

EVALUATION OF PHYSICAL LITERACY OF SECONDARY SCHOOL
CHILDREN

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ABSTRACT

EVALUATION OF PHYSICAL LITERACY OF SECONDARY SCHOOL CHILDREN

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Physical literacy includes physical, psychological and behavioral domain. The main purpose of this study were to determine the physical literacy of children in grade sixth and seventh and to investigate whether there any inter-relationships among sub-domains of physical literacy and to identify grade and gender differences in physical literacy. Participants were 158 sixth and seventh grade students (76 boys, 82 girls) from public schools in Çankaya and Keçiören. PLAYtools were used collecting data. Quantitative data was analyzed by descriptive statistics and inferential statistics. Findings indicated that all students had 75.9 mean score in psychological domain and had 67.6 score in environmental participation. All students, generally, participated in active video games, swimming, bicycle, volleyball, running and walking. However, they had 37.96 of 100 points for motor competence test score. Pearson correlation coefficient results indicated that there is a statistically significant correlation between PLAYself score and PLAYinventory score ($r(156) = .383, p < .05$). PLAYfun had no statistically significant correlation with PLAYself and PLAYinventory. There was a

statistically significant difference in PLAYfun score of boys ($M = 40.63$, $SD = 7.42$) and PLAYfun score of girls ($M = 35.49$, $SD = 6.13$); $t(156) = 4.76$, $p < .05$, $r^2 = .13$. In addition, there was not a statistically significant difference among grade and gender results. In a conclusion, students should encourage doing physical activity in various settings, and providing appropriate and enough amount of knowledge about PL. Future research should be done to examine PL of students in different grades, different school and different cities.

Keywords: Physical Literacy, Secondary School Children, PLAYtools

ÖZ

ORTAOKUL ÖĞRENCİLERİNİN BEDENSEL OKURYAZARLILIĞINI DEĞERLENDİRME

Taş, Hakan

Yüksek Lisans, Beden Eğitimi ve Spor Bölümü

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Bedensel okuryazarlık, fiziksel, zihinsel ve davranışsal bölümleri içermektedir. Bu çalışmanın amacı altıncı ve yedinci sınıf öğrencilerinin bedensel okuryazarlıklarını değerlendirmek ve bedensel okuryazarlık alt kategorilerinin arasında ilişki olup olmadığını ve sınıf, cinsiyet farklılıklarını değerlendirmektir. Ankara ilinde Keçiören ve Çankaya bölgesi devlet okulundan altıncı ve yedinci sınıflardan 158 Katılımcı (76 erkek, 82 kız) çalışmaya katılmıştır. Veri toplamak için, PLAYtools veri araç gereçleri kullanılmıştır. Nicel veri tanımlayıcı ve çıkarımsal analiz ile incelenmiştir. Sonuçlara göre, öğrenciler psikolojik bölümden (PLAYself) 75.90 ortalama puan almışlardır ve çevresel katılımdan 67.70 ortalama puan almışlardır. Öğrenciler genellikle, aktif video oyunları, yüzme, bisiklet, voleybol, koşma ve yürüme aktivitelerine katıldıkları belirlenmiştir. Fakat hareket yetkinlik testinden (PLAYfun) 100 puandan ortalama 37.96 puan aldıkları saptanmıştır. Pearson korelasyon sonucuna göre, PLAYself ile PLAYinventory arasında istatistiksel olarak anlamlı bir ilişki bulunmuştur ($r(156) = .383, p < .05$). PLAYfun ile PLAYself ve PLAYinventory arasında istatistiksel olarak anlamlı bir ilişki yoktur. Çıkarımsal

istatistiğe göre, erkeklerin PLAYfun skorları ile ($M = 40.63$, $SD = 7.42$) kızların PLAYfun skorları ($M = 35.49$, $SD = 6.13$) arasında istatistiksel fark vardır ($t(156) = 4.76$, $p < .05$, $r^2 = .13$). Buna ek olarak diđer sonuçlar, cinsiyet ve sınıflar arasında istatistiksel bir fark olmadığını göstermiştir. Sonuç olarak, öğrenciler çeşitli yerlerde fiziksel aktiviteye katılımı artırılmalı ve yeterli derece bedensel okuryazarlıkla ilgili bilgi sağlanmalıdır. Gelecek çalışmalarda farklı sınıflarda, okullarda ve farklı şehirlerde öğrencilerin bedensel okuryazarlıkları ölçülmelidir.

Anahtar kelimeler: Bedensel okuryazarlık, Ortaokul öğrencileri, PLAYtools

To my family

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TABLE OF CONTENTS

PLAGIARISM	iii
ABSTRACT	iv
ÖZ.....	vi
ACKNOWLEDGMENTS.....	ix
TABLE OF CONTENTS	x
LIST OF TABLES	xiii
LIST OF FIGURES.....	xiv
LIST OF ABBREVIATIONS	xv
CHAPTER	
1. INTRODUCTION.....	1
1.2 Research Questions	6
1.3 Significance of the Study	8
1.4 Definition of Terms	8
2. LITERATURE REVIEW.....	10
2.1 The Philosophical Underpinning of the Concept of Physical Literacy	10
2.1.1 Monism.....	10
2.1.2 Existentialism	11
2.1.3 Phenomenology	11
2.2 Definition of the Physical Literacy	11
2.3 Physical Literacy Cycle.....	13
2.4 Physical Literacy Stage	14
2.4.1 Pre-school years	15
2.4.2 Early and primary school years	16
2.4.3 Secondary school years	16
2.4.4 Early adulthood years.....	16
2.4.5. Adult years	17
2.4.6 Older adult years	17

2.5 Another Assessment Tools for Physical Literacy	17
2.5.1 Canadian assessment of physical literacy (CAPL)	17
2.5.2 Passport for life	18
2.6 Physical Literacy Studies	18
3. METHODS	22
3.1 Research Design.....	22
3.2 Sampling and Settings.....	22
3.2.1 The infrastructure of the schools.....	23
3.3 PLAYTools Instruments	24
3.3.1 PLAYfun.....	24
3.3.2 PLAYself	26
3.3.3PLAYinventory	27
3.4 Procedure.....	28
3.4.1 Inter and intra-rater reliability for the main study.....	28
3.5 Adaptation of PLAYtools	29
3.6 Pilot Study.....	30
3.6.1 Validity and reliability of PLAY instruments.....	30
3.6.2 Results of pilot study.....	31
3.7 Data Analysis	33
3.8 Limitations	33
4. RESULTS	35
4.1 Research Question 1.....	35
4.1.1 Research question 1a.....	35
4.1.2 Research question 1b.....	35
4.1.3 Research question 1c.....	36
4.2 Research Question 2.....	37
4.2.1 Result of Pearson correlation coefficient	37
4.3 Research Question 3.....	37
4.3.1 PLAYself result.....	37
4.3.2 PLAYinventory result	38
4.3.3 PLAYfun result	38
4.3.4 Independent t-test for grade differences.....	38

4.3.5 Assumptions of independent t-test	39
4.3.6 Normality	39
4.3.7 Homogeneity of variance	39
4.3.8 Result of independent t-test.....	39
4.4 Research Question 4.....	40
4.4.1 PLAYself result.....	40
4.4.2 PLAYinventory result	40
4.4.3 PLAYfun result	40
4.4.8 Result of independent t-test for gender differences	41
4.5 Summary of Findings	41
5. DISCUSSION AND CONCLUSION	43
5.1 Physical Literacy of Secondary School Children.....	43
5.2 Relationship among PLAYself, PLAYinventory, PLAYfun	48
5.3 Gender Difference among PLAYself, PLAYinventory, PLAYfun	49
5.4 Grade Difference among PLAYself, PLAYinventory, PLAYfun	50
5.5 Implication of the Study	51
5.6 Recommendation for Future Research.....	52
REFERENCES.....	54
APPENDICES	
A: HUMAN SUBJECTS ETHICS COMMITTEE PERMISSIONS	64
B: CONSENT LETTERS OF MINISTRY OF NATIONAL EDUCATION	66
C: PARENT CONSENT LETTER	68
D: INFORMED CONSENT FORM	70
E: INSTRUMENTS	72
F: TURKISH SUMMARY/TÜRKÇE ÖZET	74
G: THESIS PERMISSION FORM / TEZ İZİN FORMU.....	92

LIST OF TABLES

Table 1 Demographics information of participants	23
Table 2 An example of run a square rubric	26
Table 3 PLAYtools for PL	27
Table 4 Demographic information of participants in pilot study.....	31
Table 5 Students' environmental participation	32
Table 6 The result of pilot study in PLAYfun sub-categories	34
Table 7 Students' environmental participation	36
Table 8 Motor competence score of students.....	36

LIST OF FIGURES

Figure 1 The relationship between three attributes.	13
Figure 2 The relationship between all attributes of physical literacy	14
Figure 3 Physical literacy cycle	15
Figure 4 PLAYfun motor competence scales	25

LIST OF ABBREVIATIONS

MoNE	Ministry of National Education
MVPA	Moderate to Vigorous Physical Activity
WHO	World Health Organization
PLAYtools	Physical Literacy Assessment for Youth tools
CAPL	Canadian Assessment for Physical Literacy
PL	Physical Literacy
PA	Physical Activity

CHAPTER 1

INTRODUCTION

Physical activity is determined as any bodily movement which is produced by skeletal muscles and that movement requires energy expenditure such as walking, active transportation, recreational activities etc. (Turan et. al., 2014). The term “physical activity” is not the same as the term of “exercise”. Exercise is a sub-category of physical activity that should be structured, planned, repetitive and purposive to improve or maintain the fitness level (Caspersen, Powell, & Christenson, 1985; WHO, 2018).

Physical activity promotes a healthy life and the physical activity profile (physical activity type, intensity and amount) that associated with enhanced health and quality of life (Haskell et. al., 2007) and such lifestyles are well documented (Bloemers et. al., 2011). Moreover, physical activity participation is widely accepted for all age, gender, ethnic and socioeconomic subgroups (Tremblay et. al., 2011). World Health Organization (WHO) (2018), have reported the benefits of regular physical activity that improve muscular and cardiorespiratory fitness, improve bone density, reduce heart disease, stroke, diabetes and various types of cancer and depression. According to Reiner and his colleagues (2013), reaching the recommended level of physical activity might be a significant factor to decrease the non-communicable diseases (NCD) which are obesity, diabetes and increase the health condition in high-risk groups and different age groups (Reiner, Niermann, Jekauc & Woll, 2013). Recent studies indicated that being fit or sufficient physical activity participation is associated with higher than 50% reduction in risk of death from any cause or disease and decrease premature death (Warburton, Nicol, & Bredin, 2006). Warburton and his colleagues (2006) suggested that increasing energy

expenditure from a physical activity of 1000 kcal per week was associated with decrease the death rate 20%. However, not doing regular physical activity and not reaching adequate physical activity level a big issue in many countries (Warburton, Nicol, & Bredin, 2006).

Most of the chronic diseases such as obesity, cardiovascular problems are caused by inactive lifestyle (Reiner et. al., 2013) and highly correlated by physical inactivity (Li, 2014). Further, chronic disease is identified by the WHO as non-communicable diseases (NCD) which has slow progression and long duration and result from an unhealthy lifestyle, eating habit and inadequate activity level (Reiner et. al., 2012). In addition, physical inactivity was identified as a risk factor which causes approximately 3.2 million deaths per year (Li, 2014). Long term prospective follow-up studies investigated the risk of death, which were associated with physical inactivity (Warburton, Nicol & Bredin, 2006).

Physical inactivity has tremendous harm not only for human health but also for an economic expense in the world. The total cost of health care systems was 53.8 billion worldwide in 2013 (Ding et. al., 2016). In China, due to the physical inactivity \$6.7 billion spent for these diseases and in the United Kingdom these amounts were \$15 billion annually (Li, 2014). Janssen (2012) indicated that the total cost of physical inactivity increased \$6.8 billion in 2009 in Canada and around the world, every year the cost of health care will be increased. According to Wang and her colleagues (2011) compared with healthy people, obese people's costs of inpatient is increased 46%, 27% more physician visit and outpatient cost and 80% increased spending on prescription drugs in the UK and obese people 1.5-1.9 times more likely to take sick leave in Sweden (Wang, McPherson, Marsh, Gortmaker & Brown, 2011). In the Czech Republic, total health care cost was 14.64 million \$ in 2009 (Kruk, 2014).

Therefore, national and international recommendations for having an active life are suggested for both children and adults. According to WHO (2018) children and adolescents aged between 5-17 years should do at least 60 minutes of moderate to vigorous-intensity physical activity (MVPA) per day and do some exercise in

order to gain muscle strength at least three days in a week. The Canadian Physical Activity Guidelines for children and youth recommended that children should perform at least 60 minutes of MVPA or more intense physical activity daily for optimal growth, development, maturation and mental benefits (Taylor & Kolen, 2016). The American College of Sports Medicine (ACSM) reported that adults should be active at least 30 minutes every day or most days (Savcı, Öztürk, Arıkan, Ince & Tokgözoğlu, 2006; Haskell et. al., 2007). Adults who are aged from 18 to 64 should do at least 150 minutes of MVPA in a week or at least 75 minutes of vigorous-intensity physical activity in a week. For senior adults above 65 years old, exercise recommendations are as similar as adults between 18-64 years have. All physical activity should perform at least ten minutes' duration. Walking is an effective and easy way to reach the recommended physical activity level. Daily physical activity was recommended 10000 steps for adults and 12000 steps for youths to achieve daily physical activity level that is equal eight kilometers and burns 300to 400 calories only in 30 minutes' walk each day (Choi, Pak, & Choi, 2007).

