THE IMPACT OF PHYSICAL AND HEALTH EDUCATION LESSONS TO TRANSFORMING ANTROPOLOGICAL STATUS OF STUDENTS WITH INCLUSIVE NEEDS – CASE STUDY

Faris Rašidagić Source Scientific Paper

Abstract:
Inclusiveness means giving equal opportunities and maximum flexibility when complying specific educational and wider social needs of inclusive children. Inclusiveness is the approach based on the belief that every person has equal rights and opportunities and the accomplishment of those rights and needs has to be possible in physical/sport activities. In accordance to the above mentioned, the goal of this paper is to prove positive enforcement of physical and health education to transforming anthropological status of students with inclusive needs. Inclusiveness, besides school, should also be enforced in sports clubs, that is, outside the school. This type of work organization has not yet had a massive breakthrough. Study results of what other children think about inclusive process in physical and health education are mostly positive. It shows that this inclusive approach helps young minds develop their own personal values and makes them gain positive attitude towards people with special needs. Unlike the children, the experience with teachers who work in inclusive physical and health education is rather negative. The problem seems to be with insufficient training, which results in failure to incorporate inclusiveness. The obtained results show that with teacher's intercession, appropriate contents of physical and health education can be done. Transformation results are positive too. Teacher's attitudes should be changed with excessive training, which would result with successful inclusive process in physical and health education lessons. Parents' consent is obtained for the realization of this study and the author is obliged not to state full information about the students or school where the study was done.

Key words: High School, Limited Mental Capability, EURO FIT

Introduction

To gain teachers more positive attitude about inclusive lessons process, there should be more training during their education but also more practice when teaching children with special needs (Block, 1999). Inclusive processes can be, besides school (Rašidagić, Manić, Mahmutović, 2016) also realized outside, within the activities of sports clubs for example. This has been proved in a case study about „Karate Club Zrenjanin"'s work principles (Vojvodina, Central Banat Region), where positive example has been noted since the club has eight years long cooperation with organizations which include inclusive children in different creative activities (Rašidagić, 2017). Other studies in this domain show that girls have more positive opinion about inclusive process than boys (Loovis and Loovis, 1997) so male population should be more educated about this. Inclusiveness is about giving equal opportunities to everyone and maintaining maximum flexibility to satisfy other social needs of the children, in this case, realization of physical and health education classes (Lazor, Marković and Nikolić, 2008). In accordance with the above mentioned, the goal of this paper has been set to prove positive effect of physical and health education to transforming anthropological status of inclusive students. Whether we talk about regular or special schools, two goals can be achieved if special needs children are included in regular attendance of physical and health education classes – improvement of anthropological status but also social interaction of participants (Golubović, Š. Maksimović, Golubović, B. 2012). In this paper, transformational processes of anthropological status have been concretely analyzed – case study of a particular child whose inclusive need is defined as „limited mental capability". Classification of mental capability is determined according to Grgin (2004) where four states or levels of mental disfunction are stated along with the limited one, fifth level:

1. Mild Mental Retardation
2. Moderate Mental Retardation
3. Severe Mental Retardation
4. Profound Mental Retardation and
5. Limited Mental Retardation

The Examinee Sample

Case study sample was one inclusive needs boy attending high school for children with special needs in the area of Sarajevo Municipality. The student is diagnosed with limited mental retardation and mild emotional and social squalor. The student is 17 years old. The student did not participate in any organized sport activities besides physical and health education classes. Parent's consent is obtained for the realization of this study and the author is obliged not to state full information about the students or school where the study was done.

