*	*r*	*p*	*r*	*p*	*r*	*p*
Verbal-Linguistic	-.100	.377	-.174	.121	-.197	.078	-.112	.320
Visual-Spatial	-.175	.118	-.233*	.036	-.187	.094	-.167	.136
Naturalistic	-.075	.503	-.080	.447	-.085	.452	-.023	.840
Musical	-.088	.435	-.207	.064	-.066	.558	-.081	.475
Logical-Math.	-.059	.598	-.044	.696	-.108	.336	-.007	.950
Intrapersonal	-.078	.486	-.133	.235	-.154	.170	-.088	.436
Interpersonal	.050	.656	-.012	.914	-.013	.907	.052	.646
Bodily-Kinesthetic	-.073	.518	-.204	.068	-.179	.111	-.164	.144

n=81, p<.05

ference between classroom teachers' verbal-linguistic [r= -.100, p>.05], visual-spatial [r= -.175, p>.05], nature [r= -.075, p>.05], musical [r= -.088, p>.05], logical-mathematical [r= -.059, p>.05], intrapersonal [r= -.078, p>.05], interpersonal [r=.050, p>.05] and bodily-kinesthetic [r= -.073, p>.05] average intelligence scores and students' Turkish class success average.

While there was no statistically significant difference between classroom teachers' verbal-linguistic[r= -.174, p>.05], nature[r= -.080, p>.05], musical[r= -.207, p>.05], logical-mathematical[r= -.044, p>.05], intrapersonal[r= -.133, p>.05], interpersonal[r= -.012, p>.05] and bodily-kinesthetic[r= -.204, p>.05] average intelligence scores and their students' average grades in mathematics, weak, negative and significant correlations were found between visual-spatial[r= -.233, $^{*}p$<.05] average intelligence scores and their students' average grades in mathematics.

By analyzing the results once again in Table 6, it is demonstrated that there was no statistically significant difference between classroom teachers' verbal-linguistic[r= -.197, p>.05], visual-spatial [r= -.187, p>.05], nature [r= -.085, p>.05], musical [r= -.066, p>.05], logical-mathematical [r= -.108, p>.05], intrapersonal[r= -.154, p>.05], interpersonal [r= -.013, p>.05] and bodily-kinesthetic [r= -.179, p>.05] average intelligence scores and their students' average social studies class grades.

A statistically significant difference was not detected between the classroom teachers' verbal-linguistic [r= -.112, p>.05], visual-spatial [r= -.167, p>.05], nature [r= -.023, p>.05], musical [r= -.081, p>.05], logical-mathematical [r= -.007, p>.05], intrapersonal [r= -.088, p>.05], interpersonal [r=.052, p>.05] and bodily-kinesthetic [r= -.164, p>.05] average intelligence points and their students' science and technology class success averages.

DISCUSSION

The "Multiple Intelligences Inventory" used in the study aims to help an individual establish a relationship between experiences he/she has in different intelligence areas. This evaluation, providing insight into intelligence areas, which individuals use in their lives and work lives, will make it easier for them to notice the intelligence areas that they need to improve (Genc 2012). According to a study made by Adcock (2014), teachers indicated at a rate of approximately seventy-five percent that the multiple intelligence theory helped them meet the individual needs of their students. They believed that the multiple intelligence theory was imperative in meeting the diversity of student needs and offered teachers a variety of instructional methods to use. From this viewpoint, it was detected that teachers had the highest scores in the logical-mathematical area and the lowest score in the musical area when the class teacher average multiple intelligence scores were reviewed. This finding of the study shows similarity to the findings of the study performed by Gungor (2005). Indeed, Gungor (2005) detected that the highest average score was in the logical-mathematical area and the lowest average score was in the musical area when ordering the teachers' average intelligence area scores.

Moreover, teachers' average scores in all intelligence areas were detected to be above average in the study. This result supports Armstrong's (2000) conclusion that every individual possesses all intelligence areas, although some individuals have high intellect in particular areas. According to Durmaz and Ozyildirim (2005), a traditional teacher in a traditional education system addresses verbal-linguistic areas more actively. However, the teacher needs to address other areas as well in order for students to acquire rich learning experiences. For instance, teachers should use every area at a certain level; they should address the interpersonal area with the bodily-kinesthetic area as they communicate with students, colleagues and parents of students; they should use bodily-kinesthetic area since they use body language during lectures; they should use the benefit of the visual-spatial during the use of tools and equipment and improving course materials; they should use the logical-mathematical area when being aware of scientific developments, informing students about them and seeking solutions to problems faced. It is a positive and a remarkable finding from this aspect that the classroom teachers who instruct more than one course demonstrate above-average scores in all intelligence areas. In a study performed by Adcock (2014), students realized that learning in the classroom typically occurs using the linguistic, mathematical-logical, naturalistic, and spatial intelligences, but it could be expanded through the use of the other four intelligences. They noted that, when the teacher uses all eight multiple intelligence ap-

proaches, all students learn better. Others stated that using all eight multiple intelligences also led to a variety of ways to assess students—another benefit for learners.

It was detected in the study that class teachers' average scores in verbal-linguistic, visual-spatial, naturalistic, musical, logical-mathematical, intrapersonal, interpersonal and bodily-kinesthetic intelligence areas did not show a statistically meaningful difference in terms of the gender and grade level variables. Similarly, it revealed that the gender of biology course teachers did not make any meaningful difference in determining their intelligence areas in research by Yucel et al. (2006). Contrarily, Serin (2008) detected in a study that while science course teachers' intelligence area scores differed in a statistically meaningful manner from the point of visual-spatial and interpersonal intelligence, scores did not differ from the point of other intelligence areas.

It emerged that there was no meaningful difference between class teachers' average scores in verbal-linguistic, visual-spatial, naturalistic, musical, logical-mathematical, intrapersonal, interpersonal and bodily-kinesthetic intelligence areas and their students' Turkish, social studies and science and technology course success averages. Additionally, while no statistically meaningful difference was detected between average scores in verbal-linguistic, naturalistic, musical, logical-mathematical, intrapersonal, interpersonal and bodily-kinesthetic intelligence areas and students' mathematics course success averages; it was discovered that there was a negative meaningful correlation at a low level between visual-spatial areas and mathematics course success averages. This finding is not significant. Since teachers who have high intellect on visual-spatial areas are more prone to populate the lecture by using tables, figures, materials and equipment in order to make the teaching process easier, this may help students who have difficulty in understanding an abstract course like mathematics. In this case, students who are given the opportunity to take benefit of tables, figures, materials and equipment, instead of abstract statements are expected to become more successful in the mathematics course.

CONCLUSION

Finally, it was detected that the class teachers have a certain level of intelligence in each area, with the highest level in the *Logical-Mathematical* area and the lowest level in the *Musical* area. Furthermore, there was no meaningful relationship between multiple intelligence areas of teachers and being teachers of 4th or 5th classes and their gender. Additionally, while no statistically meaningful difference was detected between class teachers' intelligence areas and students' Turkish, social studies and science and technology course success averages, it was found that there was a meaningful relationship between visual-spatial areas and mathematics course success averages.

RECOMMENDATIONS

The suggestions made in accordance with the results of the research include, Hands-on in-service training that should be provided to teachers. Teacher awareness of the dominant intelligence areas should be raised to conduct activities and teach lessons not just in the areas in which they are dominant. On the other hand, awareness of teachers who are not aware should be raised to identify in which area they are dominant and, accordingly, to include activities for different areas in the teaching process.

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