However, both children and adults do not meet this recommendation that is seen in many studies. Most of the Canadian adults are sedentary both men 68% and women 69% and only 15% adults perform 150 minutes of MVPA per week (Colley et. al., 2011). More than half of Canadian adults are physically inactive (Katzmarzyk & Janssen, 2004). Only 9% of children and youth in Canada reached the recommendation in a week, most the children have a sedentary lifestyle (Taylor & Kolen, 2016). In the USA, 42% of children between 6-11 years old reached the recommendation furthermore in sedentary years, less than 5% American adults reach their recommendations of 150 minutes of MVPA per week the result indicated that physical activity level decrease with age (Tariano et. al., 2008). In Turkey, according to Active Living Association (2010), only 25% of people reach the recommended physical activity level and between 15-19 years old adolescent is the most inactive group of people. Further, leisure time is the most inactive time among citizen. Another study in Turkey revealed that 15% students did not participate in physical activity and 68% students had poor physical activity level only 18% students had enough physical activity level from 1097 university students (Savcı et. al., 2006). In

another study conducted by Aksoydan and Çakır (2011) in Kocaeli showed that most of adolescence (79%) had an inactive lifestyle and only 6.6% participated in physical activity regularly and had sufficient physical activity level (Aksoydan & Çakır, 2011).

There might be a direct relationship between physical inactivity and some chronic disease, obesity, and depression. It is necessary to understand the underlying mechanism of the factors that influence physical inactivity (Stodden & Goodway, 2007). One way to understand the mechanism, whether children are learned a fundamental motor skill to participate in physical activity. Fundamental movement skills, which include manipulative (e.g. catching, throwing), locomotor (e.g. running, skipping) and stability (e.g. balance), are taken to be key elements that required for sufficient participation in various physical activities for children, adolescents and adults (Lubans, Morgan, Cliff, Barnett & Okely, 2010). Early childhood is identified as an essential time period to develop of fundamental motor skills (Draper, Achmat, Forbes & Lambert, 2012). Whereas rudimentary form of a fundamental motor pattern is developed naturally, fundamental motor skills must be practiced, encouragement and feedback (Lubans et. al., 2010). Fundamental motor skills help children to use their basic motor skills to engage in various activities and sports during both school years and lifespan (Logan, Robinson, Wilson & Lucas, 2012). If children have no opportunity to develop their fundamental motor skills (running, jumping, catching throwing, etc.), they will participate in limited physical activities or maybe they will not. Further, it was reported that fundamental movement skills were a significantly positive effect on habitual physical activity (Fisher et. al., 2005). During childhood and adolescence period, the better motor skill development children have, the more children participate in various physical activity, sports, and games (Stodden & Goodway, 2007). Raudsepp and Pæll (2006) indicated that levels of both overhand throwing and jumping were a positive association with the skill-specific physical activity. The combination of movement skill, basic human movements are essential to participate in various physical activities (Balyi, Way & Higgs, 2013). Children who have better object control skills are more likely to be fit in their adolescence years (Barnett et al., 2008). Barnett and her colleagues (2009) indicated that MPVA,

organized activity and object control proficiency were positively correlated (Barnett et. al, 2009). It means that fundamental motor skills are the ABCs in the world of physical activity (Stodden et. al., 2008).

In addition to the above, the proficiency of fundamental motor skills in children can play a significant role in the prevention of obesity (Logan et. al., 2011). Kirk (2005) suggested that early year's development of physical competence might lead to engaging in physical activity in various activities during adulthood. However, only motor competence proficiency might be not enough to engage in physical activity (Whitehead, 2010). Lifelong participation in physical activity has greatly associated with health benefits in physical education and physical literacy (PL). Body mass index (BMI), cardiorespiratory fitness, perceived physical competence can be included as other benefits (Tompsett, Burkett & McKean, 2014). Further, Balyi and his colleagues (2013) suggested that the role of PL is necessary for both high-performance athletes and people who want to participate in physical activity in their lifespan. Hence, physical literacy promoting is determined to significant opportunity to create health benefits both in children and adults, further, all individuals are able to be physically literate regardless of their age, ability, height, and weight (Edwards, Bryant, Keegan, Morgan & Jones, 2017).

The concept of PL was established in 2001 to help the global obesity and sedentary crisis (Tompsett, Burkett & McKean, 2014) and it has become significance with scientific papers in many countries (Edwards et. al., 2017). The term "PL" is widely understood as a capacity of persons to participate in physical activity lifespan (Longmuir & Tremplay, 2016) and generally, it was determined with lifelong participation in physical activity (Edwards et. al., 2017). Although a definition of PL is limited (Longmuir & Tremplay, 2016), the term has now more closely with Dr. Margaret Whitehead (Balyi & Hamilton, 2004). Edwards and his colleagues (2017) reported that 70% of articles used 'Whiteheadian' perspective. According to Whitehead (2010), physical literacy is a concept which supports the development of motor competence, psychological factor which promotes confidence and motivation to participate physical activity lifespan (Whitehead, 2010) and physical literacy is the

cornerstone of both participation and excellence in physical activity, physical education, sports and physically active lifestyle (Kiez, 2015; Edwards et. al., 2017). Another definition of physical literacy was proposed by Canadian Sport for Life, “Individuals who are physically literate move with competence and confidence in a variety of physical activities that benefit the healthy development of the whole person” (Balyi & Hamilton, 2004).

Physical literacy is studied by different purpose and aim to prove benefits, impact on different component such as physical activity, and different settings. For instance, Choi and her colleagues (2018) was conducted a study in Hong Kong, a significant correlation was found between perceived physical literacy and physical activity level. Further, children who met physical activity guidelines have better physical literacy score for competence, motivation, and confidence than who did not meet guidelines in Canada (Belanger et. al., 2018). Physical literacy has an impact on weight status. Healthy weight children have a greater score in overall physical literacy than overweight/obese peers (Nyström et. al., 2018). According to Whitehead (2013), individuals who have high self-esteem are more engaged in physical activity than individuals who have low self-esteem.

1.1 Purpose of the Study

The main purpose of the study were to determine the physical literacy of children in grade sixth and seventh and to investigate whether there are any inter-relationships among sub-domains of physical literacy (physical domain (motor competence), psychological domain and behavioral domain) in secondary school children. The second aim was to study to identify the gender and grade differences in physical literacy of secondary school children.

1.2 Research Questions

1- What is the physical literacy of secondary school children?

Sub-questions:

- a. What is the confidence, motivation, knowledge and understanding (psychological domain) level of secondary school children?

- b. What is the physical activity behavior (behavioral domain) of secondary school children?
 - c. What is the motor competence level of secondary school children?
- 2- Is there any inter-relationship among the sub-domains (motor competence, psychological domain and behavioral domain) of physical literacy in secondary school children?

Sub-questions:

- a. Is there any relationship between motor competence and psychological domains?
 - b. Is there any relationship between motor competence and behavioral domain?
 - c. Is there any relationship between psychological domains and behavioral domain?
- 3- Is there any grade difference in physical literacy in secondary school children?
- a. Is there any grade difference in the motor competence of secondary school children?
 - b. Is there any grade difference in the behavioral domain of secondary school children?
 - c. Is there any grade difference in the psychological domain of secondary school children?
- 4- Is there any gender difference in physical literacy of secondary school children?
- a. Is there any gender difference in the motor competence of secondary school children?
 - b. Is there any gender difference in the behavioral domain of secondary school children?
 - c. Is there any gender difference in the psychological domain of secondary school children?

1.3 Significance of the Study

Physical inactivity is a serious problem in the world for both economic and human health (Li, 2014). To prevent or decrease the amount of such serious problems, a healthy lifestyle should be promoted in the school-age children (Bloemers et. al., 2011). One method is to do that an increase of physical activity level which gives a chance to children to develop their fundamental motor skills. This relationship among physical activity and motor skill development are well documented so the better children's motor skill, the more they participate in various physical activities. However, these skills are not developed naturally (Stodden & Goodway, 2007). Stodden and his colleagues claimed that FMS is the ABC's in the world of physical activity (Stodden et. al., 2008).

Physical literacy is the concept which supports the development of motor competence, a psychological factor which is motivation, confidence, and motivation to participate physical activity (Whitehead, 2010) and it is the key elements for a physically active lifestyle in lifespan (Kiez, 2015).

However, there is a lack of information in Turkey on the physical literacy of children and with which investigators assess children's physical literacy. There are a few studies which were conducted about physical literacy in Turkey. Some of them were an action research and physical literacy of children was not evaluated (Alagul, Gursel & Keske, 2012; Keske, Gursel & Alagul, 2012) This current study provides important knowledge and information about physical literacy of children and how to measure three components (behavioral, physical and psychological domains).

1.4 Definition of Terms

- Motivation: desire or want that energizes and directs goal-oriented behavior (Huitt, 2011)
- Motor competence: It is a term of common fundamental motor skills (Stodden & Goodway, 2007).
- Fundamental motor skills: These skills are seen as the building blocks of more complex movements (Clark & Metcalfe, 2002). It includes object

control (throwing, catching, etc.) and locomotor skills (running, skipping, etc.) and balance skills (Stodden & Goodway, 2007).

- Physical activity: It is described as any movement produced by skeletal muscles which require energy expenditure (WHO, 2018).
- Physical inactivity: It is defined as a lack of physical activity (WHO, 2018)
- Physical literacy: It is defined as the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life (The International Physical Literacy Association, 2014).

CHAPTER 2

LITERATURE REVIEW

This chapter explains the philosophical background of the physical literacy that are the definition of the physical literacy, physical literacy cycle and stage, different type of the physical literacy model and the physical literacy related studies which were conducted both in national and international level.

2.1 The Philosophical Underpinning of the Concept of Physical Literacy

The physical literacy has been built up over many years (Whitehead, 2010) and has a strong philosophical base (Whitehead, Durden-Myers & Pot, 2018). Three areas of philosophy support for human embodiment as a significant human potential that are monism, existentialism and phenomenology (Whitehead, 2013).

2.1.1 Monism

Embodied dimension is relying on individual as a holistic being according to some philosophers (Whitehead, 2010). Monism is a theory that admits a person as a whole without independent parts, further a monist view of human condition, one cannot separate between body and mind or the physical and the cognitive (Pot, Whitehead & Durden-Myers, 2018) and views an individual as essentially an indivisible whole (Whitehead, 2013). A monist perspective rejects a Cartesian dualistic view that separates body from mind and individual from the environment and surroundings. Thinking, feeling, moving, talking are not discriminate and all take into account embodied (Pot et. al., 2018). On the other hand, the dualist approach revealed that human can be considered two separable parts, the mind and the body (Whitehead, 2013).

2.1.2 Existentialism

Learning occur interaction with situations, settings and other people (Durdin-Myers, Green & Whitehead, 2018). The briefly existentialists indicated that person creates themselves through their interaction with the world, interaction with the environment (Pot et. al., 2018). In other words, our uniqueness appears as a result of the experiences we have in interacting with the world (Whitehead, 2013). Thus, the more and richer varied these interactions are, the more human improve their potential. This understanding, support and encouragement are key in supply persons match their potential (Pot et. al., 2018). Individuals are what they are more via nurture than nature (Whitehead, 2010).

2.1.3 Phenomenology

Phenomenology is a style of philosophical reasoning that is closely aligned with both existentialism and monism (Whitehead, 2013; Pot et. al., 2018). Phenomenologists are considered to declare that each individual comprehends the world from their unique perspective of their experiences (Whitehead, 2010) and from backdrop of previous interaction (Whitehead, 2013). It means that interaction with the world will be unique for each individual regardless of meaningful, meaningless, positive or negative. These give an imprint or color the individual's view of the world (Pot et. al., 2018).

2.2 Definition of the Physical Literacy

In general, the word of literacy which means knowledge, understand, communication, application and thinking are not brand new for the field of education (Roetert & Jefferies, 2014). However, physical literacy term is used by many authors over the years in different meaning (Balyi et. al., 2013). The physical literacy concept is essential in both daily activities of practitioners and academic writing. Margaret Whitehead published in 2001 "the Concept of Physical Literacy" foster academic debate. Balyi and colleagues (2013) suggested that the idea of Long-Term Athlete Development is adopted and made physical literacy a key component of discussion for practitioners. No matter which one is described physical literacy, it

means that people who are adequately skilled to use their capacity for movement to obtain their personal aim in physical activity or high performance (Higgs, 2010).

According to Margaret Whitehead (2010), Physical literacy enriches life as a whole and is unique to each individual and supports the lifespan physical activity engagement. The definition of physical literacy is as follows: *“As appropriate to each individual’s endowment, physical literacy can be described as the motivation, confidence, physical competence, knowledge and understanding to maintain physical activity throughout the life course”* (p. 83).

Physical literacy can be best shown in two stages. Motivation, confidence and physical competence and effective interaction with the environment are the first step (Whitehead, 2010). This relationship between three attributes is shown in Figure 2.1 and described as follows:

- Motivation (A) can promote the physical activity participation and this can encourage confidence and physical competence (B). The development of physical competence and confidence increase motivation as well (Whitehead, 2010).
- The development of confidence and physical competence (B) can make possible interaction with the environment (C). Interaction with the environment can enhance both motivation (A), physical competence and confidence (B) as well (Whitehead, 2010).

In second steps, other three attributes can be seen (D, E and F). According to Figure 2.2, individual who has experienced physical activity can experience a positive sense of self and enhanced global self-confidence (D), promote fluent self-expression and communication with other (E), and knowledge and understanding (F) (Whitehead, 2010). In addition, these three attributes enhance further attributions which are shown in Figure 2.1.