Variable Sample
Anthropometric Measurements:

1. Height
2. Weight
3. BMI (Body Mass Index).

EURO-FIT Battery:

1. Flamingo Balance test
2. Plate Tapping
3. Sit-and-Reach
4. Standing Broad Jump
5. Handgrip Test (is not realized due to material limitations)
6. Sit-Ups
7. Bent Arm Hang
8. 10 x 5 meter Shuttle Run

Test Description
EURO-FIT tests (Drljačić, Arsić, K. i Arsić, D. 2012.) were realized by the examinee who was wearing physical and health education outfit (t-shirt, sneakers, shorts). All the tests were done in the school gym. Non-gliding surface was provided for jumping and running tests. The order of doing the tests was organized in circular formation. Every work spot was numbered and described with guidelines of how to do the test. The examinee was given simple explanations about specific ways to do the test before the actual realization. The examinee was still between the tests and was not allowed to make a test try. The examinee was verbally positively encouraged while doing the tests. Initial and final testing was done in a completely same way with same measuring instruments. The overall number of attended physical and health education classes was 70. The student attended 60 classes during the year (he was absent due to minor health issues). The student was not included in sport club's activities outside school during the year. Subject teacher made lesson plans and schedule based on the results of initial testing.

Data Analysis
The concept of the research is „case study". One of the definitions of case study is „research about performance level" (Cohen, Manion & Morrison, 2011). The above-mentioned method gathers the information about target sample but the main goal is primary information or permanent learnings that give direction to research paper. The initial and final results are arrayed by the comparative method, according to which all the conclusions and references are analytically formulated.

Research Results
Research results are graphically presented from 1 to 3 as follows.

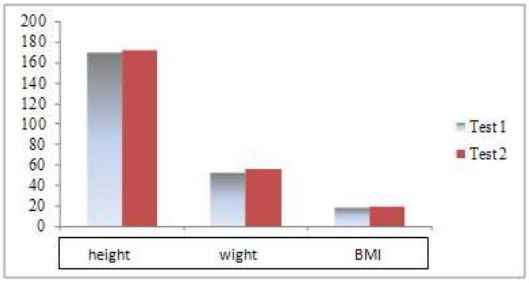
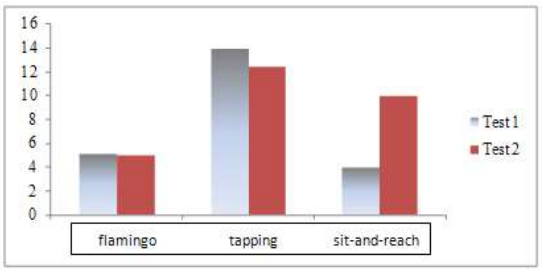


Chart 1. Differences between initial and final testing: height, weight and examinee's BMI

Regarding the student's height, at the beggining of the school year, he was 170,5 cm tall, while at the end of the year measured height increased to 172,5 cm. There is a positive difference of 4kg (52,2 kg / 56,1 kg) between initial and final measured body weight. The increase of height and weight reflected to vlaue changes of claculated BMI index - BMI=18 to BMI=19 .

Chart 2. Differences between initial and final



testing: Flamingo Balance test, Plate Tapping and Sit-and-Reach

Flamingo Balance Test results were negative. Final duration time of the test is 10 hundredths lower. Plate Tapping was done better than at the initial testing, 1 second and 56 hundredths. Sit-and-Reach test at the final measurement was increased for 6 cm.

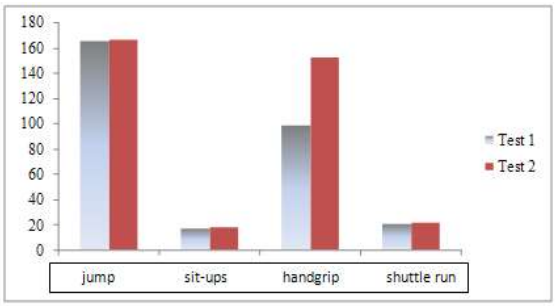


Chart 3. Differences between initial and final testing: Standing Broad Jump, Sit-Ups, Handgrip and 10 x 5 meter Shuttle Run

