International Journal of Sport Culture and Science
December 2020 : 8(4)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS.2020.613

Comparison of Certain Physical and Motor Skills of The Students Enrolled at Sports High Schools and Other High Schools: A Case Study in Trabzon Province

Ubeyde KILIÇASLAN[1], Arslan KALKAVAN[2]
[1] Trabzon Üniversitesi, Trabzon, Türkiye
https://orcid.org/0000-0002-6489-7641
[2] Recep Tayyip Erdoğan Üniversitesi, Rize, Türkiye
https://orcid.org/0000-0001-9439-4976
Email: ubeydekilicaslan@gmail.com, akalkavan@gmail.com

Type: Review Article (Received: 20.09.2020 - Accepted: 15.11.2020)

Abstract

The purpose of the present study is to compare certain motor skills of the students enrolled at sports high schools and other high schools, with a view to revealing any differentiation between the groups. The research group is composed of 129 senior-year students who were enrolled at Trabzon Sports High School, Trabzon Science High School, Trabzon Fatih Sultan Mehmet Anatolian High School and Akçaabat Multi-Program Anatolian High School. The data gathering tool employed to establish the motor skill levels of the students was the "personal info sheet", applying hand reaction, elasticity (sitting-laying), standing long jump (horizontal leap), push-up, crunch, balance, 20 m sprint and endurance (yo-yo test) motor tests. The tests revealed that the motor skills of sports high school students had been superior to those of the students of other high schools. It is possible to argue, however, that the difference may be due to the fact that athletes comprise the student body of sports high schools, rather than the training itself provided at the school.

Keywords: Sports**,** Sports high school, Motor tests

Introduction

Physical in addition to mental training of the student is vital for the realization of objectives of education in line with the contemporary understanding of education (Güneş, 2003). It is well known that bodily, spiritually and mentally healthy individuals are required in terms of quality manpower. Such a healthy framework can be achieved through physical education and sports training covering multiple aspects and principles of exercises which comprise the fundamentals of physical education and sports (Yalçıner, 1992). The fundamental purpose of physical education and sports at schools is to help every student achieve the highest level activity capabilities, by facilitating their development and reinforcing their existing abilities through physical activities, or exercises. Moreover, the physical education classes contribute to the development of one's self confidence regarding her motor skills, through improvement in basic moves such as running, climbing, maintaining balance, jumping, and somersault. In this context the physical education classes will contribute to the mental and psychological harmony as well, thanks to a positive impact on the development of nerve-muscle systems, and the coordination and control of the individual's body effected through changes in behaviors concerning movement (Tamer, 1987). Motor development refers to the process of developing, peaking out, and losing motor skills. Growth, maturation, readiness and learning play major roles in this process. Motor development emerges through changes in the behaviors concerning movement (Kalkavan, 1996). Fundamental motor skills develop through a completely natural process of change, even if the individual never engages in training. When developing a given motor skill, other motor skills would also be affected indirectly. Such an impact can be for the positive or the negative (Ziyagil, Tamer and Zorba, 1994). The fundamental structure of motor skills is reviewed under 5 major chapters, with reference to the importance of each skill set. Among these, strength, endurance and speed comprise the major skills while mobility and ability are complementary ones (Gürbüzoğulları, 2009).

Turkish education system entails a number of high school types, including not only science high schools, Anatolian high schools, and vocational high schools, but also sports high schools enrollment to which is based on competence tests. These schools stand out due to the form of the exam (MEB, 2009). The admission process of sports high schools is based on the result of the competence tests comprising 70% of the overall admission score, and secondary education placement exam results comprising 30% of the overall score, adding up to 100 (hundred) maximum points. Furthermore, students who score less than 50 (fifty) in the competence test are disqualified from further consideration. Primary admission lists and back-up admission lists, both containing the number of candidates equal to the quota assigned to each department, with reference to the ranking from the highest score to the lowest one, are announced at the schools, as well as on their web sites (MEB, 2014). The purpose of sports high schools is to raise model individuals who work in cooperation and who have the feeling of solidarity instilled in, who are capable of embracing team spirit, the discipline of sports, and gentlemanly conduct, by supporting their development (MEB, 2014).

In Turkey, the number of students who seek higher education enrollment grows each year. Students of both sports high schools and other types of high schools, who fail to secure admission to universities through centralized university entrance examinations, apply, in turn, to departments which extend admission through competence tests (Kalkavan and Kerkez, 1996). That is why a serious attitude towards the application of competence tests, and continuous revision of the process with a view to choosing optimal individuals for each occupation are crucial in terms of making utmost use of the human potential of our country, and enabling the individual to be happy (Öztürk, 2008). The admission of students in line with the founding philosophy of sports high schools is crucial in terms of the investigation of the

motor skills instilled in the students through sufficient and required education. The literature is not poor in studies on sports high schools (Çoban, 2006; Karapınar, 2007; Canal, 2008; Görmez, 2009; Altındaş, 2009; Güllü, 2009) and studies analyzing motor skills (Pang and Fong, 2009; Bilgili, 2009; Aydın, 2009; Karagöz, 2009; Aygül, 2010; Demiral, 2010; Livonen, 2011; Baran, 2012; Altınkök, 2012; Avşar, 2014; Selçuk,2014; Çoban, 2014); yet no study to compare the motor skills of sports high school students and the students of other high school types was found.

The present study, in turn, intends to compare certain motor skills of the students enrolled at sports high schools and other high schools in Trabzon province, with a view to revealing any differentiation between the groups.

Material and Method

Study Model: The study employs the relational screening model with a view to uncovering the existing state of affairs. The relational screening models are essentially research models which aim to establish the existence or extent of change between two or more variables (Karasar, 2013).

Research Group: The research group is composed of 129 (100%) senior-year students who were enrolled at Trabzon Sports High School (27%), Trabzon Science High School (27%), Trabzon Fatih Sultan Mehmet Anatolian High School (23%) and Akçaabat Multi-Program Anatolian High School (23%), in the academic year 2014-2015. 45 of the students were girls (34.9%), and 84 were boys (65.1%).