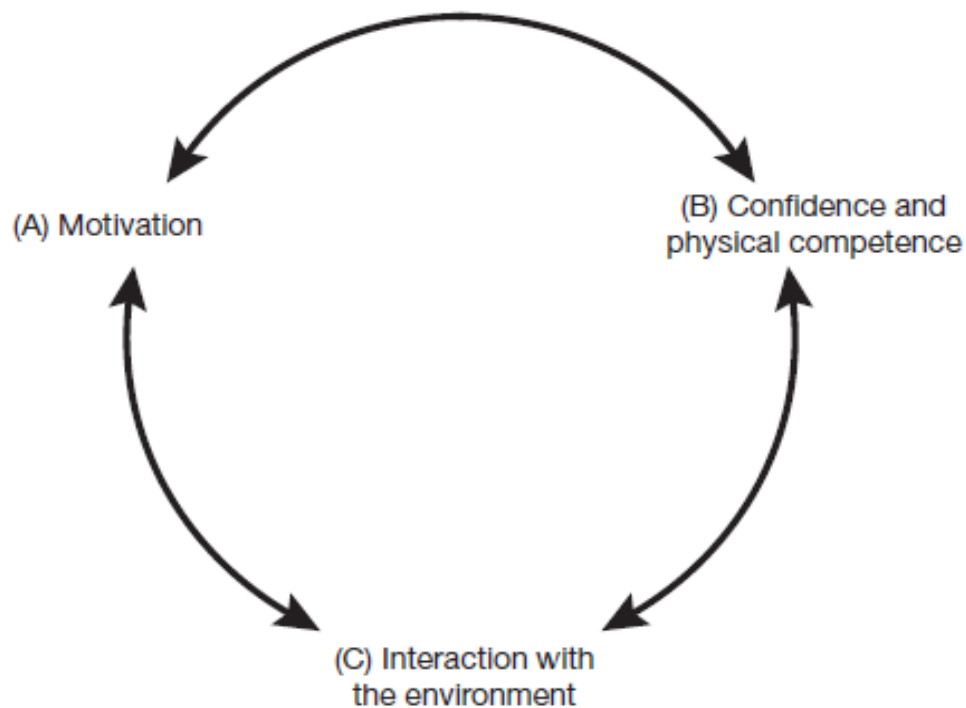


Figure 1 The relationship between three attributes taken from Whitehead, M. 2010. *Physical literacy: Throughout the lifecourse: the concept of physical literacy*, p.36. Copyright 2010 by Routledge.

According to Margaret (2010) definition, physical literacy may be present in many aspects of our everyday life and interaction both personal and in specific physical activity settings (Whitehead, 2010).

2.3 Physical Literacy Cycle

Liz Taplin (2013) proposed a new physical literacy cycle based on Whitehead's work. Elements of motivation, confidence and movement competence were the key attributes in continuous positive feedback cycle which creates a link between physical (motor competence), psychological effect (confidence and motivation) and behavioral (participation in physical activity). The modified version of Taplin's physical literacy cycle is shown in Figure 2.3.

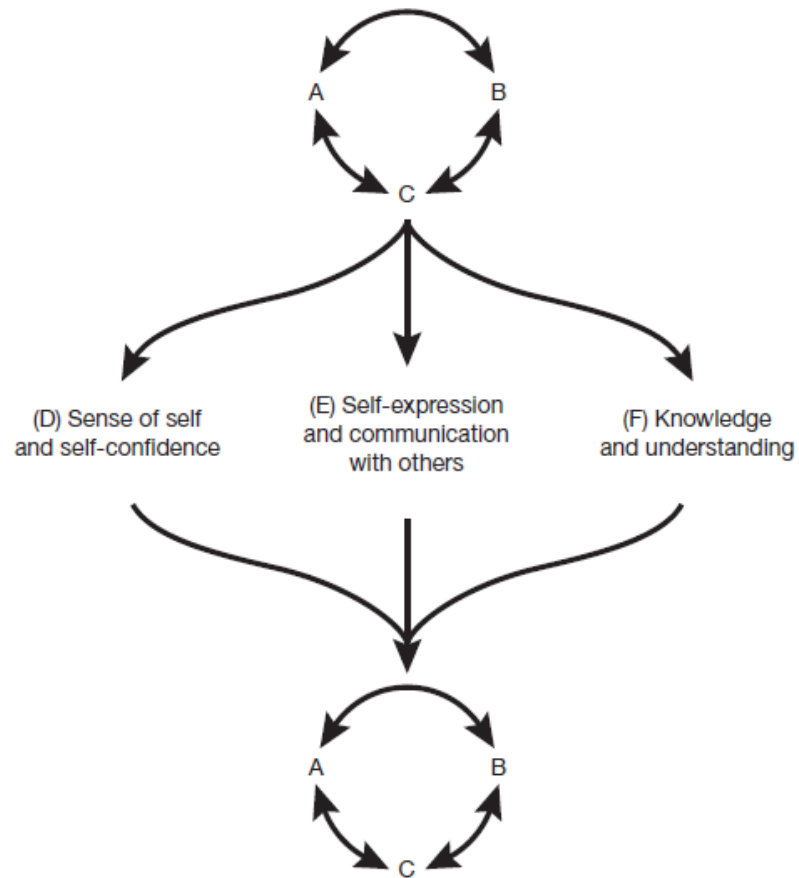


Figure 2 The relationship between all attributes of physical literacy from Whitehead, M. 2010. Physical literacy: Throughout the lifecourse: the concept of physical literacy, p.37. Copyright 2010 by Routledge.

2.4 Physical Literacy Stage

Margaret Whitehead (2013) published a paper which is ‘Stages in Physical Literacy Journey’. The information of these stages were gathered whitehead’s published paper (Whitehead, 2013). This paper suggested some basic characteristics for age related stages in Physical Literacy. Although every person has an experience differently, these stages reflect some basic characteristics. The first three stages should be guided and supported by others. The last three stages are the responsibility of the individual (Whitehead, 2013).

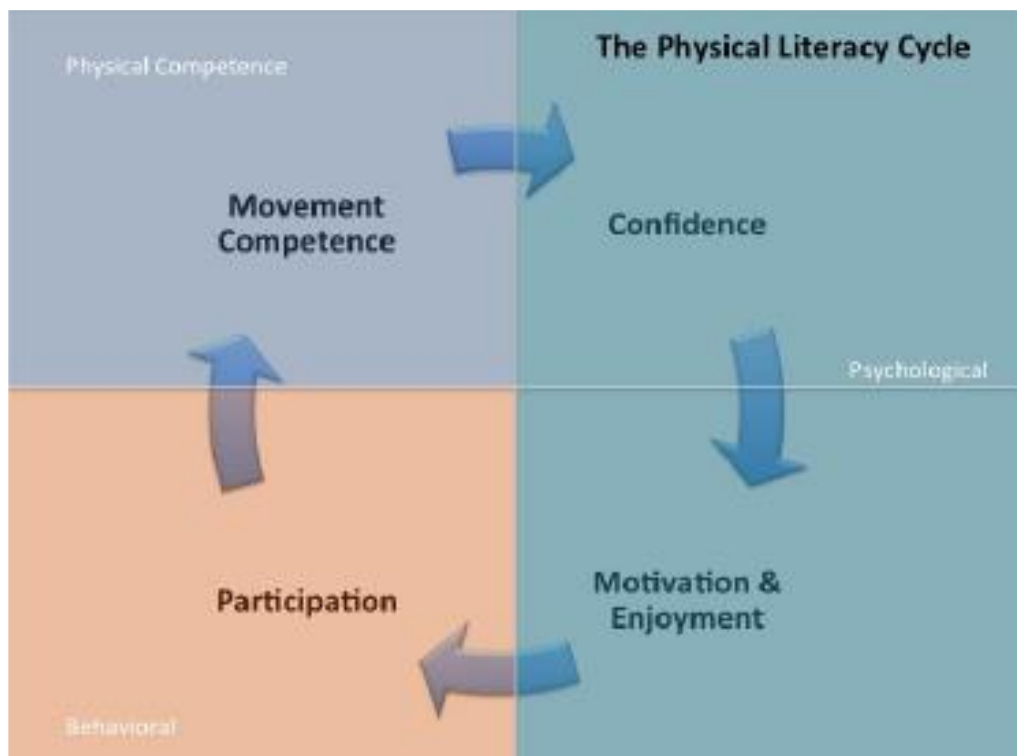


Figure 3 Physical literacy cycle from Taplin 2013. Kozera, T. R. 2017. Physical literacy in children and youth: The physical literacy cycle, p.18. Copyright 2017 by Tanya R. Kozera

Stages in PL are described as follows;

- Pre-school years
- Early and primary school years
- Secondary school years
- Early adulthood years
- Older adult years
- Adult years

The stages are explained in the following sections (Whitehead, 2013);

2.4.1 Pre-school years

It begins from birth to 3 years. Parents, babysitter family should encourage the development of physical literacy. Every opportunity to be physically active

should be given to the baby. Lack of physically active lifestyle can be serious long term effect of the development of children (Whitehead, 2013).

2.4.2 Early and primary school years

The foundation of physical literacy should be improved in this stage too. This stage is a necessary and critical stage in which competencies and attitudes that are so important for physical activity are formed. Planning and evaluating are suggested. The whole body activities such as jumping, climbing patterns should be practiced in various settings. Teachers are the key role to develop the physical literacy in this stage and school, home and recreational facilities should be supported appropriately for children (Whitehead, 2013).

2.4.3 Secondary school years

In secondary school years, physical literacy fundamentals which are motor competence, motivation, confidence, knowledge and understanding are essential to be nurtured and enhanced. In this stage, children should figure out the benefits of being an active lifestyle which is really essential. They should realize that physically active lifestyle is their responsibility after school and physical activity is not just for talented but for all people. Practitioners should be aware of the rapid changes of children. Some children's movement becomes incompetent and posture becomes awkward during this stage. Teachers, peers, family, coaches are the key players to support children's development of physical literacy. Children are given to opportunity to continue participation in physical activity after school (Whitehead, 2013).

2.4.4 Early adulthood years

Maintaining physical literacy level and developing physical literacy level in the responsibility of the individual in this stage. Individuals need to improve fundamental movement skills and improve their self-confidence and self-esteem. Young adults are needed to adopt an active lifestyle for their whole life in this stage. To accomplish that, government and local policies are key factors which give an opportunity to young adults to access to physical activity settings (Whitehead, 2013).

2.4.5. Adult years

In this stage, people are expected to participate in different kind of activities in their lifespan. They know the value of physical literacy, well-being and health. However, physical literacy can be encouraged with numerous opportunities and individual can develop motor competence. The environment should be supported to continue involvement physical activity as done in young adults (Whitehead, 2013).

2.4.6 Older adult years

Physical literacy is needed to be maintained in this stage. Family, peers and medical profession are required at this stage and facilities to be active lifestyle should be available in the local area (Whitehead, 2013).

2.5 Another Assessment Tools for Physical Literacy

Other tools for physical literacy are Canadian Assessment of Physical Literacy (CAPL) by Healthy Active Living and Obesity Research Group in 2014 and the passport for Life by Physical and Health Education Canada in 2013. CAPL was the first comprehensive protocol that can accurately and reliably assess a broad spectrum of skills and ability related to physical literacy (Longmuir, 2013). The passport life was developed to evaluate formative education.

2.5.1 Canadian assessment of physical literacy (CAPL)

The Canadian Assessment of Physical Literacy (CAPL) was aimed to assess not only physical competence (health-related fitness and motor skill), but also evaluate motivation and confidence, knowledge and understanding, and habitual engagement in physical activity (Longmuir, et. al., 2015). CAPL is the first comprehensive method that assesses the skill and abilities which determine the physical literacy level of children (Longmuir, 2013).

These assessment tools were developed by The Healthy Active Living and Obesity Research Group (HALO) in 2008 and responsible since then. It is targeted for a range of children aged from 8 to 12. CAPL include direct assessment of daily behavior (assess daily behavior by counting the number of steps), motor competence (assess the fundamental motor skill), aerobic fitness (assess cardiorespiratory

endurance), plank assessment of torso strength (assess torso muscular endurance) and CAPL-2 questionnaire (assess motivation, confidence, knowledge and understanding).

2.5.2 Passport for life

Passport for Life tool (Physical and Health Education Canada, 2013) evaluates to component of physical education curriculum which is related to physical activity in all provincial and territorial across Canada. The four components of the physical literacy (Active Participation, Living Skills, Fitness Skills and Movement Skills) are evaluated with these tools.

The assessment tools are available for student grades from 3 to 6, from 7 to 9 and from 10 to 12. The Active Participation questionnaire is developed to show the diversity of activities and environment that students participate in. Living Skills, is a self-report questionnaire, determine the overall confidence and competence and individuals need to improve physical literacy. It shows a reflection of feeling, thinking, and interacting skills. The Fitness Skills and Movement skills show a student performance in which he or she does a variety of tasks. Students are assessed by the teacher using a rubric for each task in four levels (emerging, developing, acquired or accomplished) (<https://passportforlife.ca/>).

2.6 Physical Literacy Studies

In the worldwide, physical literacy related studies are limited. In Turkey, a few physical literacy studies exist (Keske, Gursel & Alagul, 2012; Alagul, Gursel & Keske, 2012). In addition to that a limited studies are experimental studies (Caput-Joginica, Locaric & Privitello, 2009; Thomas, 2016; Kiez, 2015; Belanger, et. al., 2016; Kozera, 2017) and others studies are related to teachers' physical literacy (Stephens, 2014; Sum et. al., 2016; Stoddart & Humbet, 2017).

A study (Thomas, 2014) that was a cross-sectional design investigated to determine the effect of active video games (exergame) on physical literacy that contains motor competence, knowledge, understanding, motivation and confidence. 317 children (136 males, 181 females) from eight to thirteen year olds from

Lethbridge area are assessed by Canadian Assessment of Physical Literacy (CAPL). Exergamer and non-exergamer were compared to examine physical literacy score. According to the result, boys showed significantly higher time spend both in exergame and sedentary videogame than girls. However, there was no significant difference in total physical literacy score between genders. Furthermore, girls had better knowledge and understanding score ($p < .05$). Boys had better pedometer score ($p < .05$). In addition to that there was no significant difference in CAPL domains between children who are exergamer and not.

The purpose of another study (Caput-Joginica, Locaric & Privitello, 2009) was to examine the influence of an extracurricular sports program on children's physical literacy from 4 to 6 years old (Preschools). Extracurricular sports program are basic motor movements, elementary games, basic elements from some sports activities such as volleyball, football, dance, aerobics. The Program lasted for nine months four times per week and 45 minute sections for each one in kindergartens. The sample was 136 preschool children (61 girls, 75 boys). Findings indicated that preschool children showed positive changes in the results of final tests especially, long jump, side jump. Generally, boys have better score in explosive strength and coordination while, girls have better score in dynamic strength, flexibility and balance.