Standing Broad Jump has shown improvement in motoric capabilities – explosive strength of lower extremities. Initial measurement registered result of jump longitude is 166 cm and at the final measurement the result is 167 cm. The initial realization of Sit-Up test has recorded one repeat less when compared to final testing (initial – 18 repeats in 60 seconds / 17 repeats in 60 seconds). Handgrip test is usually done on the spindle. Due to lack of material and technical conditions (there was no spindle), the test was done on the loom. At the initial measurement, handgrip lasted 1 minute and 33 seconds. At the end of the school year and final testing, handgrip lasted 2 minutes and 33 seconds

and has significantly increased. 10 x 5 meter Shuttle Run, final results are lower than initial testing results. Initial time for test realization was 20:62 seconds and final time for test realization was 21:34 seconds.

Discussion

Noticing the student's height, you can say that in a period of one school year he has grown 2 cm. Taking in account that height is a morphological variable influenced by genetic factors (genetic factor inheritance: Y-haplotypeI-M170) student's height boost can be acknowledged as natural development. Scientific domain learnings show that height as a genetic factor is differently inherited in various regions (USA – 89% - other countries with poorer life conditions – lower than 89%). Nutrition style and physical activity can enhance height grow up to 10%. During the research, both mentioned factors are controlled (nutrition, physical activity) and it is assumed that such behavior can positively influence height grow.

Also, student's weight has transformed by growing for almost 4 kg between initial and final testing. After the values of height and weight have been connected by calculating BMI index (BMI=weight/height^2), level of initial „general anthropological status" is determined based on BMI=18 level. After that, it is safe to conclude that the examinee is at the point of denutrition. It is important to mention that BMI value graduation according to World Health Organization of United Nations (WHO UN established on 7th April 1948) has been used in this paper. Using the mentioned graduation, underweight value is BMI= 18,5 and overweight is BMI= 24,9. To suspend denutrition, student and his parents got instructions to arrange meals in few smaller portions and they also became familiar with daily nutrition values that are to be fed in the organism, how to calculate nutritive values in food and also that it is necessary for parents to regularly (after every meal) check and see if the student is consuming served food (Salapura, 2013). After final checkup, BMI value has increased to BMI=19 which is in accordance with height and weight improvement and confirms that having control over this segment of student's life has fulfilled its purpose.

Transformation of motoric abilities, after following the order of testing, has begun with the analysis of the Flamingo test which determines motoric ability to maintain balance (examinee's balance). This showed that final testing was slightly weaker, time difference was 10 hundredths. Such negative result does not show significant decrease, having in mind that value was lower for 0,01%. Recommendation for subject teacher: Have more content which enhances the above mentioned motoric capability in the lesson plans.

Hand tapping test is performed in a way to register the time in which a candidate executes 25 hand cycles (touching both boards represents one cycle). Time of the performance is shortened for 1 second and 56 hundredths or 11,16%. This result shows an advance compared to the initial testing.

The sit and reach test which determines flexibility of the examinee's body, has shown that the student has expressive low pain tolerance that occurs during body bending. This fact was stated after the student complained about strong back pain when he/she bends forward. Previously mentioned pain savor interfered with student's maximum capacity while undergoing the test. The achieved result was increased for 6 cm, that is improved for 40% at the final testing, and back pain was significantly decreased.

Standing Long Jump test has shown improvement of motoric skills – explosive strength of lower extremities. The result of the final measurement was +1 cm. The increasement of +0,5 cm can be considered as an advantage since the above mentioned motoric aptitude is greatly congenital. (H2=0,80; Čanaka, Šoš & Vučetić, 2005)

Sit-Up Test shows the strength of front part torso musculature and after the initial measurement, examinee did 17 repeats in 60 seconds. After the final testing he did 18 repeats in 60 seconds. The registered improvement is on the level of +5.5%.

Handgrip Test checks the static strength of upper extremities. Usually it is done on gym spindle. Due to lack of material and technical conditions (there was no spindle), the test was done on the loom. At the initial measurement, handgrip lasted 1 minute and 33 seconds. At the end of the school year and final testing, handgrip lasted 2 minutes and 33. Time expressed in percentage is longer for +85%.