Data Gathering Tools: The data gathering tool employed to establish the motor skill levels of the students was the "personal info sheet", applying hand reaction, flexibility (sitting-laying), standing long jump (horizontal leap), push-up, crunch, balance, 20 m sprint and endurance (yo-yo test) motor tests. The data gathering tools are described below in detail.

Personal Info Sheet: The personal info sheet was developed by the researcher. The form contains questions asking the name and surname, gender, age, and school of the students included in the research group.

Hand Reaction Test: The students' data were obtained through the application of Nelson Hand Reaction Test, a simple and inexpensive assessment tool. During the Nelson hand reaction test, the students were seated on a chair, with their forearm and hand on the table. Then the hand of each student was placed with the tips of the thumb and the index finger extending 8-10 cm beyond the table, with the top sections of the thumb and the index finger laying in parallel. The researcher then kept the ruler between the thumb and index finger of the student. The student was then asked to look directly at the middle of the ruler, and to catch the ruler

using her thumb and index finger as soon as the researcher dropped the ruler. The ruler was dropped by the researcher and the ruler's position at the top side of the thumb at the moment of catching the ruler was noted.

Elasticity (Stretch Out - Reach) Test: The students were asked to sit on the ground with their legs extended, leaning the naked soles of their feet on an elasticity stand, leaning inside it from their waist up, pushing their hands as far forward as possible in front of their body, sliding the horizontally placed ruler on the stand as much as possible. The centimeter figure read on the elasticity stand was then registered as the elasticity score of the student. Special

attention was placed to prevent students from buckling their knees. Each student was granted 3 attempts to extend forward as per the rules, and the highest figure achieved was registered.

Standing Long Jump (Horizontal Leap) Test: The students leapt forward one after another from the market position, swinging in a semi-squat position. Then, the distance between the marked position they leapt from, and the heel of the foot that was behind was measured. Each student took the leap 3 times, with the highest score in centimeters getting registered. The crucial issues to take into account in this test were to have a maximum distance between the feet of each student equal to the width of their shoulders, and to prevent them from taking a further step once landed after the leap.

Push-ups: The students were asked to lay down on their face, place their hands right below their shoulders, keeping their fingers and legs stretched. They laid down in parallel to each other with small distances between each student. The students then pushed their bodies up by straightening their arms while keeping their knees and tips of their feet on the ground, and keeping their backs and hips straight. Then, the students lowered their bodies to the ground till they touched to the floor, by buckling their arms at their elbows. Once the body touched the floor, the students once again straightened their arms and lifted their bodies to assume the previous position once again. These moves amounted to a complete push-up. Once each student was made to try the move once, the test had commenced with the command "Ready? Move!", and stopped with the command "Stop" by the end of 30 seconds. The number of push-ups each student could take in 30 seconds was registered in the form.

Crunches: The student lies down on her back, joining her hands at the back of her neck, pulls her knees slightly towards her tummy (with a 90 degrees angle at the knees), with the soles lying completely on the mat. As the students move up, elbows would be brought forward, to touch the knees by the end of the move. Throughout the whole move, hands were kept joined at the back of the neck. Upon the "Ready... Move" command, the students were asked to repeat the move as quickly as possible through a period of 30 seconds. They were asked to continue with the move till the "Stop" command. The number of crunches effected at the end of a period of 30 seconds were recorded.

Balance Test: A strong wooden traverse with a length, height and width of 50 cm, 4 cm, and 3 cm respectively was procured for this test. In order to prevent this traverse from moving, it was placed on two legs, each with a length of 15 cm and width of 2 cm. The athlete was asked to maintain her balance on the traverse on the feet of her choice, without receiving any support, while bending the other leg back, holding it with the hand of the same side, behind the back of the athlete, all the while trying to maintain balance. The period through which she was able to maintain the balance was recorded with the help of a stop watch. The students were given 3 chances, with the best result getting registered.

20 m Sprint Test: A 20 m long flat surface was arranged for the sprint test. The participant assumed the standing starting position, and, upon hearing the "Ready? Move!" command of the test supervisor also standing at the starting position, ran through a straight line towards the end position, in the fastest pace available. The other test supervisor standing at the end position recorded the sprint time between the starting and end positions in seconds, using a Catiga hand chronometer. The participants were granted a 2 minutes rest after each sprint, and were asked to complete a total of 3 sprints, with the best result being registered.

Endurance (Yo-Yo) Test: In this test the students were placed at the starting position of 20 m tracks positioned next to each other on a flat and smooth surface, in a way precluding contact

with each other. Then, a tape prepared specifically for this test, increasing the running pace 0.5 km/s each passing minute was ran, starting with the "beep" tone signifying the start of the test. The participants then commenced the run, at a slow pace initially. The participants were allowed to resume the test even if they missed one beat, provided that they catch up with the rhythm with the next one. The test was concluded in case the participants failed to reach the 20 m lines in 2 consecutive laps. The time the students gave up with the test is assumed to be the test result. The test was applied regularly and the longest track the athletes were able to cover was registered as their score in the test.

Data Gathering: The tests at each school were applied on different dates.. The students to be included in the study were chosen on the basis of volunteering. First of all, the data form required to record the results was printed in a number in excess of the total student count, and then the students were asked to fill their forms. Later on, the students were asked to have warm-up exercises before the actual test. Then the students were subjected to hand reaction, flexibility, standing long jump, balance, push-up, crunch, 20 m sprint and 20 m endurance (Yo-Yo Test) testing in the said order. The tests were completed within approximately 3 hours to conclude the assessment. The same procedure was repeated in other schools as well. The data thus gathered was saved in the computer environment, followed by the application of relevant analyses.