The purpose of another study (Belanger, et. al., 2016) was to assess the effectiveness of Healthy Start-Depart Sante intervention on physical literacy score, physical activity levels and healthy eating among preschools. The intervention period lasted for 6-8 months from 61 childcare centers in two provinces, New Brunswick and Saskatchewan and these centers have at least 20 children between 3 to 5 years old. Physical activity level was assessed by accelerometers, physical literacy was assessed by TGMD-2 and digital photography-assisted weighted plate waste for food intake. According to the results, the intervention has a positive effect on children's physical activity level, physical literacy score and dietary behaviors.

Kiez (2015) investigated to examine the impact of circus arts instruction on Physical literacy score on children who are grade in 4 and 5. It was a quasi-

experimental design was used to compare schools which use circus arts instruction in PE class and which use standard PE curriculum. Data were collected beginning and the end of the semester by PLAY Tools. 211 students (equal numbers of grades) participated in this study. According to the result of the study, there were significant improvements in motor competence. The gender gap in motor competence in PE CIRCUS was smaller than that in the PE group. In the intervention group, students had better score on confidence, felt more talented, and have more desire to participate than other groups.

Kozera (2017) studied to determine PL in children, the relationship between PL and health-related fitness and did Run Jump Throw intervention that is an effect on PL score in Grade 3 and 4 grades physical education. Cross-sectional design was used (n = 299) quasi-experimental intervention was used (n =199). Data were collected by PLAY tools, BMI, Waist circumference, Sprint speed, accelerometer, Physical Self-Description Questionnaire and the Motivation to Physical Activity Measure. According to result, motor competence and movement vocabulary increased with aged ($p < .01$). Males had better motor competence than females. PLAYself tools demonstrated convergent validity with PSDQ and MPAM. The intervention has positive impact on physical literacy score in children.

A number of several studies have investigated teachers' physical literacy. Stephens (2014) examined the ideologies and experiences of PE teachers surrounding Physical literacy. Four PE teachers (3 males, 1 female) were interview by using purposive sampling. According to result, teachers' philosophy of PL is not a significant factor to deliver content within the school environment. Because of the social stigma, they are lack of agency while structuring the lecture. Furthermore, teachers had a vague understanding of PL.

Another study (Sum, et. al., 2016) was aimed to construct and validate a "Perceived Physical Literacy Instrument" among physical education teachers. It was a self-report measure using 5-point likert scale. A total of 337 per teacher (125 primary schools, 210 secondary schools) were attended the study. According to the result, the instrument can be used for both research and applied purposes.

Stoddart and Humbet (2017) conducted a study to determine insight on teachers' understanding of Physical Literacy concept. Mix method was used to explore. Data were collected by questionnaire and open-ended questions. 106 teachers (51 males, 55 female) participated in the study. The result showed that a wide range of comprehension and confusion about how physical literacy can be included in the physical education curriculum.

Literatures indicated that a few studies were conducted in Turkey, one study (Alagul et. al., 2012) investigated to levels of responses to the multiple choice test questions by using Bloom's Taxonomy. Participants were seventh grade students from school. Class hours 80 minutes and it lasted for 4 weeks. The first section of the class emphasized on dance skill, the second section of the class focused on physical literacy. Data were collected by exam paper, students' reflections. The result showed that students gave an answer in the "synthesis" level.

Another study (Keske, et. al., 2012) was to search physical literacy has any effect on nutritional habit of the children. The sample size was 26 students in 10th grade from Medical Vocational High School. Portfolio, video records, students and investigator diary was used to collect data. According to result, students were impacted more with physical literacy.

CHAPTER 3

METHODS

The main purpose of the current study was to evaluate the physical literacy of children in grades sixth and seventh. In addition, the study aimed to investigate whether there is an inter-relationship among sub-domains physical domain (motor competence), psychological domain and behavioral domain of the physical literacy in secondary school children. This chapter explains the design of the study, sampling, settings, instruments, data collection procedures, data analysis and gives information about the pilot study.

3.1 Research Design

In this study, the quantitative research methodology was used and the cross-sectional design was selected.

3.2 Sampling and Settings

The study was conducted in Çankaya and Keçiören districts from Ankara. Data were collected from Hatice Hilmi Aksoy, Tarhuncu Ahmet Paşa and Ziraat Mühendisleri public secondary schools (sixth and seventh grade) from 158 participants. Detailed information about participants was given in Table 3.1.

In our education system 4+4+4 system is used. It means that elementary school is from first to fourth grade, secondary school is from fifth to eighth grade and high school is from ninth to twelfth grade. According to the physical education curriculum, first four years children are learning Fundamental Motor Skill and the eighth grade show their skills in specific sports such as in competitive sports, in target sports and so on.

Table 1

Demographics information of participants

	<i>N</i>	<i>Mage</i>	<i>Mheight</i>	<i>Mweight</i>
Grade 6	88	11.39	150.31	42.40
Grade 7	70	12.41	156.27	44.66
Girls	82	11.78	152.07	41.98
Boys	76	11.92	152.82	44.95

Sixth and seventh-grade students are expected to know and able to do these fundamental motor skills. For example, in sixth grade, students are expected to exhibit the preparatory games and events in individual sports and in team sports. Further, in seventh grade, they are anticipated to exhibit the preparatory games and events in individual sports increasing accuracy (MoNE, 2017). Because of these reasons 6th and 7th grades were chosen. The purposive sampling method was used to select schools. What purposive sampling is that based on the specific aim of the research, the researcher uses personal judgment to select a sample. Researchers assume that they can use their knowledge of the population to judge whether or not a particular sample will be representative (Fraenkel, Wallen & Hyun, 2012).

3.2.1 The infrastructure of the schools

The data of the study were gathered from three different public schools in two different districts that are Keçiören and Çankaya in Ankara.

The infrastructures of the schools in Çankaya; both schools had not gymnasium, however, there was plenty of playground in school's garden and the school's garden were big to participate some physical activities and sports such as volleyball and basketball field for all students. These gave a number of opportunities to use the playground in the school garden. There were multipurpose halls inside the schools. Children had an opportunity to participate in kind of physical activity during winter days.

The infrastructure of the school in Keçiören; the school had a gymnasium and had school's garden which could help the students play outside during class as well. However, the school was crowded. There were nine physical education teachers. Thus, sometimes more than three classes had physical education class. Another problem was that there was new school construction in the garden that blocks and restrict school's garden so even though they had the opportunity to participate, because of the population and lack of adequate equipment limits the participation. In addition, near the school, there was a football field which could be used for an after-school course, swimming pool and badminton federation.

3.3 PLAYTools Instruments

In this study, the Physical Literacy Assessment for Youth (PLAY) instruments (PLAYfun, PLAYself and PLAYinventory) were used to describe the physical literacy of children (Sport for life, 2014). PLAY tools were created to evaluate the program and as research (Kozera, 2016). PLAYfun that is an assessment test of motor competence, PLAYself which is a self-assessment tool for the psychological domain, PLAYinventory which is a child's self-report of participation physical activity or different activities. In addition, PLAYbasic provides an assessment of movement that is performed by children and included five tasks that is simplified version of PLAY fun. PLAYcoach is evaluated child's perception level of physical literacy by coach, exercise professionals, physiotherapists. PLAYparents is a form which is used by child's parents to evaluate child's perception level. PLAY tools were developed at the University of Manitoba in 2009-2010 and released to Canadian Sport for life in 2012 for open source distribution and recording sheets, workbooks available online (Sport for life, 2014). These tools are appropriate for ages 7 and older children. PLAY tools were consistently designed as research evaluation tools for the physical literacy and are appropriate with a model of the physical literacy.

3.3.1 PLAYfun

It is a motor competence test providing an assessment of Fundamental Movement Skill which is performed by children. It includes 18 tasks and five sub-

sections which are running (run a square, run there and back, run jump then land on two feet), locomotors (crossover, skip, gallop, hop, jump), object control (overhand throw, strike with a stick, one hand catch, hand dribble stationary and moving forward, kick ball, foot dribble moving forward) and balance, stability and body control (balance walk forward and backward, drop to ground and get back up, lift and lower). This tool assesses the task rather than skills so that includes an evaluation of spatial awareness, skill sequencing, and selection in the competency evaluation. A holistic rubric with a 100 mm visual analog scale is used in the motor competence test in PLAYfun (Figure 3.1). Overall process or outcome can be assessed as a whole with it and this can be tolerated some part of errors if the outcome or process has high quality (Mertler, 2001). Holistic rubric gives investigators an opportunity to broader decisions about the process or outcome (Moskal, 2000) and is being able to assess ability over a broad range of proficiencies. It makes this rubric different from other assessment tools (Kozera, 2017).

Based on the scoring systems of PLAYfun, zero refers to an inability to perform the task and 100 point means an expert in selected task regardless of age. Scale subdivided four categories equally which are (0-24) Initial, (25-49) Emerging, (50-74) Competent, (75-100) proficient. There is no specific criterion for each categories, a complete list of rubrics is available for assessor in PLAYfun workbook. An example of rubrics is stated in Table 3.2.

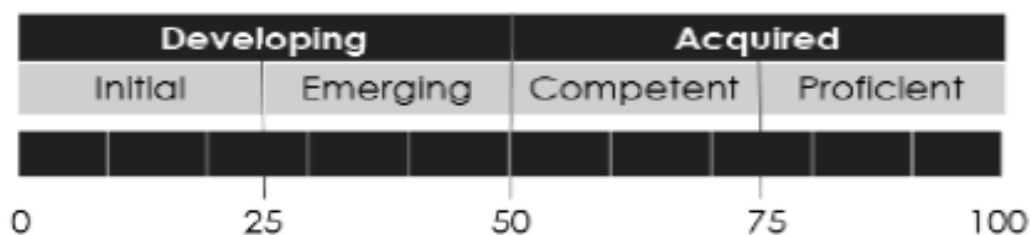


Figure 4 PLAYfun motor competence scales (100 mm visual analog scale). Kozera, T. R. 2017. Physical literacy in children and youth: PLAYfun scales, p. 28. Copyright 2017 by Tanya R. Kozera

Table 2

An example of run a square rubric

Developing	Acquired
<p>Initial: <i>Presence of numerous major gaps during execution:</i></p> <ul style="list-style-type: none"> • Mature running form not present • Person is substantially overshooting or undershooting pylon placements • Slipping, tripping and /or stumbling is present 	<p>Competent: <i>Basic level of execution with minor sequencing errors:</i></p> <ul style="list-style-type: none"> • May partially round corners, taking one extra step to change direction • Most of the corners are consistent in lateral shifts in body direction • Speed is at a jogging rate or faster
<p>Emerging: <i>Limited number of major gaps, but able to execute basic sequencing of the tasks:</i></p> <ul style="list-style-type: none"> • Rounds corners with numerous steps • While changing direction, shuffle of stutter-steps are present • Mature running form present 	<p>Proficient: <i>Overall proficiency is depicted by the quality of the movement:</i></p> <ul style="list-style-type: none"> • Accelerates rapidly • Performs a controlled lateral shift at each pylon with minimal footwork • All four corners exhibit controlled and powerful changes of direction and speed • Speed is maximal

Note. PLAYfun Workbook 9, p. (Sport for life, 2013)

3.3.2 PLAYself

PLAYself was developed as a self-report of the physical literacy for children and determines the psychological domain score of children. There are four sections in the survey. The first part includes engagement in six different environments (gym, water, ice, snow, outdoor and playground) was evaluated with five-point-scale. It shows students indicate environmental participation as ‘never tried’, ‘not so good’, ‘ok’, ‘very good’ and ‘excellent’ (the sum of the maximum score of 30). If child marks ‘very good’ or ‘excellent’ in any environment, s/he feels very confident and able to enough to participate in selected environment however, if child marks ‘ok’, ‘not so good’ or ‘never tried’, the child is needed to develop their practice in that environment.

The second part is a self-description part assessing children’s affective and cognitive domain using 12 questions. It is four-point likert scale (not true at all, not usually true, true and very true) and it shows a child’s self-description of the psychological domain of the physical literacy (maximum score of 48). The questions of PLAYself includes four different options to select for the students for instance, when child mark ‘not true at all’, it gives a null point, however, ‘not usually true’ is 33 points, ‘true’ is 67 points and ‘very true’ is 100 points. The sum of the second part is maximum 1200 point. If a child has scored between 1200-900, the child has very self-efficacy, if the score is between 900-600, the child has relatively high self-efficacy, if it is between 600-300 and 300-0 score, the child has low self-efficacy score (Sport for life, 2013).

The third part is self-rated importance of three different types of skill-based literacies (read/write, math and movement) in different settings (at school, at home, and with friends) and is four-point scale. The last part has a question that asks children whether they seem to themselves as a fit or not. In this study, only the first two parts were applied. The last part for irrelevant for our study.

3.3.3PLAYinventory

Self-report participation in leisure activities was collected by PLAYinventory questionnaire. There are numerous leisure activities are listed in a single sheet and participants check these activities if someone participates in these activities out of school in the past 12 months.

Table 3

PLAYtools for PL

	Aim of the instruments	Type of instruments	Content of instruments
PLAYfun	Physical domain	Motor competence test	18 tasks
PLAYself	Psychological domain	Questionnaire	18 questions
PLAYinventory	Behavioral domain	Questionnaire	PA list

There are also available spaces (named others) on the form which gives students to write down other activities which are not included in the list. More than one physical activity or sports can be marked by one. Table 3.3 shows the basic information about PLAYtools.

3.4 Procedure

The study was conducted at the 2018-2019 academic school year. Prior to the study, ethical report of the Applied Ethics Research Center of Middle East Technical University was obtained (Appendix A). After that, legal permission was taken from the Ministry of National Education (Appendix B). The last permission was taken from the children's parents (parental permission, Appendix C). At the beginning of the study, all students were asked whether they want to participate in the study or not even if we had parental permission. All aspects of the measurement protocol, the purpose of the study, significant of the study were explained to the principals, teachers of the school which were selected.