10 x 5 meter Shuttle Run was the last to realize. The values of the test which show examinee's anaerobic stamina were weaker at the final then at the initial testing. Initial time of test realization was 20.62 sec, final registered time was 21.34 seconds (decreased for -3.37%). When the weaker result cause analysis was done, the examinee said his shoes were slippery and they were not properly tied. This explanation could not be entirely accepted since the test was done on non-slippery surface which is described in "Description" chapter. The main reason for failure on this test is the increase of examinee's height and weight.

Taking into account that gathered results for the majority of tests show positive difference between initial and final testing (Height, Weight, BMI Index, Movement Speed Frequency, Explosive Strength of Lower Extremities, Torso Strength, Upper Extremities Stamina), to conclude this research, we can say that the aimed goal was completed – positive influence of physical and health education to transforming anthropological status of inclusive students has been proved.

Conclusions

- Physical and health education lesson activities when adjusted to the needs of students with diagnosed limited mental capability and mild emotional and social squalor, can positively influence to anthropological status.

- Due to the fact this specific research was organized as case study and the given data was analyzed using descriptively-statistic and comparative work method, there was a certain limit to use these results. That is, the changes could only be determined by using comparative analytical methods of initial and final testing.
- Methods showing clearer and statistically significant differences between initial and final testing could not be used.
- This research should be organized and conducted on a larger number of examinees with similar or same cause characteristics, so the given results could be confirmed with more certainty.
- Organization of researches with same issues is recommended to other researchers, by using larger number of examinees or different examinee gender or different inclusive needs of examinee.

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RELATIONS OF ANTROPHOLOGICAL STATUS AND RESULTS OF STATIONARY MOTORIC TESTS IN PHYSICAL EDUCATION LESSONS

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Abstract:
Research of influences and connection of different anthropological status of students is a continuous process. It is necessary to initially determine as many data as possible in order to enable the teachers to follow the development of their students. It is a good idea to determine initial motoric knowledge of students besides data that defines morphological and motoric status. According to given data, one can make a range of characteristics, capabilities and knowledge of students and compare them to data of similar or same age population.During the lessons, simple EUROFIT tests are used to gather data about motoric capabilities. Motoric knowledge is verified with situational-motoric tests and morphological status is determined by measuring height, weight and fat tissue on five different anthropological places. The goal of this research was to determine if there are correlational and cross correlational relations between different dimensions of anthropological status and results of situational motoric tests used in physical education lessons. Pearson's method of correlation and cross correlation measured the dependence of applied tests and anthropological space. Examinee sample is 85 students of first and second grade in high school. Teacher's knowledge of given parameters can enable individual approach to students as one of the steps to humanize physical education lessons.

Key words: *Correlation, Pearson, EUROFIT, Morphology, Motoric*

INTRODUCTION

To make transformational effects of physical education lessons more effective, educators need to apply the newest data to plan their lessons. The connection of morphological characteristics with motoric capabilities and situational motoric knowledge is subject for a great number of researches (Krezić, 2002. Jašarević, 2006.). In the previously done research, there were significant connections of the entire anthropological status and it was confirmed that high level of motoric capabilities enables efficient realization of motoric exercises during physical education lessons. Besides motoric capabilities, body structure also has impact on different lesson units (Rašidagić, Manić, Vidović, 2011). Due to abovementioned reasons and continuous changes of investigated relations and correlations, research of anthropological spaces always has big appropriate impact (human population continually changes and develops). Positive or negative changes and their level can only be verified with continuous research. On classes, verification begins with determining initial status according to which one can decide about goal and choice of the most efficient means of transformation. One part of the data is gathered with EUROFIT test battery (Drljačić, Arsić, K. and Arsić D. 2012), second part is done by measuring certain morphological dimensions (Šoše & Rađo, 1998.), and third part is done with motoric and situational-motoric tests used in Bosnian schools described by Mikić (1999) amongst others.