Data Analysis: The arrangement of the data and the drawing of the graphs was performed using MS Excel for Windows (Office 2013), whereas statistics analyses were effected using SPSS for Windows (ver. 21). Finally the article was authored using MS Word for Windows (Office 2013). The data gathered through the analysis were first subjected to Saphiro Wilks normality tests. Data exhibiting a normal distribution were subjected to independent sample t-test for two distinct groups, with a significance level of $\alpha = 0.05$, whereas the data which did not present a normal distribution were subjected to Mann Whitney U test, an equivalent non-parametric test.

Findings

Reaction Levels: The test results revealed a significant level of difference between the hand reaction test scores of sports high school students and students of other high schools ($t_{0.05}$, -3.968; $p<0.05$). The scores sports high school students received in the hand reaction tests (2.24±1.62cm) were found to be significantly lower than the hand reaction test results of students enrolled in other high schools (3.43±2.01cm) (Figure 1).

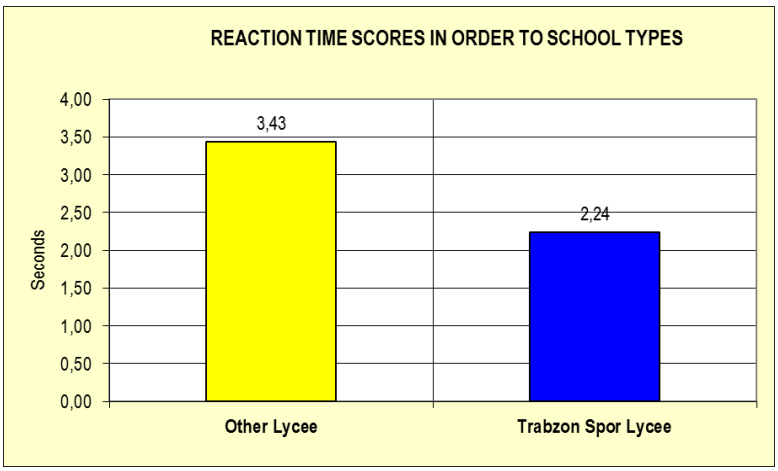

Table 1. Results of The Hand Reaction Tests

Push-up Counts: The test results revealed a significant level of difference between the push-up test scores of sports high school students and students of other high schools ($t_{0.05}$, -3.522; $p<0.05$). The sports high school students were observed to have push-up counts (24.59±11.02) significantly higher than those of other high school students (16.72±10.01) (Figure 2).

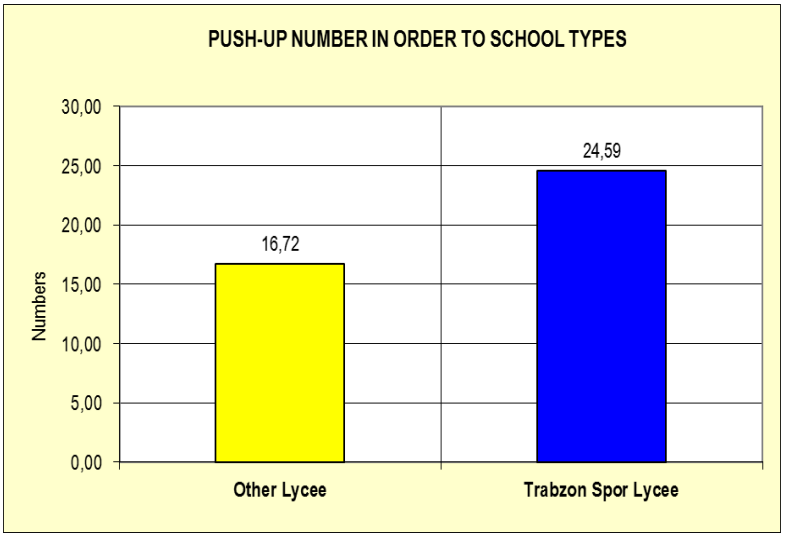

Table 2. Results of The Push-Up Tests

Shuttle-Draw: The test results revealed a significant level of difference between the crunch test scores of sports high school students and students of other high schools ($t_{0.05}$, -8.926; $p<0.05$). The sports high school students were observed to have crunch counts (29.59±4.58) significantly higher than those of other high school students (19.84±5.74) (Figure 3).

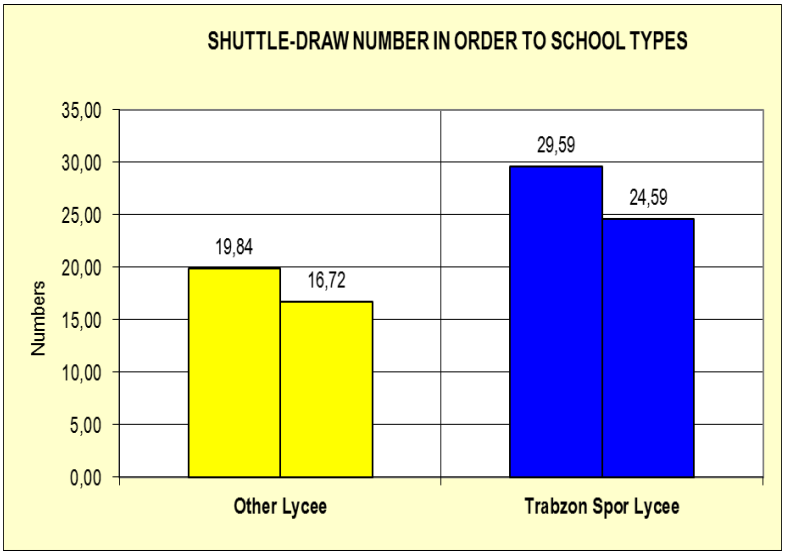

Table 3. Shuttle-Draw Results

Flexibility Levels: The test results revealed a significant level of difference between the flexibility levels of sports high school students and students of other high schools ($t_{0.05}$, -6.183; $p<0.05$). The sports high school students were observed to have flexibility levels (17.12±6.77) significantly higher than those of other high school students (8.59±7.27) (Figure 4).