There was no harm for participants and there were not given the participants intentionally misinformation. The students had a chance of withdrawing from study whenever they wanted or had a chance of not answering questions which they wanted. To handle ethical issues, all the names of participants, their personal information and results were kept in confidential.

Data were collected during their physical education lesson, however, only 10 minutes were taken from one lesson to fill the two questionnaires then to complete a motor competence test, 4-5 students selected. Firstly, the investigator showed one task then, these selected students did that tasks until all 18 tasks were done and they finished the motor test in one lesson by the time the rest of the students were able to continue regular physical education lesson.

3.4.1 Inter and intra-rater reliability for the main study

To check inter-rater reliability, two assessors watched 40 students' videos and assessed all of them one by one independent. First 18 students' videos were done in 5 hours, other 18 students' videos were done in 4 hours, and the last day 4 students'

video was done 45 minutes. Total 9 hours, 45 minutes were spent to complete independent inter-rater reliability. To check inter-rater reliability, interclass correlation coefficient (ICC) was used. According to result, there was good reliability among raters ($\alpha = .87$) (Koo & Li, 2016).

To check intra-rater reliability, forty students have motor test results from inter-rater reliability. After One week passed, each student was assessed again from one assessor according to criteria. To check intra-rater reliability, interclass correlation coefficient (ICC) was used. According to result, there was excellent reliability among raters ($\alpha = .95$) (Koo & Li, 2016).

3.5 Adaptation of PLAYtools

Because of the fact that PLAY instruments (two questionnaires and one motor competence test) are originally English and have not been used with any Turkish study, adaptation procedures of the instruments were followed. First of all, permission was taken from writers. These were translated one linguist and two physical education expert from English (source language) to Turkish (target language). Then translated instruments (three samples for each tool) were combined and were sent to the different linguist to translate from Turkish to English. During the translation phase, we asked (a) are the questions and items meaningful, (b) are the questions clear and appropriate, (c) are the questions understandable. At the end of the translation phase, we made final adjustments to the instruments based on the appropriate terms of physical education and cultural issue. After the final decision, whether it is understandable and appropriate or not, the questions were asked the secondary school children in a sixth and seventh grade. In addition, because of that cultural, traditional difference between Canada and Turkey, some sports and type of physical activity were removed and added. Inline skating, skipping, trail running, cheerleading, spin classes, exercises classes, DVD/CD or home exercises, baton twirling, target shooting, and plating catch were removed, volleyball, basketball, judo, handball, wrestling, karate, folk dances were added to PLAYinventory.

3.6 Pilot Study

The pilot phase of the study was conducted in Hilmi Hatice Aksoy Secondary School in Çankaya districts in May 2018. The whole sixth and seventh-grade children were invited to participate in the pilot study. Whoever had brought the parental permission sheet participated in the pilot study. A total of 86 students (51 boys, 35 girls) participated in the study. Thirty-two students (17 boys, 15 girls) from eighty-six participated in the motor competence test (PLAYfun), however, rest of them completed only two questionnaires (PLAYself, PLAYinventory).

3.6.1 Validity and reliability of PLAY instruments

First of all, content validity was used to assess the validity of the instruments. Content validation is that the instruments include sufficient sample of the domain of content and it is expected to represent if instruments present in an inappropriate format (such as giving a test written in English to children whose English is minimal), the valid result cannot be obtained (Fraenkel, Wallen & Hyun, 2012), expert (from physical education field) opinion was taken whether PLAYself, PLAYinventory and PLAYfun were valid or not.

To check validity and reliability for PLAYself, confirmatory factor analysis was done. According to result, PLAYself can be used in Turkey ($\chi^2 = 78.74$, $df = 51$, $\chi^2/df = 1.54$; GFI = 0.87, CFI = 0.90, RMSEA = 0.08). In confirmatory factor analysis, the sample size should be equal or bigger than five for each question (Myers, Ahn & Jin, 2011). In the current study, data were collected from eighty-six students for twelve questions.

In order to apply PLAYfun, two main researchers examined the PLAYfun workbook and each item in PLAYfun instrument was analyzed one by one. Then, official sample videos on YouTube were observed. These 2 different children's videos for each task (run a square, skipping, galloping, etc.) were watched two times that lasted one hour. Videos were watched again and 18 tasks for each child were examined in accordance with PLAYfun workbook criteria to determine children were placed as initial, emerging, competent or proficient that lasted for three hours.

For PLAYfun reliability, intra-rater and inter-rater reliability were used. Ten students were evaluated with the advisor by inter-rater reliability. To check inter-rater reliability, interclass correlation coefficient analysis (ICC) was used. According to results, there was excellent reliability among raters ($\alpha = .93$) (Koo & Li, 2016). The first four students' video lasted for 3.5 hours and noted with the discussion. During these discussion numbers, 13 kickball, number 15 and number 16 balance walk and number 17 drop to ground and back up were thought to decide for evaluation. Other six students' video recorder lasted 3 hours with the discussion. In this manner, almost % of 33 video recorders were evaluated with the advisor.

Other twenty-two students were evaluated and one week passed between two assessments for each student's motor test. To check intra-rater reliability, interclass correlation coefficient analysis (ICC) was used. According to the result, there was excellent reliability among raters ($\alpha = .97$) (Koo & Li, 2016).

3.6.2 Results of pilot study

Participants were sixth and seventh grade students ($N = 86$, M age = 12.27, M height = 158.98, M weight = 47.38) from Çankaya district. 51 boys were participated (M age = 12.27, M height = 160.43, M weight = 48.02) and 35 girls were participated (M age = 12.26, M height = 156.91, M weight = 46.43) in the pilot study. "PLAYself" and "PLAYinventory" instruments were used to the PL of children based on their own perception and their self-reported which physical activity or sports they participated regularly one year until that time. Table 3.4 shows the demographic information of participants in pilot study.

Table 4

Demographic information of participants in pilot study

	<i>N</i>	<i>Mage</i>	<i>Mheight</i>	<i>Mweight</i>
All students	86	12.27	158.98	47.38
Girls	35	12.26	156.91	46.43
Boys	51	12.27	160.43	48.02

Result of the psychological domain (PLAYself) indicated that both all students had 70.25 out of 100 points which means that they had high self-efficacy, motivation to participate score to the physical activity participation. Environment score (How good are you at doing sports and activities?) has 62 out of 100 points ($M = 3.1$, $SD = 1.15$). Second domain (what do you think about doing sports and activities?) has 78.5 out of 100 point ($M = 3.14$, $SD = 0.73$). Gender results revealed that boys ($M = 3.18$, $SD = 0.7$) and girls ($M = 3.08$, $SD = 0.75$) had almost the same self-description score, however, girls ($M = 3.27$, $SD = 1.16$) had better environmental participation score than boys ($M = 2.99$, $SD = 1.87$). Boys ($M = 1.92$, $SD = 1.07$) participated physical activity and sports least on the ice and girls ($M = 2.37$, $SD = 1.42$) participated physical activity and sports least on the snow. However, both gender boys ($M = 4.06$, $SD = 0.71$) and girls ($M = 4.34$, $SD = 0.64$) participated physical activity and sports the most in outdoors (see table 3.5).

Table 5

Students' environmental participation

In the gym		On the water		On the ice		On snow		Outdoors		On the playground		
<i>N</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
86	3.30	1.26	3.22	1.10	2.16	1.16	2.30	1.27	4.17	.69	3.45	1.39

According to the behavioral domain findings (PLAYinventory), 38 of students participated in football (38), cycling (42), basketball (29), volleyball (26), walking (44) and running (31), swimming (24) were the sports and physical activity that children participated in more than other sports and physical activity. Generally, 33 of boys participated in football (33), cycling (29), basketball (24), running (22) and walking (29) physical activity or sports. However, 18 of girls participated in volleyball (18), walking (15), dance (13), cycling (13) and skate (13) physical activity or sports.

Physical domain (PLAYfun) indicated that all children are placed in emerging level (between 26- 50 out of 100). However, when total scores were

divided as locomotor, object control and balance, the highest score is in balance both gender. On the other hand, the lowest score in object control both gender. When split gender, boys have a slightly higher score than girls on average. Table 3.6 shows inter and intra-rater reliability both average and gender results.

3.7 Data Analysis

Data analysis was conducted followed by both descriptive and inferential statistic's analysis with SPSS version 24 in this study. Descriptive statistics were performed to present all variables such as means, standard deviations. Inferential statistics were performed to analyze inter-relationship among the sub-domains of physical literacy, grade difference and gender difference in physical literacy score. Independent t-test for grade and gender difference was performed. Pearson correlation coefficient for inter-relationship among sub-domains was performed. All assumptions for independent t-test and correlation were checked before analysis. An alpha level was utilized as .05 which means the results of the analysis are true with a 95% of probability and if alpha is smaller than .05, it means that there is a significant relationship between variables (Gravetter & Wallnau, 2016).

3.8 Limitations

The data of this study were collected from two different grades (sixth and seventh grade) in secondary school settings in Keçiören and Çankaya. The number of students were high in schools thus they had some difficulty to have plenty of sports kit. Although there were students from two different districts, their socio-economic level was similar. One school had no gymnasium but had a place to use in different purpose, other had a gymnasium. Three different instruments were used to understand secondary school children's physical literacy. During executing motor competence test, each motor tasks were shown and some of them such as crossover, galloping, skipping were meaningless and complicated for almost all students.

Table 3.6

The result of Pilot study in PLAYfun sub-categories, and gender difference according to inter-rater and intra-rater reliability

	Inter-rater reliability				Intra-rater reliability					
	First observer		Second observer		First observation		Second observation			
	N	M	SD	M	SD	N	M	SD	M	SD
Total	10	41.37	14.44	43.01	14.22	22	39.05	11.58	38.00	12.99
Male	5	40.68	14.78	42.54	14.29	12	41.08	13.39	40.97	13.31
Female	5	42.06	14.1	43.48	14.15	10	36.61	9.41	34.44	12.61
Locomotor	10	38.98	14.42	40.76	14.97	22	34.85	15.01	35.32	15.13
Male	5	31.00	13.10	37.68	13.67	12	36.54	13.86	37.46	14.82
Female	5	46.96	15.74	43.84	16.27	10	30.82	16.39	32.75	15.50
Object control	10	37.50	15.16	39.50	14.36	22	35.74	12.16	34.42	12.24
Male	5	38.50	17.09	42.10	15.38	12	38.72	13.84	36.92	13.74
Female	5	36.50	12.42	36.90	13.34	10	32.16	10.14	31.42	10.44
Balance	10	54.00	13.39	52.77	12.52	22	52.41	11.22	52.27	9.85
Male	5	52.30	14.68	52.95	13.89	12	53.69	11.71	53.94	9.46
Female	5	55.70	12.10	52.59	11.15	10	50.87	10.63	50.27	10.32

CHAPTER 4

RESULTS

In this chapter, descriptive result, the correlation among instruments, gender differences and grade differences among instruments were explained.

4.1 Research Question 1

What is the physical literacy of secondary school children?

4.1.2. Research question 1a.What is the confidence, motivation, knowledge and understanding (psychological domain) level of secondary school children?

Result of the psychological domain indicated that all students had 75.9 out of 100 points which means that they had high self-efficacy, motivation to participate score to the physical activity participation. Environmental participation score (How good are you at doing sports and activities?) has 67.6 out of 100 points ($M = 3.38$, $SD = 1.19$). The second domain (what do you think about doing sports and activities?) had 80 out of 100 points ($M = 3.20$, $SD = 0.76$). They participated in physical activity and sports least on the ice ($M = 2.16$, $SD = 1.16$). However, they participated in physical activity and sports the most in outdoors ($M = 4.22$, $SD = 0.93$). Table 4.1 shows the environmental participation of students.

4.1.2 Research question 1b.What is the physical activity behavior (behavioral domain) of secondary school children?

Behavioral domain findings demonstrated that 68 of students participated in active video games (68) furthermore, swimming (68), football (71), roller skating (55), bicycle (93), volleyball (72), running (86), walking (87), basketball (72) are the sports that children participated in more than other sports and physical activity.

Table 7

Students' environmental participation

<i>N</i>	In the gym			On the water		On the ice		On snow		Outdoors		Playground	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
158	3.56	1.09	3.22	1.30	2.16	1.16	3.04	1.44	4.22	.93	3.83	1.22	

4.1.3 Research question 1c. What is the motor competence level of secondary school children?

Table 8

Motor competence score of students

	<i>N</i>	<i>Total</i>		<i>Locomotor</i>		<i>Object Control</i>		<i>Balance</i>	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Students	158	37.96	14.40	33.96	15.55	33.86	13.52	52.12	13.43
Grade 6	88	36.99	14.05	33.43	15.41	31.59	12.86	52.22	13.13
Grade 7	70	39.19	14.48	34.63	15.68	36.72	13.50	51.99	13.55
Boys	76	40.64	14.72	35.89	15.97	38.28	14.21	53.70	13.01
Girls	82	35.49	13.28	32.17	14.74	29.81	11.06	50.66	13.69

According to the PLAYfun results, average score of all children is 37.96 which mean that all students are placed in emerging level (between 26- 50 out of 100). Their highest score was in balance ($M = 52.12$, $SD = 13.43$), however, their locomotor ($M = 33.96$, $SD = 15.55$) and object control ($M = 33.86$, $SD = 13.52$) score were almost same. When looking at the movement vocabulary separately, students had lowest score in crossover ($M = 26.84$, $SD = 14.99$), skipping ($M = 21.18$, $SD = 17.63$), gallop ($M = 30.15$, $SD = 18.15$), overhand throw ($M = 28.69$, $SD = 17.08$), strike with a stick ($M = 20.80$, $SD = 10.83$) and kick ball ($M = 26.26$,

$SD = 14.67$). Table 4.2 shows PLAYfun score both average and gender results. However, their highest score in balance walk forward ($M = 61.25$, $SD = 13.02$) and lift and lower ($M = 61.45$, $SD = 11.07$). Table 4.2 shows the motor competence score of all students, grade sixth and seventh and gender both boys and girls.

4.2 Research Question 2

Is there any inter-relationship among the sub-domains (motor competence, psychological domain and behavioral domain) of physical literacy in secondary school children?