Certain authors (Naumovski, 1984) have an opinion that physical education teachers must in certain extent apply scientific knowledge about increasing lesson effects. Lessons of 45 minutes two times a week are not sufficient and motoric active time has to be organized as efficiently as possible. Also, several authors „suggest "common work interaction of teachers, students, parents and school to enable best possible effects to increase physical capability and improve children's health (Adam et al. 1988, Strel, 1997 and Starc and Strel, 2012) Only then the lessons, even though short (45 min.) can have positive transformation of anthropological status.We can also add to this statement a research from group of Greek authors (Christodoulos, Flouris, Tokmakidis, 2006) who determined that there is a development during the school year but not during the holidays. Conclusion is that 30 minutes of everyday physical activity can decrease gaining weight and hyperkinesia. Newer research done by World Health Organization (WHO) show that this type of activity should be extended to 60 minutes a day. The aim of this research was to determine whether there are correlational and cross correlational between different dimensions of anthropological status and results of motoric tests on physical education lessons. Given

data should help educators and physical education teachers to acknowledge internal relations of different spaces after doing the tests and measurements (Momirović, 1989 and Rašidagić, 2002). Also, they should more efficiently use the data when planning even though there are only two classes per week.

METHODS

The Simple examinees

Examinee sample are high school male students between 16 and 17 years old. Total number of examinees – 85 students.

The Simple variables

Gathered data is filled according to student's personal file. Given the fact there was great number of information in the file, number of used variables was reduced. Variables used to determine morphological characteristics were gathered in a way described by Šoše & Rađo (1998).

1.Variables to Determine Morphological Characteristics:

1.1. AVISTL (AVISTL),
1.2. Weight (ATEZTJ),
1.3. Skin Wrinkles (ANATRI),
1.4. Biceps Skin Wrinkle (ANABIC),
1.5. Subscapularis Skin Wrinkle (ANALED),
1.6. Subsprailiake Skin Wrinkle (ANATRB),
1.7. Calf Skin Wrinkle (ANAPOT).
EUROFIT battery test variables were used to determine basic motoric capabilities. These tests are used to determine motoric status of primary and high school students and that is why they were used here as well. Gathering of the variables to determine motoric capabilities was done in a way described in guidelines published by Council of Europe in 1983 (http:// www. bitworks - engineering. co. uk / linked / eurofit % 20 provisional % 20 handbook % 20 leger % 20beep % 20test % 201983. pdf, opened 5th April 2018).

2. Variables to Determine Motoric Capabilities:

2.1. Flamingo Test (MRFLAM),

2.2. Movement Frequency Speed/ Hand Tapping (MBFTAP),

2.3. Flexibility/Sit-and-Reach (MFLPRK),
2.4. Explosive Strength/Standing Broad Jump (MESDM),
2.5. Static Strength/Hand Grip (MSSAK),
2.6. Torso Strength/Sit-Ups (MRLS),
2.7. Functional Strength/Bent Arm Hang (MSAVIS),
2.8. Running Speed and Agility/Running 10x5m (SATL10×5).
Variable sample to determine specific movement structures in sports games demanded appliance of tests which revealed knowledge about basic technique elements. Data gathering was done according to Mikić (1999).

3. Variables to Determine Situational – Motoric Capabilities:

3.1. Basketball

3.1.1. Throwing the Ball Against the Wall (OKBLRZ),
3.1.2. Slalom Ball Lead (OKVLS),
3.1.3. Kos3. Throwing the Ball into the Basket (OKBLK),
3.2. Volleyball
3.2.1. Hitting the Wall with the Ball (OOOLZ),
3.2.2. Circle Ball Rebound (OOCK),
3.2.3. Service, (OOSR),
3.3. Handball
3.3.1. Throwing the Ball Against the Wall (ORBLZ),
3.3.2. Sevenoaks (ORIS),
3.3.3. Slalom Ball Lead (ORVLS).