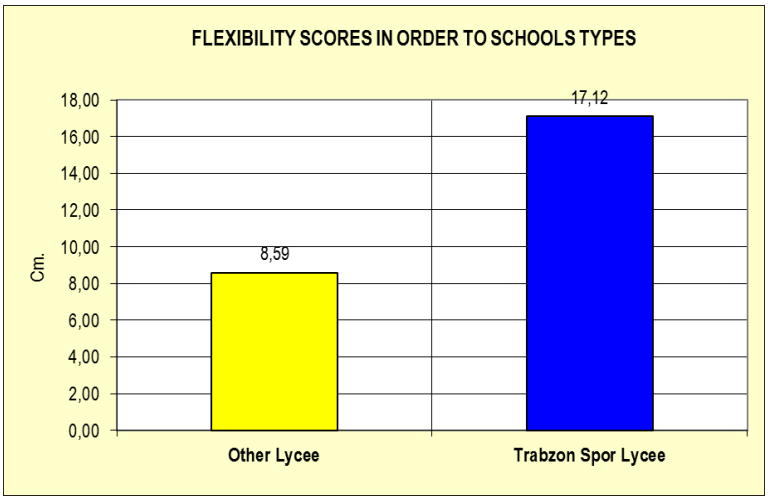

Table 4. Results of The Flexibility Level Tests

Balance Levels: The test results did not reveal a significant level of difference between the balance test scores of sports high school students and students of other high schools ($t_{0.05}$, -1.345; $p>0.05$). While sports high school students scored 35.06±36.53 seconds in the balance tests, the students of other high schools scored flexibility levels in the range 24.63±25.89 seconds (Figure 5).

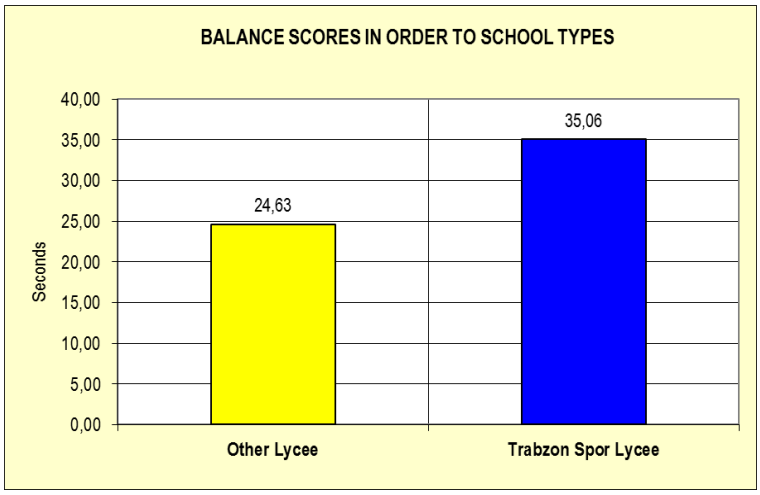

Table 5. Results Concerning The Balance Levels

Standing Long Jump Scores: The test results revealed a significant level of difference between the standing long jump test scores of sports high school students and students of other high

schools ($t_{0.05}$, -5.165; $p<0.05$). The sports high school students were observed to score significantly higher (204.71±24.77) in the standing long jump test compared to other high school students (168.85±33.92) (Figure 6).

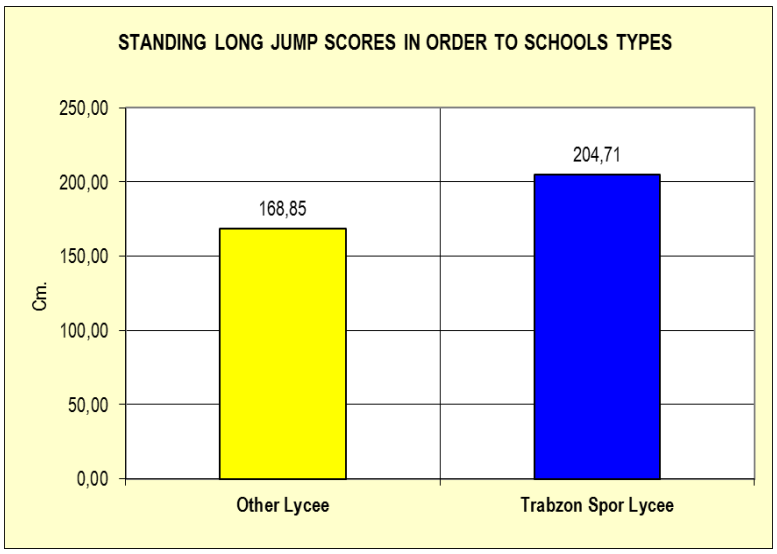

Table 6. Results of The Standing Long Jump Test

20m Sprint Results: The test results revealed a significant level of difference between the 20m sprint results of sports high school students and students of other high schools ($t_{0.05}$, -4.727; $p<0.05$). The sports high school students were observed to score significantly higher (3.48±0.51cm) in the 20m sprint test compared to other high school students (3.93±0.51cm) (Figure 7).