4.2.1 Result of Pearson correlation coefficient

The mean scores of PLAYFun, PLAYself and PLAYinventory were assessed to determine whether there were positive correlations among score. Pearson correlation was done to indicate among mean scores. There is a statistically significant correlation between average PLAYself score and PLAYinventory score ($r(156) = .383$, $\rho < .05$). However, There is not statistically significant correlation between PLAYself score and PLAYfun ($r(156) = .074$, $\rho > .05$). Further, There is not statistically significant correlation between PLAYinventory score and PLAYfun score ($r(156) = .016$, $\rho > .05$).

4.3 Research Question 3

Is there any grade difference in physical literacy in secondary school children?

4.3.1 PLAYself result

Results of psychological domain indicated that sixth grade, 81.5 out of 100 points, ($M = 3.26$, $SD = 0.72$) had better self-description score than seventh grade, 78 out of 100 points ($M = 3.12$, $SD = 0.78$). However, sixth grade, 66.2 out of 100 points, ($M = 3.31$, $SD = 1.24$) and seventh grade, 67.2 out of 100 points, ($M = 3.36$, $SD = 1.11$) had almost the same score in the environmental participation. Further, both grade had low score in ice sixth grade ($M = 2.08$, $SD = 1.97$) and seventh grade

($M = 2.27$, $SD = 1.10$), and high score in outdoor for sixth grade ($M = 4.14$, $SD = 1.06$) and seventh grade ($M = 4.31$, $SD = 1.24$) (see table 4.3).

4.3.2 PLAYinventory result

According to the behavioral domain results, 37 of sixth grade students participated in active video games (37), swimming (44), football (36), skating (32), bicycle (52), volleyball (43), basketball (43), running (52). However, seventh grade students participated in active video games (31), football (35), bicycle (41), basketball (29), running (34), walking (37), and rope jumping (25).

4.3.3 PLAYfun result

According to the physical domain results, sixth grade students had total 36.99 score in motor test that means they were in emerging level (between 26- 50 out of 100). Their highest score was in balance ($M = 52.22$, $SD = 13.13$), however their locomotor ($M = 33.43$, $SD = 15.41$) and object control ($M = 31.59$, $SD = 12.86$) score were almost same. Seventh grade students had total 39.19 score in motor test. Their highest score was in balance ($M = 51.99$, $SD = 13.55$), their lowest score, however, were in locomotor ($M = 34.63$, $SD = 15.68$). When looking at the movement vocabulary separately, sixth grade students had high score in balance walking forward ($M = 60.98$, $SD = 12.75$) and lift and lower ($M = 60.02$, $SD = 10.74$). Their lowest score in crossover ($M = 24.76$, $SD = 14.77$), skipping ($M = 20.10$, $SD = 18.01$), gallop ($M = 28.88$, $SD = 19.22$), kick ball ($M = 22.67$, $SD = 13.33$), strike with a stick ($M = 18.51$, $SD = 10.12$) and overhand throw ($M = 23.22$, $SD = 14.46$). Seventh grade students had high score in balance walking forward ($M = 61.60$, $SD = 13.43$) and lift and lower ($M = 63.24$, $SD = 8.27$). Their lowest score in crossover ($M = 29.44$, $SD = 14.97$), skipping ($M = 22.53$, $SD = 17.17$), gallop ($M = 31.79$, $SD = 16.71$), strike with a stick ($M = 23.69$, $SD = 10.08$) and slightly lower score than sixth grade in run a square ($M = 37.01$, $SD = 15.31$).

4.3.4 Independent t-test for grade differences

Independent t-test was used to determine grade difference and gender difference among PLAYFun, PLAYself and PLAYinventory mean score. These

assumptions valid for both section 4.3 grade and section 4.4 gender differences analysis.

4.3.5 Assumptions of independent t-test

According to Gravetter and Wallnau (2016), some assumption had better to provide for statistical tests. The main assumptions of independent t-test were independent observation, normality check and homogeneity of variance. In this study, there is no dependency on the scores between observations.

4.3.6 Normality

To examine normality, Skewness and Kurtosis values were used. The value should be close to zero between -3 and +3. The more the value close to zero, the less variation in data, less extreme cases and scores thus, the more normal distribution. According to the results, Skewness was .06, Kurtosis was .67 for PLAYself, Skewness was 1.08, Kurtosis was 1.53 for PLAYinventory, Skewness was .04, Kurtosis was .47 for PLAYfun.

4.3.7 Homogeneity of variance

It should be that the two populations from samples in the study are selected must have equal variances. Levene's test can be check to determine equal variances if it is p-value bigger than .05 (Gravetter & Wallnau, 2016). According to Levene's test p-value for PLAYfun .97, for PLAYself .67, for PLAYinventory .68

4.3.8 Result of independent t-test

The independent t-test was used to determine grade difference among PLAYFun, PLAYself and PLAYinventory mean score. The independent t-test results indicated that there was not statistically significant difference in the PLAYfun mean score of sixth grade ($M = 36.99$, $SD = 7.20$) and PLAYfun mean score of seventh grade ($M = 39.19$, $SD = 7.14$); $t(156) = 1.91$, $p > .05$. There was not a statistically significant difference in the PLAYself mean score of sixth grade ($M = 76.48$, $SD = 10.74$) and PLAYself mean score of seventh grade ($M = 74.40$, $SD = 10.36$); $t(156) = 1.23$, $p > .05$ and in the PLAYinventory mean score of sixth grade ($M = 15.26$, SD

= 9.70) and PLAYinventory mean score of seventh grade ($M = 13.87$, $SD = 11.12$); $t(156) = .84$, $p > .05$.

4.4 Research Question 4

Is there any gender difference in physical literacy of secondary school children?

4.4.1 PLAYself result

According to PLAYself, results, boys, 78.75 out of 100 points ($M = 3.15$, $SD = 0.77$), had lower self- description score than girls, 83 out of 100 points, ($M = 3.32$, $SD = 0.74$). Girls, 66.8 out of 100 points, ($M = 3.34$, $SD = 1.22$) and boys, 66.6 out of 100 points, ($M = 3.33$, $SD = 1.14$) had almost the same environmental score. Boys ($M = 2.17$, $SD = 1.15$) and girls ($M = 2.16$, $SD = 1.17$) participated in physical activity and sports least on the ice. Furthermore, both gender boys ($M = 4.28$, $SD = 0.78$) and girls ($M = 4.16$, $SD = 1.05$) participated in physical activity and sports the most in outdoors.

4.4.2 PLAYinventory result

According to PLAYinventory instruments, 45 of boys participated in active video games (45), football (54), bicycle (48), running (43), walking (41) however, girls participated in swimming (35), roller skating (36), bicycle (45), volleyball (52), running (43), walking (46) and rope jump (42). Both gender almost equally participated in running, walking and bicycle as sports or physical activity.

4.4.3 PLAYfun result

According to PLAYfun, Boys had ($M = 40.64$, $SD = 14.72$) motor test score and girls had ($M = 35.49$, $SD = 13.28$) motor test score. The highest score is in balance both gender boys ($M = 53.70$, $SD = 13.01$) girls ($M = 50.66$, $SD = 13.69$). On the other hand, the lowest score in object control for girls ($M = 29.81$, $SD = 11.06$), in locomotor for boys ($M = 35.89$, $SD = 15.97$). Boys had a slightly higher score than girls all part locomotor, object control and balance. When looking at the movement vocabulary separately, boys had high score in balance walking forward

($M = 63.36$, $SD = 12.53$) and lift and lower ($M = 61.97$, $SD = 10.56$). Their lowest score in crossover ($M = 29.91$, $SD = 16.35$), skipping ($M = 20.76$, $SD = 18.34$), gallop ($M = 29.14$, $SD = 17.58$) and overhand throw ($M = 22.47$, $SD = 11.80$). Girls had high score in balance walking forward ($M = 59.30$, $SD = 13.23$) and lift and lower ($M = 60.96$, $SD = 11.57$). Their lowest score in crossover ($M = 23.99$, $SD = 13.08$), skipping ($M = 21.56$, $SD = 17.05$), gallop ($M = 31.09$, $SD = 18.72$) and different from boys in kick ball ($M = 18.79$, $SD = 10.50$).

4.4.8 Result of independent t-test for gender differences

The independent t-test was used to determine gender difference among PLAYFun, PLAYself and PLAYinventory mean score. The gender results indicated that there was a statistically significant difference in the PLAYfun mean score of boys ($M = 40.63$, $SD = 7.42$) and PLAYfun mean score of girls ($M = 35.49$, $SD = 6.13$); $t(156) = 4.76$, $\rho < .05$, $r^2 = .13$. Eta squared showed that there was a small effect. However, there was not a statistically significant difference in the PLAYself mean score of boys ($M = 74.79$, $SD = 10.69$) and PLAYself mean score of girls ($M = 76.26$, $SD = 10.52$); $t(156) = .87$, $\rho > .05$ and in the PLAYinventory mean score of boys ($M = 15.20$, $SD = 11.30$) and PLAYinventory mean score of girls ($M = 12.13$, $SD = 9.41$); $t(156) = .65$, $\rho > .05$.

4.5 Summary of Findings

In this chapter, distinctive information was presented. PLAYself findings revealed that students had high self –efficacy score. Six grade students' score had slightly higher than seventh grade students' score and girls had a slightly better score than boys. When looking at the environmental participation, students participated in outdoor activities and they were not comfortable when they participated in ice and snow activities regardless of gender and grade.

The result of PLAYinventory indicated that students, generally, participated in active video games, football, basketball, volleyball, bicycle, running and walking activities. There were not different between grades. However, girls participated in rope jumping, volleyball, boys, generally, participated in football, and bicycle.

The result of PLAYfun indicated that students had 37.96 motor competence test score which was the level that emerging in motor competence test. They were not able to do galloping, skipping, overhand throw, strike with a stick. But they were good at balance walking forward and lift and lower. When split grade and gender, they, generally, had same score all component of the motor competent test. Boys had a slightly better score than girls.

Pearson correlation coefficient results indicated that PLAYself score of students had a statistically significant correlation to PLAYinventory. However, PLAYfun had not statistically significant correlation to PLAYself and PLAYinventory.

The results of independent t-test indicated in grade and gender difference, PLAYfun mean score of boys had statistically difference than PLAYfun mean score of girls. Among other combination, there was no statistical difference.

CHAPTER 5

DISCUSSION AND CONCLUSION

In this chapter, the findings of the research were discussed for each research questions, respectively. At the end of the thesis, implication of study and recommendation for future research were provided.

5.1 Physical Literacy of Secondary School Children

Findings indicated that all students had very high in PLAYself (psychological domain) questionnaire. Self-description score had better than environmental participation score. All students participated in physical activity or sports at least on the ice, the most in outdoors activities. Sixth-grade students (81.5) had better self-description score than seventh grade (78). However, both grade students had almost the same score in environmental participation. They participated in at least on the ice and the most in outdoors. The results of PLAYself also showed that boys (78.75) had lower self-description score than girls (83). However, boys (66.6) and girls (66.8) had almost the same environmental participation score. They participated in physical activity and sports at least on the ice for boys 43.4 for girls 43.2 and the most in outdoors for boys 85.6 for girls 83.2.

Findings indicated that they had very high self-efficacy to learn skills, and attempt to new physical activity and sports. In addition to that sixth grade students and girls had higher self-efficacy score than seventh grade and boys. However, previous studies revealed that boys had a higher perception of motor competence, self-perception, and intrinsic motivation towards physical activity score than girls (Biddle & Armstrong, 1992; Hayes, Crocker & Kowalski, 1999; Crocker, Eklund & Kowalski, 2000). Furthermore, they had more motivation score for competition,

challenging, motor abilities such as strength and endurance than girls (Kilpatrick, Hebert & Bartholomew, 2010). A reason might be that perceived physical activity level of students higher than actual physical activity level. Too much self-efficacy might not reflect the actual situation in physical activity participation, level and may impact on students with overconfident and too much expectation from themselves (Sport for life, 2013). Students, even if they were split as grade or gender, had almost the same score from environmental participation, they were placed in between 'OK' and 'very good' in environmental participation part that means they were needed to show their abilities in different places and they felt very confident and there were able to do physical activity in some places. For instance, they felt confident when they participated in outdoor activities such as football, tennis, orienteering, bicycles. However, they were needed to improve their abilities in ice and snow-based activities (Sport for life, 2013). Perhaps, outdoor activities such as football, bicycles, volleyball, and basketball can be played with friends and parents in many times because parents' involvement factors shows it has a positive relationship with children's participation (Fredricks & Eccles, 2005). People living in Ankara have limited opportunity to participated in ice and snow activities however, they have plenty of opportunities for outdoor and playground activities during the year because of the geographical location. These might be the reason children reported low confident when they participated ice and snow based activities and high confident when they participated in outdoor activities. If this study were done in east of Turkey, for example in Erzurum, participants would be expected that they were more confident when they participated in snow and ice based activities.

PLAYinventory (behavioral domain) findings demonstrated that students participated in active video games, football, swimming, bicycle, volleyball, basketball, running, walking. House chores, farm chores were marked by a few children. Sixth-grade students and seventh-grade students participated in active video games, football, basketball, running. Sixth-grade students, unlike seventh grade students, preferred swimming, skating. However, seventh-grade students did choose walking, rope jumping. Boys, unlike girls, participated in active video games, football. Further, girls participated in roller skating, rope jump different than boys.