Statistical analysis

Program STATISTICA 12 was used during the research for data analysis. Testing of significance was done by applying correlation coefficient and inter correlation according to Pearson with level of significance set to (P<,05). While interpreting coefficient values one should use the rules:

- R from (0.25) to (0.50) or from (-0.25) to (-0.50) – low connection between variables
- R from (0.50) to (0.75) or from (-0.50) to (-0.75) medium to good connection between variables
- R from (0.75) to (1) or from (-0.75) to (-1) very good to excellent connection between variabl

RESULTS

According to testing schedule, inter correlation data of morphological characteristics were analysed.

Table 1: Results of Inter Correlation of Morphological Characteristics

ATEZTJ/ AVISTL	ANATRI/ ATEZTJ	ANALED/ ATEZTJ	ANATRB/ ATEZTJ	ANALED/ ANATRI	ANATRB/ ANATRI	ANATRB/ ANALED
.63	.60	.71	.64	.79	.82	.85

Table 2: Results of Inter Correlation in Motoric Space

MFLPRK / MRFLAM	MSSAK / MESDM	SATL10×5/ MRFLAM	SATL10×5/ MFLPRK	SATL10×5/ MSSAK	SATL10×5/ MRLS
.69	.25	.26	.25	.28	.34

Table 3: Results of Inter Correlation in Situational – Motoric Tests

OKBLRZ/ OKVLS	OKBLRZ/ OKBLK	OKBLRZ OOCK	OKBLRZ OOSR	OOCK OKBLK	ORBLZ OKVLS
-.39	.28	.29	.25	.25	-.25
ORIS OKVLS -.25	ORVLS OKVLS .70	ORVLS OKBLK -.25	ORVLS OOCK -.25	ORVLS ORBLZ -.25	/

Table 4: Results of cross correlation motoric/situational-motoric space

Dalj/ OKBLRZ	Sti.sake/ OKBLRZ	Sti.sake/ Kos2	Sti.sake/ OOCK	Izdr.zgi/ ORBLZ	Taping ORVLS
.38	.77	.33	.31	.30	.30

Weight of students is on correlational level (.63). Weight is in correlation with fat tissueANATRI (.60), ANALED (.71) and ANATRB (.64). Fat tissue correlates in internal relations: PMT ANATRI with PMT ANALED (.79), PMT ANATRI with PMT ANATRB - suprailiake (.82) and PMT ANALED with PMT ANATRB with (.85). After determined correlational values for morphological space, correlation in motoric space is introduced (Table 1).

Less significant correlations were determined here. The highest value of correlation was shown in Flamingo test and student flexibility (,69). Other significant values are mostly of low connectivity (Table 2).

Highest correlation for situational - motoric tests was noticed between ORVLS and OKVLS tests, basketball and volleyball slalom ball lead (.70). Other inter correlational values within variables of basketball have significant connection. Basketball game test OKVLS – slalom ball lead correlates significantly with all situational – motoric tests of volleyball and handball (Table 3). ORBLZ – handball throwing the ball against the wall and handball test ORVLS – slalom ball lead is connected on lower level as well as test

circle ball rebound with handball slalom ball lead (.25).

There was no detected significance in the cross correlational space and relations between morphological measuring and motoric capabilities as well as situational – motoric capabilities. Due to that, results are not presented in this table.

Cross correlation between motoric capabilities and situational-motoric space has shown higher number of significant relations. The highest cross correlation has been noticed between hand grip and OKBLRZ basketball throwing with both hands against the wall (.77). Hand grip is also related to OKVLS test – basketball slalom ball lead with negative sign (.33) and positive with OOCK – volleyball circle ball rebound (.31). Explosive strength of lower extremities is on level (.38) on cross correlation with OKBLRZ test – throwing the ball with both hands against the wall and movement speed frequency is in cross correlation with situational motoric test ORVLS – slalom ball lead (.30). The same cross correlation coefficient (0.30) also connects throwing the ball against the wall with bent arm hang (functional strength of upper extremities). Other significant noted cross correlational connections are in the zone of lower relations and were not presented in this chapter (Table 4 only presents coefficients with .30 significances and higher).