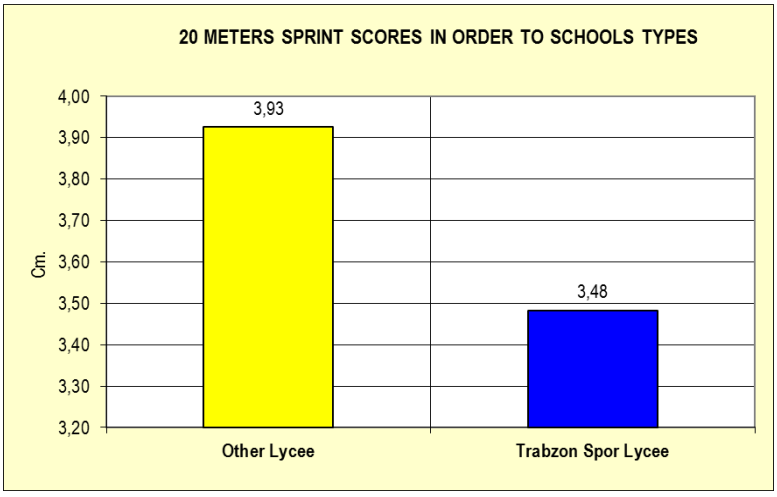

Table 7. Results of The 20m Sprint Tests

Endurance Levels: The test results revealed a significant level of difference between the endurance levels of sports high school students and students of other high schools ($t_{0.05}$, -4.954; $p<0.05$). The sports high school students were observed to score significantly higher (807.06±457.92m) in the endurance test compared to other high school students (402.11±196.01m) (Figure 8).

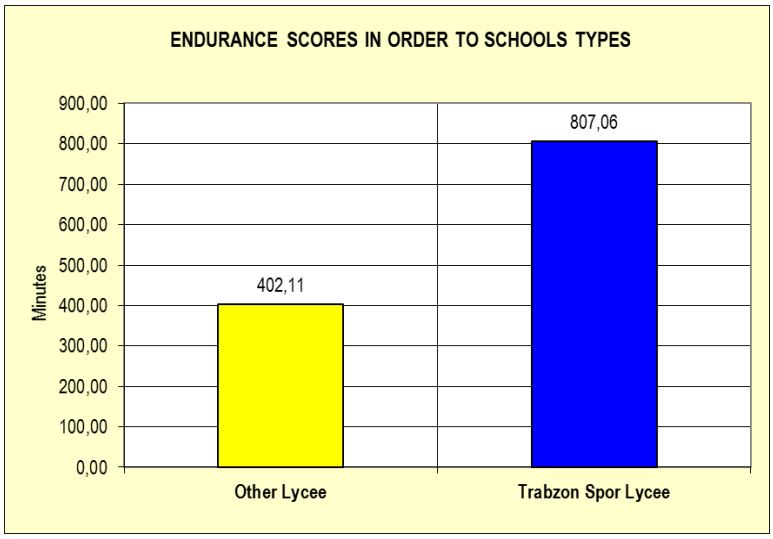

Table 8. Results of The Endurance Tests

Conclusion and Suggestions

The study found that on average sports high school students had significantly lower hand reaction times (2.24±1.62cm) compared to those of other high school students (3.43±2.01cm). The hand reaction test results of sports high school students and the students of other high schools revealed a significant difference ($t_{0.05}$, -3.968; $p<0.05$). Güçlüöver (2012) found, in a comparison of simple reaction times of elite and amateur men's teams, that elite athletes had better reaction times (02±0.04sec) compared to amateur athletes (03±0.01sec). Çolakoğlu, Selamoğlu, Gündüz, Acarbay and Çolakoğlu (1993) found that extended periods of physical trainings can lead to reduction in reaction times. Furthermore, higher levels of regular training compared to the training levels of the students of other high schools, is arguably among the reasons why sports high school students exhibit better physical, physiological and motor skills.

The average scores in the push-up test also present a picture where sports high school students achieved higher (24.59±11.02) than the students of other high schools (16.72±10.01). The results reveal a significant level of difference between the push-up test scores of sports high school students and students of other high schools ($p<0.05$). Kürkçü's (1996) study titled “The comparison of physical and physiological characteristics of 13-18 years old secondary education students who exercise and who do not" found that 13-14 years old students in the experiment group achieved an average of 36.45±5.41 in the push-up test, while the control group averaged only 16.07±4.29. In the 15-16 age group experiment group scored an average of 40.18±2.40 in the push-up test, while the control group did only 20.70±4.77.Finally, in the 17-18 age group experiment group scored an average of 37.27±5.33 in the push-up test, while the control group scored 19.83±6.86. The results reveal a significant difference between the push-up scores of the experiment group and the control group which does not exercise ($p<0.01$). The results, thus, concur with our own findings. The high level of exercise sports high school students had, as well as extended periods of strength trainings they had in

exercises and sports courses, compared to those of other high school students, have arguably, played a role in these results.

On average sports high school students had significantly higher scores in the crunch test (29.59±4.58) compared to those of other high school students (19.84±5.74). The test results of sports high school students and the students of other high schools revealed a significant difference ($p<0.05$). Pense and Serpek's (2010) study titled "The application of eurofit test battery to determine the physiological and biomotor characteristics of basketball playing girls in the 14-16 age group" found that basketball playing girls had an average crunch count of 20.00±0.53 while those who did not play basketball averaged 15.61±0.79. Even though that study was applied exclusively with girls, the trends revealed support the results we reached in our own study. Another notable study in this context was performed by Zorba, Ziyagil, Çolak, and Kalkavan (1995), and is titled "The comparison of anthropometric and physical fitness scores of volleyball players in the 12-15 age group with those of a sedentary group". The said study found that male volleyball players were capable of performing 24.8±1.80 crunches on average, while the sedentary group averaged 21.57±2.24. On the other hand, Kızılakşam's (2006) study titled "The comparison of eurofit test battery results of students who actively exercise and who do not" did not find a significant difference between the crunch test scores of men who actively exercise and those of men who do not ($p<0.05$). That result does not concur with our findings, as well as the said story's findings concerning girls. The girls who exercise have a significantly higher average compared to those who do not (23.96±5.68). In the light of these findings one can argue that the students enrolled at sports high schools, when compared against the students of other high schools, have higher muscle endurance, probably due to their higher levels of exercise activities.