Children, generally, participated in popular and cultural physical activity or sports such as football, basketball and volleyball, bicycle and a few students marked farm chores. Recent studies indicated that children participate in popular games such as football, basketball and net games (Abernethy & MacAuley, 2003; Tozoğlu S., Çağlaroğlu, & Tozoğlu D., 2009; Sahlin, 2017). Furthermore, some materials such as net for volleyball, goal in football, basket exists in almost all outdoor playgrounds and all school gardens. Thus, children might have a chance to participate in these activities. Children may have opportunity to involve such sports with their friends and parents. In Keçiören, most of students marked swimming class and they were able to play badminton. There was a swimming pool and badminton federation near a school. These may be the reason why those students did participate in swimming and in badminton. Some studies give necessary information for these factor, easy to reach local facilities (Booth, Owen, Bauman, Clavisi & Leslie, 2000), supportive environment (Giles-Corti & Donovan, 2002) and parks, indoor gym were positively associated with physical activity level and physical activity participation (Brownson, Baker, Housemann, Brennan & Bacak, 2001). Furthermore, high level of wellness and self-rated were associated with high a level of social support (Poortinga, 2006). If this study were done in a city in which most people earn money from agriculture, farm chores would be marked more than it was marked in this study. Elling and Knoppers (2005) demonstrated the similar results in their study girls preferred to participate in gymnastics, volleyball and swimming more than boys, however, boys participated in more masculine sport such as football, basketball and boxing. In addition to that boys generally, participated in soccer however, girls participated in gymnastics, dance and ice skating (Chalabaev, Sarrazin, Fontayne, Boiche & Clement-Guillotin, 2003). Type of sports, in terms of masculine, feminine and cultural which effect on children's sports participation, were documented and it might be the reason that they preferred these activities differently and choosing sports or activities are different. To try to modify these differences, teachers, trainers and even parents should consider cause and consequences and further, encourage their children, students to participate in various activities in different settings. Reaching facility easily can impact on the sport participation of children and adults,

policy makers should consider developing external opportunities such as swimming pools, recreational area, and sports complexes.

The PLAYfun (physical domain) findings indicated that all students were placed in emerging level. Their highest score was in balance tasks. Locomotor and object control tasks were same level. Seventh-grade students had slightly better motor test score than sixth grade students. Sixth grade and seventh grade students had the highest score in balance. However, seventh grade students' lowest score in locomotor. Based on our secondary school curriculum expectation (MoNE, 2017), children who are grade sixth and seventh are expected to acquire all fundamental movement skill and they are expected to do these movements in various environment. When we consider students mean score separately, they were placed in emerging level, some of them were in acquired level and none of them were proficient in any skill. Our curriculum does expect that there should be some difference among sixth grade's motor competence and seventh grade's motor competence (MoNE, 2017). However, the difference between two grades is only three points in this study and many students had not met curriculum expectation criteria and these findings were supported by another study. Kozera (2017) indicated that 2.5% of fourth grade students and less than 50% of eighth grade students were met with expected criteria. This result might be that students who did not receive appropriate instruction and amount of practice thus, they could show delay of their motor ability (Lubans et.al, 2010). They received limited amount and appropriate practice during the class or they may be not participated in physical activity both during school time and after school. Furthermore, the number of students in the class and in the school might effect on students amount of practice. Perhaps, sports equipment of school for physical education lesson was limited and students did not enough practice any kind of skills. Another reason can be that the sports clubs and school lectures' qualities were not enough to develop children's motor competence or get them reach the curriculum expectation criteria. The teachers, trainer and instructors should have high content knowledge to give them appropriate practice for improving motor competence of children. These different variables might be impact on children motor competence. Parents, school administrators or coaches should

consider these variables and should monitor children's improvement based on physical education curriculum.

Boys had better motor score than girls. The highest score in balance both gender boys and girls. The lowest score of girls in object control, the lowest score of boys in locomotor. Some studies support these findings, boys had better motor competence than girls (Rudisill & Mahar, 1993), they did not find any gender difference in balance skill (Kalaja, Jaakkola & Liukkonen, 2010) and lowest object control skill for girls (Barnett, Ridgers & Salmon, 2014) and boys had positive correlation of object control and better score than girls (Barnett et. al., 2009; Baret, 2016). However, other studies revealed that not accuracy evidence with balance for female (Baret, 2016), boys shows low competency in object control skills (Hardy, Reinten-Reynolds, Espinel, Zask & Okely, 2012), there is no gender difference in locomotor skill performance either childhood (ten years) or adolescence (sixteen years) (Barnett, Van Beurden, Morgan, Brooks & Beard, 2010) or females had better locomotor skills compared to males (Barnett, 2009). In conclusion, there was not an evident result in gender difference.

Lubans and colleagues (2010) supported the our findings, only half of the children who are between 9-12 years old showed proficiency throwing task (Lubans et. al., 2010) most of fourth grade (Baret, 2016) and also child ten years old and adolescent sixteen years old (Barnett et.al., 2010).

Students showed the lowest score in crossover, gallop, skipping, overhand throw and strike with a stick in our study. Especially, they were struggled with doing gallop, overhand throw and strike with a stick. During the overhand throw and strike with a stick tasks, many of them did not rotation, did not weight transfer, did not swing movement and did strict leg movement to throw the ball or strike the ball. Strike with a stick might be unfamiliar for children and adolescents as well. Because of that baseball are not popular and tennis is not common sports in Turkey. These might be the reason that they were struggled with them. However, others skills such as overhand throw, galloping, crossover are familiar and perhaps students might not did practice these skills in their lecture or sports club in which they were participate.

Students were good at balance movement which were balance walk forward and lift and lower movement. It can be concluded that more studies should be done and include different variables, such as opportunities, socio-economic status, cultural effect, infrastructure of the school, can influence these locomotor, object control and balance and total motor competence result. Furthermore, more detailed studies with the qualitative method should be done to understand these differences.

5.2 Relationship among PLAYself, PLAYinventory, PLAYfun

Findings revealed that there was a statistically significant correlation among psychological domain (PLAYself) and behavioral domain (PLAYinventory) score. Physical domain (PLAYfun) score had no statistically significant correlation to PLAYinventory and PLAYself.

Physical literacy is holistic approach and it is expected that children having high self-efficacy should participate in different kind of physical activities and different kind of settings and have good motor competence skill to do all these kind of skills. Among psychological domain and behavioral domain's correlation were supported by some studies, total physical activity level (Poitras et. al., 2016) and high daily physical activity (Meester et. al., 2016) was associated with psychological and cognitive indicators. Motivation, confidence, knowledge and understanding were negatively sedentary behavior (Sauder, 2018). However, it was expected that motor competence of children and physical activity level of children should have positive relationship in youth and adolescents (Barett, 2016; Luban et. al., 2010) Furthermore, Barett (2016) indicated that there were a positive relationship between children's time in physical activity and gross motor competency (Barett, 2016) perceived object control skill (Barnett et.al., 2014), locomotor skill (Cohen, Mogan, Plotikoff, Callister & Lubans, 2014) was positive associated with MVPA and also perceived motor competence was associated with one aspect of fundamental motor skill (Barnett et.al., 2014; Luban et. al., 2010) and moderate relationship between perceived motor competence and actual motor competence (Robinson, 2010). Another study was done by Stodden and colleagues (2012) indicated that less skilled children demonstrated low motor competence level and difficulty while doing the

task (Stodden et. al., 2012). It might be that PLAYself and PLAYinventory are questionnaires which are completed by students and there is no way check whether it shows the real situations completely. Furthermore, PLAYinventory is a list and has different kind of physical activities, sports. If students participated in these activities out of school, just did a mark the activities. However, it does not show frequencies, times how long they participated in, when they participated in and when they left it and whether students participated in that activity out of school. These can be limitations and might not show the real situations. PLAYfun is a motor competency test which is filled by a researcher. Perhaps students had no any experience such tests and these factors can make pressure on them. Another reason might be that students had too much expectation from themselves because of high self-efficacy and students though they participated in various physical activities, however, in reality they did not. Objective measurements of physical activity, different kind of valid instruments might be used to support or compare these results.

5.3 Gender Difference among PLAYself, PLAYinventory, PLAYfun

There was statistically significant difference in physical domain (PLAYfun) mean score of boys and girls. However, there was no statistically significant difference in the psychological domain (PLAYself) mean score of boys and girls and in the behavioral domain (PLAYinventory) mean score of boys and girls. Their motivation, confidence, knowledge and understanding toward physical activity and sport were the same and their physical activity participation was the same level. Generally, boys can be more competitive, more active in break time or after school. They could tend to be more involved in sports because of the cultural factors. For instance, football is popular in Turkey and almost all male are fun of some football clubs. Thus, these can impact on physical activity participations in childhood and better motor competence. The findings were supported by current studies, boys showed significantly better motor competence score than girls (Barnette et. al., 2009), at all age level (Kalaja et.al., 2010) and demonstrated more proficient motor skills (Robinson, 2010; Rudisill & Mahar, 1993), more physically active (Crocker et.al., 2000). The reason for having high self-efficacy among the girls might be that

they have too much expectation from themselves. However, recent studies, boys reported more competent themselves and enjoyment in physical activity (Kalaja et. al., 2010; Kozera, 2017) and a significant better level of MVPA and more active than girls (Barnett et. al., 2014). They demonstrated also higher perceived physical competence than girls (Robinson, 2010; Rudisill & Mahar, 1993).

In conclusion, girls felt better to participate in physical activity and motivate to participate in any kind of activities. Teachers should be aware of the real situation whether there is a difference or not between gender and students. Teachers should provide amount of information about physical activity to them and improve their knowledge and get them to aware about physical activities and sports. To understand these results, different instruments can be used to support or compare to results.

5.4 Grade Difference among PLAYself, PLAYinventory, PLAYfun

The result indicated that there was not statistically significant difference in the PLAYfun mean score of sixth grade and PLAYfun mean score of seventh grade. There was no statistically significant among the PLAYself mean score of sixth grade and PLAYself mean score of seventh grade. Moreover, there was no statistically significant among the PLAYinventory mean score of sixth grade and PLAYinventory mean score of seventh grade.

The findings indicated that sixth and seventh-grade children had almost the same score. It means that they had same motivation, confidence knowledge and understanding toward physical activity and sport. These results can be that there is only one year between sixth and seventh grade thus it is not too much difference expected and furthermore, students could have begun the school one year later when they started school thus, some students might be the same age in sixth and seventh grade. However, these different between grades were different from both the literature and curriculum. According to MONE (2017), regular physical activity and movement concepts, principles and related life skills should be better when grade increase. According to Barrett (2016), there was a positive relationship between age and fundamental motor skill components object control, locomotor and stability (Barrett, 2016). Furthermore, when age increased, lower-body competence increases

(Rudisill & Mahar, 1993). Further, they participated in physical activity in the same level and their movement vocabulary was almost the same. One possible explanation might be that their socio-economic level was same thus generally they could participate in the same physical activities and sports. Students should be provided amount of practice and instructions in different settings to learn different kinds of skills. Moreover, teachers and parents should be aware of the curriculum expectations and difference between sixth and seventh grade. When aged increasing, motor competence should be higher. Thus, appropriate and amount of enough instructions should be provided by teachers and trainers.

5.5 Implication of the Study

Policy maker and municipality should consider developing infrastructure of sports and physical activity areas. Children participated in swimming class because of the fact that they have facility to reach swimming pools therefore, it can help and encourage both children, adolescents and adults to participate in various activities.

The quality of lecture, teachers' knowledge, infrastructure of schools, adequate and enough equipment should be reconsidered and reinvestigated. Because, motor competence of participants were determined in emerging level, however, they were expected to have better motor competence score because they were sixth and seventh-grade students thus, they have already known these skills and were expected to demonstrate various environment and different physical activity area. Further, there must be difference between grades however, these results were not expected

Physical literacy perception of teachers should be investigated by school administers whether they give a lecture to their class holistically or not. Physical literacy is a holistic approach. If person is physically literate, s/he should have high self-efficacy, motivation, knowledge, motor competence, physical activity participation. However, the results showed that participants had not enough motor competence.

The quality of physical activity or sports clubs where they participate in should be investigated by school administers, teachers, coaches, parents. Students

reported that they participated in various physical activities and their expectation very high from themselves however, their actual performance was not as high as expected.

Teachers and parents should encourage children to attend different physical activities in various settings. There is a gender difference among sports participation. Boys participated in soccer, basketball, videogames, and girls participated in volleyball, dance. These give them early specialization and develop children unilaterally. These outcomes have numerous disadvantages for children physical activity participation and lifelong participation.

5.6 Recommendation for Future Research

Future research on physical literacy should;

- Increase the number of participant to deeply analyze what and to generalize the findings, and investigate PL of students from other grades in order to examine PL differences among grade and gender.
- Add other grades (fifth and eighth) to determine Physical literacy level of students. Fifth and eighth grades can be added for more information and for understanding the difference among grades and gender.
- Investigate PL of students from private schools. Private schools students might have more opportunities to participate in sports. They could have gymnasium, enough to equipment while doing physical activity and sports. They can have better motor competence or PL.
- Examine PL of students from other cities in Turkey. The results of physical activity participation might be different because of geographical location. Places where have more opportunities for people participating in water, on ice, on snow activities might show different results.
- Prefer to use objective assessment tools to examine PL of students. For instance, pedometer, accelerometer might be used to support PLAYinventory findings. Because behavioral domain, instrument has some limitation. There is no information frequency, when they participated and how long they

participated. To understand whether participants are really active or not, such measurements can be added to further studies.

- Should determine the correlation among body mass index (BMI), waist size and PI of students.
- Use different research methods such as qualitative research method or mix method to examine students' perception towards their motor competence, physical literacy and physical activity. Students provide detailed information why they have high expectation from themselves or what they think about their motor competence performance.
- Use others PLAYtools instruments (PLAYparents and PLAYcoach) (Sport for life, 2014) to understand more holistic the situations and to compare how teachers see the students and how parents see their child.
- Examine the effects of the teachers on students' physical literacy level. To understand whether students are provided enough amounts of practice and instructors during the lessons, during the school and out of the school when they participate in some course in school.

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APPENDICES

A: HUMAN SUBJECTS ETHICS COMMITTEE PERMISSIONS

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

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02 OCAK 2018

Konu: Değerlendirme Sonucu

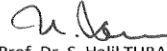
Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)


İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu


Sayın Yrd.Doç.Dr. Irmak Hürmeriç ALTUNSÖZ;


Danışmanlığımı yaptığımız Hakan TAŞ'ın “ **Ortaokul Öğrencilerinin Bedensel Okuryazarlıklarının İncelenmesi**” başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülerek gerekli onay **2017-EGT-222** protokol numarası ile **05.02.2018-28.09.2018** tarihleri arasında geçerli olmak üzere verilmiştir.