DISCUSSION

Results of analysis in most of the researched spaces show lower number of significant correlation connections. Correlations of weight and fat tissue are positive. More wrinkles on fat tissue are direct indicators of bigger student weight so this positive correlation is not a surprise. It can be stated that fat tissue of subkapularis, suprailike and triceps have most correlations while fat tissue of biceps and lower leg are not. Given the indicators, controlled measures for fat tissue could be reduced only for these 3 items in lesson process. This approach would reduce time for data collection in lesson process which was stated in one research by Bala, Popović and Stupar (2002). According to results of other researches, one can conclude that there is a negative connotation in almost all age groups between weight, fat tissue and results of motoric tests.It is expected that students with given characteristics achieve lower results in motoric tests (Bala, 1996; Kalac and Gotarev, 2015, Deforche et All 2003) and lessons. Teachers should take this in consideration while planning their lessons. Inter correlation between motoric space has shown less significant connections. Data can imply the precision of used tests and confirm quality of EUROFIT battery tests (Adam et All, 1998). The highest value of correlation was between balance and student flexibility so this can mean that keeping the balance requires moving parts of the body that maintain that position. Inter correlation in situational-motoric space has shown higher number of significant connections, which was expected, given the fact that realization of motoric tasks requires interaction of motoric capabilities. The highest connectivity is noticed between tests ORVLS and OKVLS (handball and volleyball slalom ball lead). It is necessary to have appropriate „agility "to do this test that enables more developed motoric capabilities (Rašidagić, 2001; Bajrić et All, 2014). Cross correlation of morphological-motoric space and cross correlation of morphological measures with situational – motoric capabilities do not have statistical significance. Absence of inter reaction between these two spaces should be additionally investigated applying more complicated statistical methods because conclusions of this research are opposite to conclusions of other researches (Bajrić et All, 2014; Horvat, 2010, Kondrič et All, 2002; Lopes et All, 2012). Cross correlations between motoric capabilities and situational – motoric space have shown higher number of significant relations. The highest cross correlation coefficient is between hand grip and OKBLRZ test – basketball throwing with both hands against the wall so the conclusion is that good realization of given test depends on hand grip strength.Hand grip strength is negatively connected with OKVLS slalom ball lead, that is, lower value of hand grip strength has positive effect on realization of this test (Rašidagić, Rađo & Vidović, 2011). Harder hand grip also positively effects circle ball rebound. Explosive strength of lower extremities was very important for realization of throwing the ball against the wall test (OKBLRZ). Given the fact that ball needs to be thrown very hard against the wall so it can rebound faster, this connection is logical. Hand movement frequency speed is in cross correlation with ORVLS – slalom ball lead. It is assumed that the ball (handball size of ball is small) needs to be bounced on the floor many times to keep it under control (Rašidagić, 2011). Other significant cross correlation coefficients are in the zone of low connectivity. After the analysis of given data, one can conclude that aim of this research was to determine if there are correlations and cross correlations between different dimensions of anthropological status andresults of situational motoric tests realized in physical education lessons. The conclusion is this was partially succeeded because cross correlations between morphological measures and motoric capabilities, nor cross correlations between morphological measures and situational – motoric capabilities were not registered.

So, initial testing does not necessarily help physical education teachers to completely understand relations of different spaces after process of testing and measuring and plan their lesson units.

CONCLUSIONS

According to data given by initial testing and measuring of morphological, motoric and situational – motoric status of students, it was not possible to fully state the most efficient lesson contents.

To understand morphological and motoric status more fully, statistical methods to analyse such data should be more complicated besides using correlations and cross correlations.

Results of this research should be compared to results of similar researches using the data of different age or sex categories of students. This would give more complete insight in anthropological and situational – motoric space. In this way, teachers could plan physical education lessons more efficiently and increase positive transformational effects within the frame of number of lessons estimated for physical education.

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