The results of the flexibility test revealed that the sports high school students were more successful (17.12±6.77cm) compared to the students of other high schools (8.59±7.27cm). In this context, the test results of sports high school students and the students of other high schools revealed a significant difference ($p<0.05$). Düzgün and Baltacı (2009), in a study on the changes in the level of flexibility in 13-17 years old adolescents who regularly exercise and who do not, reached to the conclusion that 13 years old girls who exercise exhibit higher levels of flexibility. However, the same study found that the differences in flexibility levels of 13-17 years old boys who exercise and who do not had surfaced only by the age of 16. Şirin's (2009) study titled "The comparison of certain biomotor indicators of 14 years old adolescents who exercise and who do not", found, through statistical analyses, that the flexibility levels of the experiment group (22.35±4.404 cm) were higher than those of the control group (17.80±7.971 cm). Moreover, the conclusions reached by Bilim (2013) and Kızılakşam (2006) suggest that the flexibility levels of both the girls and the boys exhibit only statistically insignificant differences. These results arguably indicate that flexibility, one of the physical fitness parameters associated with health, present results favoring sports high school students, due to the fact that they regularly have warm-up exercises and have substantial levels of physical activity in the form of competitions and trainings.

In the balance test, while sports high school students scored 35.06±36.53 seconds, the students of other high schools scored flexibility levels in the range 24.63±25.89 seconds. Even though the balance test scores seemingly favor the sports high school students, the difference between the balance test scores of sports high school students and the students of other high schools were not found to be significantly different. ($p>0.05$). Bağcı (2009) compared certain physical characteristics of 10-12 years old female athletes engaged in aerobics and gymnastics, and the sedentary students in the same age group. In this vein, the average balance scores of the athletes was found to be 0.77±0.94 faults, while the sedentary

group's balance scores was found to be 8.44±4.06 faults. These figures emphasize the importance of the balance as a crucial indicator for the aerobics-gymnastics branch. Bilim (2013) presented the flamingo balance test results for girls and boys in 12-13, 14-15, and 16-17 age groups, who did and did not engage in regular exercise. The statistical analyses presented in the study revealed an average score of 11.12±2.31 for girls who do not engage in regular exercise in the 12-13 age group, while the average score of those who did was 7.27±2.81. The difference between the data for the girls who had regular exercise and for girls who engaged in aerobics and gymnastics has perhaps something to do with the differences of branches. With boys, and with the exception of the age group 16-17, exercising participants in age groups 12-13 and 14-15 had been significantly more successful compared to those who had not engaged in sports. The studies found that the flamingo balance test results of the individuals who took part in sports activities and exercises were higher compared to those of who did not. This finding is in parallel with ours. The students enrolled in sports high school had achieved better compared to the students of other high schools, yet that finding does not meet the criteria of significance, as noted above. A higher level of participation in sports events is considered to have an impact on balance.

The study found that sports high school students scored significantly higher (204.71±24.77) in the standing long jump test compared to other high school students (168.85±33.92). The test results suggest a significant level of difference between the standing long jump test scores of sports high school students and of students of other high schools ($p<0.05$). Having reached similar conclusions, Baydil (2006) found the standing long jump performance levels of boys in 12-14 age group, in his study on the physical fitness norms of that demographics, to be 146.61±16.90 cm. In a study on the comparison of certain anthropometric and motor skills of 10-12 years old boys who receive athletics trainings, and who do not, Gül et al. measured an average of 140.96±17.97 cm of standing long jump performance for the study group, and 130.58±15.69 cm for the control group. The sports high school students were found to score significantly higher (3.48±0.51cm) in the 20m sprint test compared to other high school students (3.93±0.51cm). The test results revealed a significant level of difference between the 20m sprint test scores of sports high school students and students of other high schools ($t_{0.05}$, -4.727; $p<0.05$). Soğat (2007) found that gymnasts' scores in the 20m sprint test (3.84±0.25 sec.) was higher than that of other participants who did not engage in a sport (3.67±0.17 sec.) while the 20m sprint results of handball (3.48±0.13 sec.) and basketball players (3.66±0.11 sec.) and athletes (3.64±0.23 sec.) were shorter than those of the students who did not engage in sports. Yet, the difference is not statistically significant. This finding, however, is not consistent with ours. The 20m sprint test results Şirin (2009) found indicate that the average 20m sprint times of the athletes in the study group (3.41±0.195 sec.) had been lower than those of the control group (3.90±0.359 sec.). This finding, moreover, is statistically significant ($p<0.05$). On the basis of these results, one can argue that regular exercises as well as a more emphasized engagement in physical trainings and sports classes compared to the students of other high schools, had something to do with the higher speeds achieved by the students of sports high schools compared to the students of other high schools.

The sports high school students were found to score significantly higher (807.06±457.92m) in the endurance test compared to other high school students (402.11±196.01m). The test results revealed a significant level of difference between the endurance test scores of sports high school students and students of other high schools ($p<0.05$). In the dissertation titled "The

comparison of the endurance performance achieved during the special skills examination and the endurance performance achieved throughout the academic year among the students of the

physical education and coach training department of Yüzüncü Yıl University", Ertuş (2010) employed yo-yo shuttle sprint test to measure the endurance levels of the students. The yo-yo shuttle test results revealed that the students' average endurance performance at the time of admission to the department (126.85±24.05) had been higher than their performance averages during the academic year (106.44±26.87). The findings of our study also concur. The never ending engagement of sports high school students in competitions, trainings, and a high number of physical education and sports classes at the school can be argued to have supported the finding that they have more endurance compared to the students of other high schools.

The study reached to the conclusion that certain motor skills of sports high school students were better than those of students enrolled at other high schools. The difference, perhaps, has something to do with the preferences athletic students may have towards sports high schools. This study can be followed by further investigations into the level of motor skills of sports high school students and the students of other high schools comparing such levels at the time of admission for the 1st year, and at graduation. On the other hand, increasing the volume of activities to enhance motor skills can be recommended for ordinary high schools.

Physical education classes and sports activities play crucial roles in terms of the development of abilities such as coordination, endurance, strength, speed, and mobility, during high school years. At sports high schools, physical education classes comprise a larger portion of the curriculum. In this vein, an increase in the number of physical education classes for other high schools as well can be recommended. Moreover, it is common knowledge that the students to graduate from such high schools include those who wish to get admission into the physical education and sports departments of universities. In this context, one can recommend the students of ordinary high schools focus more on motor skills required at the admission exams applied for sports-related departments of universities.

It would also be advisable to increase the volume of the studies such as the present one, to cover wider regions and a higher number of provinces, employing a higher number of participants. This study provided an opportunity to assess and compare the motor skills of students. Similar studies to be performed at the schools will enable students to gain better insights into their personal skill levels, and provide them with the means to track their personal development.

The data obtained through similar studies can help sports trainers, including but not limited to physical education teachers, to identify the shortcomings of athletes, and develop applicable training programs. The curricula applied at the schools can be improved to enhance the physical and motor skills of the students as well.

**This article is extracted from my master thesis entitled "Comparison of Certain Physical and Motor Skills of The Students Enrolled at Sports High Schools and Other High Schools: A Case Study in Trabzon Province", (Master Thesis, Karadeniz Technical University, Trabzon/Turkey, 2015).*

REFERENCES

Altındaş, M. E. (2009). Türkiye'de açılan spor liselerinin amaç hedef ve beklentilerinin araştırılması. Yayımlanmamış yüksek lisans tezi, Dumlupınar Üniversitesi, Kütahya.

Altınkök, M. (2012). İşbirliği ile öğretim yöntemine dayalı beden eğitimi derslerinin 9-10 yaş grubu çocukların temel motor becerileri ile problem çözme becerilerinin gelişimine etkisinin araştırılması. Yayımlanmamış doktora tezi, Marmara Üniversitesi, İstanbul.

Aydın, S. (2009). Kütahya ilinde salon sporları müsabakalarına katılan 1. Kademe 10 yaş grubu öğrencilerinin TGMD 2 testine göre motor gelişme düzeylerinin araştırılması. Yayımlanmamış yüksek lisans tezi, Dumlupınar Üniversitesi, Kütahya.

Aygül, M. H. (2010). 14-16 yaş grubu bayan badminton sporcularına uygulanan pliometrik antrenman programının motorik özellikler üzerine etkisi. Yayımlanmamış yüksek lisans tezi, Niğde Üniversitesi, Niğde.

Avşar, S. (2014). 6-7 yaş grubu erkek öğrencilerin sosyo ekonomik düzeylerine göre temel motor becerilerinin incelenmesi. Yayımlanmamış yüksek lisans tezi, Niğde Üniversitesi, Niğde.

Bağcı, E. (2009). 10-12 Yaş grubu aerobik jimnastik branşı ile uğraşan yarışmacı bayan sporcular ile aynı yaş grubu sedanter öğrencilerin bazı fiziksel özelliklerinin eurofit test bataryası ile karşılaştırılması. Yayımlanmamış doktora tezi, Gazi Üniversitesi, Ankara.

Baran, F. (2012). Zihinsel engelli çocukların motor beceri öğreniminde değişken uygulamaların edinim, transfer ve hatırlama süreçlerine etkisinin incelenmesi. Yayımlanmamış doktora tezi, Akdeniz Üniversitesi, Antalya.

Bilgili, Y. (2009). 35-45 yaşları arasında düzenli fitness programına katılan sedanter bireylerin seçilmiş bazı motorik özelliklerinin incelenmesi. Yayımlanmamış yüksek lisans tezi, Sakarya Üniversitesi, Sakarya.

Bilim, A. S. (2013). 12-17 yaş arası spor yapan ve spor yapmayan öğrencilerin fiziksel uygunluklarının incelenmesi. Yayımlanmamış yüksek lisans tezi, Dokuz Eylül Üniversitesi, İzmir.

Canal, E. (2008). Spor liselerindeki öğrencilerin problemleri ve beklentilerinin belirlenmesi. Yayımlanmamış yüksek lisans tezi, Gazi Üniversitesi, Ankara.

Çoban, B. (2006). Spor lisesi öğrencilerinin tercih ettikleri alana ilişkin tutum ve beklentileri. Milli Eğitim Dergisi, 172.

Çoban, İ. (2014). 13-15 yaş grubu futbolcularda kuvvet antrenmanının bazı motorik özellikleri üzerine etkisi. Yayımlanmamış yüksek lisans tezi, Muğla Sıtkı Koçman Üniversitesi, Muğla.

Çolakoğlu, M., Selamoğlu S., Gündüz, N., Acarbay, Ş., Çolakoğlu, S. (1993). Sprint ve atlayıcıların hamstring quadrıceps kuvvet oranlarının düzeltilmesinde izometrik egzersizlerin etkileri. *Spor Bilimleri Dergisi*, 4, 24-31.

Demiral, Ş. (2010). Judo çalışan 7-12 yaş grubu çocuklarda (bay-bayan) judo eğitsel oyunlarının motor becerilerin gelişimine etkisinin incelenmesi. Yayımlanmamış doktora tezi, Marmara Üniversitesi, İstanbul.

Düzgün, İ., Baltacı, G. (2009). Düzenli spor yapan ve yapmayan adolesanlarda esneklik test sonuçlarının yaş ve cinsiyete bağlı değişimi. *Fizyoterapi Rehabilitasyon*. 20(3), 184-189.

Ertuş, Z. (2010). Yüzüncüyıl üniversitesi, beden eğitimi ve spor öğretmenliği bölümü öğrencilerinin özel yetenek sınavı esnasında gösterdikleri dayanıklılık performansıyla eğitim-öğretim dönemindeki dayanıklılık performansının karşılaştırılması. Yayınlanmamış yüksek lisans tezi, Yüzüncüyıl Üniversitesi, Van.

Görmez, G. (2009). Türkiye'deki spor liselerinde bulunan öğrencilerin, öğretmenlerin ve yöneticilerin spor liselerini algılayış biçimleri. Yayımlanmamış yüksek lisans tezi, Ortadoğu teknik üniversitesi, Ankara.

Güçlüöver, A. (2012). Genç milli badmintoncular ile amatör badmintoncuların bazı güç, kuvvet ve çeviklik özelliklerinin araştırılması, Yayımlanmamış yüksek lisans tezi, Kırıkkale Üniversitesi, Kırıkkale.

Güneş, A. (2003). *Okullarda beden eğitimi ve oyun öğretimi*, 3. Baskı. Ankara: Pegem Yayıncılık.

Gürbüzoğulları, G. (2009). Motorik Özellikler. http://www.trabzonbasket.com adresinden 17.02.2015 tarihinde indirilmiştir.

Kalkavan, A. (1996). *Çocuklarda motorik gelişim*. Yayımlanmamış Ders Notları. Trabzon.

Kalkavan, A., Kerkez, F. (1996). *Beden eğitimi ve spor bölümü özel yetenek sınavına katılan öğrencilerin ÖSS, OÖBP ve koordinasyon derecelerinin akademik başarı üzerine etkisinin araştırılması.* Trabzon: KTÜ Yayını.

Karagöz, H. (2009). Sporun ilköğretimde okuyan 8 yaş grubu çocuklarının temel motor özellikleri üzerine etkisinin araştırılması. Yayımlanmamış yüksek lisans tezi, Dumlupınar Üniversitesi, Kütahya.

Karapınar, Y. (2007). Spor liselerinde öğrenim gören öğrencilerin okula giriş nedenleri ve mesleki beklentilerinin araştırılması. Yayımlanmamış yüksek lisans tezi, Dumlupınar Üniversitesi, Kütahya.

Kızılakşam, E. (2006). Edirne il merkezi ilköğretim okullarındaki 12-14 yaş grubu aktif olarak spor yapan ve yapmayan (beden eğitimi dersine giren) öğrencilerin eurofit test bataryaları uygulama sonuçlarının karşılaştırılması.

Kürkçü, Z. (1996). 13-18 Yaş grubu spor yapan ve yapmayan orta öğrenim gençliğinin fiziksel ve fizyolojik özelliklerinin karşılaştırılması. Yayınlanmamış yüksek lisans tezi. Gazi Üniversitesi, Sağlık Bilimleri Enstitüsü, Ankara.

Livonen, S., Saakslahti, A., Nissinen, K. (2011). The development of fundamental motor skills of four- to five- year-old preschool children and the effects of a preschool physical education curriculum. *Early Child Development and Care*, 181(3), 335-343.

Matvienko, O., Fard, I. (2010). The effects of a 4-week after-school program on motor skills and fitness of kindergarten and first-grade students. *American Journal of Health Promotion*, 4(5).

Metiner G., Uluğ, İ. O. (1993) *Spor Yapan ve Yapmayan Ebeveynlerin Çocukların Fiziksel ve Motorsal Performans farklılıklarının İncelenmesi*, IV. Milli Spor Hekimliği Kongresi Bildiri Kitabı, Ege Üniversitesi Basımevi, İzmir 17-19 Eylül, 253-259.

Milli Eğitim Bakanlığı [MEB], (2007). *Spor liseleri yönetmeliği*. Madde: 6.

Milli Eğitim Bakanlığı [MEB], (2009). *Orta öğretim genel müdürlüğü, güzel sanatlar ve spor liselerine öğrenci alımı genelgesi.*

Milli Eğitim Bakanlığı [MEB], (2014). *Güzel sanatlar liseleri ile spor liselerine öğrenci alınması ile ilgili yönetmelik*. Madde: 6-8.

Pang, A. W. Y., Fong, D. T. P. (2009). Fundamental motor skill proficiency of hongkong children aged 6-9 years. *Research in Sports Medicine*, 17, 125-144.

Pense, M., Serpek, B. (2010). 14–16 Yaş arası basketbol oynayan kız öğrencilerin fizyolojik ve biyomotorik özelliklerinin eurofit test bataryası ile belirlenmesi. *Selçuk Üniversitesi Beden Eğitimi ve Spor Bilim Dergisi*, 12 (3), 191-198.

Selçuk, S. D. (2014). 12-14 yaş grubu performans sporuna aday erkek çocukların antropometrik ve motorik özelliklerinin belirlenmesi. Yayımlanmamış yüksek lisans tezi. Ankara: Gazi Üniversitesi.

Şirin, E. (2009). Spor yapan ve spor yapmayan 14 yaş grubu gençlerin bazı biyomotorik gelişimlerinin karşılaştırılması. Yayımlanmamış yüksek lisans tezi, Dumlupınar Üniversitesi, Kütahya.

Soğat, A. (2007). Spor yapan ve yapmayan 11–12 yaş grubu çocuklarda bazı fiziksel özelliklerin araştırılması. Yayımlanmamış yüksek lisans tezi, Dumlupınar Üniversitesi, Kütahya.

Tamer, K. (1987). *Beden eğitimi ve oyun öğretimi*. Eskişehir Anadolu Üniversitesi Açık Öğretim Fakültesi Yayınları, s: 2.

Yalçıner, M. (1992). *Beden eğitimi ve sporun milli eğitim bütünlüğü içerisindeki yeri*. Milli Eğitim Bakanlığı, I. Eğitim Kurumlarında Beden Eğitimi ve Spor Sempozyumu, Ankara.

Ziyagil, M. A., Tamer, K., Zorba, E. (1994). *Beden Eğitimi ve Sporda Temel Motorik Özelliklerin ve Esnekliğin Geliştirilmesi*. Ankara: Emel Matbaa.

Zorba, E., Ziyagil, M., Çolak, H., Kalkavan, A. (1995). 12-15 Yaş grubu voleybolcuların antropometrik ve fiziksel uygunluk değerlerinin sedanter grupla karşılaştırılması. *Hacettepe Üniversitesi Voleybol Bilim ve Teknoloji Dergisi*, 40/1.