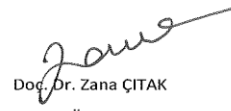
Bilgilerinize saygılarımla sunarım.

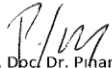

Prof. Dr. Ş. Halil TURAN
Başkan V

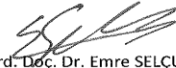

Prof. Dr. Ayhan SOL
Üye


Prof. Dr. Ayhan Gürbüz DEMİR
Üye


Doç. Dr. Yaşar KONDAKÇI
Üye


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Sayı: 28620810/426

08 AĞUSTOS 2018

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu


Sayın Dr. Öğretim Üyesi İrmak Hürmeriç ALTUNSÖZ

Danışmanlığını yaptığınız yüksek lisans öğrencisi Hakan TAŞ'ın "*Ortaokul Öğrencilerinin bedensel Okuryazarlıklarının İncelenmesi*" başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülerek gerekli onay 2017-EGT-222 protokol numarası ile 08.08.2018 - 30.08.2019 tarihleri arasında geçerli olmak üzere verilmiştir.

Bilgilerinize saygılarımla sunarım.


Prof. Dr. Ş. Halil TURAN
Başkan V


Prof. Dr. Ayhan SOL
Üye


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Doç. Dr. Zana ÇITAK
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Doç. Dr. Emre SELÇUK
Üye


Dr. Öğr. Üyesi Pınar KAYGAN
Üye

B: CONSENT LETTERS OF MINISTRY OF NATIONAL EDUCATION

T.C.
ANKARA VALİLİĞİ
Milli Eğitim Müdürlüğü

16.03.2018

Sayı : 14588481-605.99-E.5529757
Konu : Araştırma İzni

ORTA DOĞU TEKNİK ÜNİVERSİTESİNE
(Öğrenci İşleri Daire Başkanlığı)

İlgi: a) MEB Yenilik ve Eğitim Teknolojileri Genel Müdürlüğünün 2017/25 nolu Genelgesi.
b) 06/03/2018 Tarihli ve E.1191 sayılı yazınız.

Üniversiteniz Beden Eğitimi ve Spor Bölümü yüksek lisans öğrencisi Hakan TAŞ'ın "Ortaokul Öğrencilerinin Bedensel Okuryazarlıklarının İncelenmesi" konulu tez çalışması kapsamında uygulama talebi Müdürlüğümüzce uygun görülmüş ve uygulamanın yapılacağı İlçe Milli Eğitim Müdürlüğüne bilgi verilmiştir.

Görüşme formunun (5 sayfa) araştırmacı tarafından uygulama yapılacak sayıda çoğaltılması ve çalışmanın bitiminde bir örneğinin (cd ortamında) Müdürlüğümüz Strateji Geliştirme (1) Şubesine gönderilmesini rica ederim.

Vefa BARDAKCI
Vali a.
Milli Eğitim Müdürü

Güvenli Elektronik İmza
Asli ile Aynıdır.
16.03/2018

20.03.2018-5542

Konya yolu Başkent Öğretmen Evi arkası Beşevler ANKARA
e-posta: istatistik06@meb.gov.tr

Ayrıntılı bilgi için
Tel: (0 312) 221 02 17/135-134

Bu evrak güvenli elektronik imza ile imzalanmıştır. <https://evraksorgu.meb.gov.tr> adresinden 0cd1-6f69-343c-8316-9d28 kodu ile teyit edilebilir.



T.C.
ANKARA VALİLİĞİ
Milli Eğitim Müdürlüğü

Sayı : 14588481-605.99-E.23787246
Konu : Araştırma İzni

10.12.2018

ORTA DOĞU TEKNİK ÜNİVERSİTESİNE
(Öğrenci İşleri Daire Başkanlığı)

İlgi: a) MEB Yenilik ve Eğitim Teknolojileri Genel Müdürlüğünün 2017/25 nolu Genelgesi.
b) Bila tarihli ve E.57 sayılı yazınız.

Üniversiteniz Beden Eğitimi ve Spor Bölümü yüksek lisans öğrencisi Hakan TAŞ'ın "**Ortaokul Öğrencilerinin Bedensel Okuryazarlıklarının İncelenmesi**" konulu tez çalışması kapsamında uygulama talebi Müdürlüğümüzce uygun görülmüş ve uygulamanın yapılacağı İlçe Milli Eğitim Müdürlüğüne bilgi verilmiştir.

Görüşme formunun (4 sayfa) araştırmacı tarafından uygulama yapılacak sayıda çoğaltılması ve çalışmanın bitiminde bir örneğinin (cd ortamında) Müdürlüğümüz Strateji Geliştirme (1) Şubesine gönderilmesini rica ederim.

Turan AKPINAR
Vali a.
Milli Eğitim Müdürü

Güvenli Elektronik İmza
Aslı ile Aynıdır.

10.12.2018

Adres: Alparslan Türkeş cad. Emniyet Mah.4/A
Yenimahalle/ANKARA
Elektronik Ağ: ankara.meb.gov.tr
e-posta: istatistik06@meb.gov.tr

Bilgi için: Ayşe ARDA
Tel: 0 (312) 212 36 00
Faks: 0 (312) 221 02 16

Bu evrak güvenli elektronik imza ile imzalanmıştır. <https://evraksorgu.meb.gov.tr> adresinden 1772-fa99-3445-aec8-eeff kodu ile teyit edilebilir.

C: PARENT CONSENT LETTER

Veli Onay Mektubu

Sevgili Veli,

Bu çalışma Orta Doğu Teknik Üniversitesi Beden Eğitimi ve Spor Bölümü öğretim elemanlarından Doç. Dr. Irmak Hürmeriç Altunsöz ve Yüksek Lisans öğrencisi Hakan Taş tarafından yürütülmektedir.

Bu çalışmanın amacı nedir?

Bu çalışmanın amacı, öğrencilerin bedensel okuryazarlık (Physical literacy) konusunda algılarının belirlenmesi, son 12 ayda katıldıkları sportif veya rekreatif aktivitelerin belirlenmesi ve temel hareket becerilerinin ölçülmesidir.

Çocuğunuzun katılımcı olarak ne yapmasını istiyoruz?

Bu amaç doğrultusunda, çocuğunuzun bedensel okuryazarlık algısını ve son 12 ayda katıldıkları sportif veya rekreatif aktivitelerini ölçen iki adet anketi cevaplamasını isteyeceğiz ve cevaplarını anketleri geri alarak toplayacağız. Aynı zamanda temel hareket becerilerini ölçmek için 20 dakikalık motor beceri testine katılmalarını isteyeceğiz. Sizden çocuğunuzun katılımcı olmasıyla ilgili izin istediğimiz gibi, çalışmaya başlamadan çocuğunuzdan da sözlü olarak katılımıyla ilgili rızası mutlaka alınacak.

Çalışmada elde edilen bilgiler;

Çocuğunuzun dolduracağı anketteki bilgiler veya test sonucunda elde ettiği skorlar gizli tutulacak ve bu veriler sadece bilimsel araştırma amacıyla kullanılacaktır. Katılımcıların isimleri kesinlikle çalışmada kullanılmayacak ve kimlik bilgileri kimseyle paylaşılmayacaktır.

Çocuğunuz ya da siz çalışmayı yarıda kesmek isterseniz ne yapmalısınız?

Katılım sırasında sorulan sorulardan ya da hareket beceri testi uygulaması ile ilgili başka bir nedenden ötürü çocuğunuz kendisini rahatsız hissettiğini belirtirse, ya da kendi belirtmese de araştırmacı çocuğun rahatsız olduğunu öngörürse, çalışmaya anketler ve test tamamlanmadan derhal son verilecektir.

Bu çalışmayla ilgili daha fazla bilgi almak isterseniz:

Çalışmaya katılımınızın sonrasında, bu çalışmayla ilgili sorularınız yazılı biçimde cevaplandırılacaktır. Çalışma hakkında daha fazla bilgi almak için Beden Eğitimi ve Spor Bölümü öğretim elemanlarından Doç. Dr. Irmak Hürmeriç Altunsöz ile (e-posta: hurmeric@metu.edu.tr) veya Yüksek Lisans Öğrencisi Hakan Taş (e-posta: hkntas92@gmail.com) ile iletişim kurabilirsiniz. Bu çalışmaya katılımınız için şimdiden teşekkür ederiz.

Yukarıdaki bilgileri okudum ve çocuğumun bu çalışmada yer almasını onaylıyorum
(Lütfen alttaki iki seçenekten birini işaretleyiniz.

**Çalışmaya katılmasını Evet onaylıyorum _____ Hayır,
onaylamıyorum _____**

Hareket Gelişim testini videoya çekebilir miyiz? Evet _____ Hayır _____

Veli'nin adı-soyadı: _____ Bugünün

Tarihi: _____

Çocuğun adı soyadı ve doğum tarihi: _____

D: INFORMED CONSENT FORM

Saygılarımızla, Irmak Hürmeriç Altunsöz & Hakan Taş

Araştırmaya Gönüllü Katılım Formu

Bu çalışma Orta Doğu Teknik Üniversitesi Beden Eğitimi ve Spor Bölümü öğretim elemanlarından Y. Doç. Dr. Irmak Hürmeriç Altunsöz ve yüksek lisans öğrencisi Hakan Taş tarafından yürütülmektedir. Bu form sizi araştırma koşulları hakkında bilgilendirmek için hazırlanmıştır.

Çalışmanın Amacı Nedir? Bu çalışmanın amacı, öğrencilerin bedensel okuryazarlık (Physical literacy) konusunda algılarının belirlenmesi, son 12 ayda katıldıkları sportif veya rekreatif aktivitelerin belirlenmesi ve temel hareket becerilerinin ölçülmesidir. Araştırmaya katılmayı kabul ederseniz, sizden beklenen 22 soruluk bir anketi ve son 12 aydaki sportif ve rekreatif aktivitelerinizi belirlemeyi hedefleyen bir formu doldurmanızdır. Aynı zamanda 20 dakika süren hareket beceri testine katılımınız beklenmektedir. Bu çalışmaya katılım ortalama olarak 25-30 dakika sürmektedir.

Bize Nasıl Yardımcı Olmanızı İsteyeceğiz? Çalışmada uygulanacak anketi kendi bedensel okuryazarlık ile ilgili algınızı ve son 12 aydaki sportif ve rekreatif aktivitelerinizi düşünerek doldurmanızı bekliyoruz. Hareket beceri testini verilecek yönergelere uygun olarak yapmanızı istiyoruz.

Sizden Topladığımız Bilgileri Nasıl Kullanacağız? Araştırmaya katılımınız tamamen gönüllülük temelinde olmalıdır. Ankette ve hareket beceri testinde sizden kimlik veya kurum belirleyici hiçbir bilgi istenmemektedir. Cevaplarınız ve test sonuçlarınız tamamıyla gizli tutulacak, sadece araştırmacılar tarafından değerlendirilecektir. Katılımcılardan elde edilecek bilgiler toplu halde değerlendirilecek ve bilimsel yayımlarda kullanılacaktır. Sağladığınız veriler gönüllü katılım formlarında toplanan kimlik bilgileri ile eşleştirilmeyecektir.

Katılımınızla ilgili bilmeniz gerekenler: Çalışmada kısa iki anket doldurmanız ve hareket beceri testine katılmanız istenmektedir ve çalışma hiçbir risk

içermemektedir. Katılım sırasında sorulardan veya beceri testinden ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz cevaplama işini ve testi yarıda bırakıp çıkmakta serbestsiniz. Böyle bir durumda çalışmayı uygulayan kişiye, çalışmadan çıkmak istediğinizi söylemek yeterli olacaktır. Çalışma sonunda, bu araştırmayla ilgili sorularınız cevaplanacaktır.

Araştırmayla ilgili daha fazla bilgi almak isterseniz: Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için Beden Eğitimi ve Spor Bölümü öğretim elemanlarından Y. Doç. Dr. Irmak Hürmeriç Altunsöz ile (e-posta: hurmeric@metu.edu.tr) veya Yüksek Lisans Öğrencisi Hakan Taş (e-posta: hkntas92@gmail.com) ile iletişim kurabilirsiniz. Bu çalışmaya katılımınız için şimdiden teşekkür ederiz.

Yukarıdaki bilgileri okudum ve bu çalışmaya tamamen gönüllü olarak katılıyorum. (Formu doldurup imzaladıktan sonra uygulayıcıya geri veriniz).

İsim Soyisim

Tarih

İmza

E: INSTRUMENTS

PLAYself

Öğrenci no: _____ Cinsiyet: *Kız* _____ *Erkek* _____ Yaş: _____

Boy: _____ Kilo: _____

En aktif olduğum mevsim (uygun olanı işaretleyin): O Yaz O Kış O Her ikisinde de aktif

Spor yapma ve fiziksel aktivitelerde ne kadar iyisin?	Hiç denemedim	İyi değil	Orta	Çok iyi	Mükemmel
1. Spor salonunda?					
2. Suda?					
3. Buzda?					
4. Karda?					
5. Açık alanda?					
6. Oyun alanında?					
Spor yapma ve fiziksel aktiviteler hakkında ne düşünüyorsunuz?	Hiç doğru değil	Genellikle doğru değil	Doğru	Çok Doğru	
7. Yeni bir beceri, spor veya fiziksel aktivite öğrenmem çok zamanımı almıyor					
8. Bence istediğim bütün spor ve fiziksel aktivitelere katılmak için yeterli beceriye sahibim					
9. Bence fiziksel olarak aktif olmak sağlığım ve zindeliğim için önemli					
10. Bence fiziksel olarak aktif olmak beni mutlu eder					
11. Bence seçtiğim herhangi bir spora/fiziksel aktiviteye katılabiliyorum					
12. Bedenim seçtiğim herhangi bir fiziksel aktiviteye katılmama izin verir					
13. Yeni bir spor veya fiziksel aktiviteyi denemekten endişelenirim					
14. Antrenörlerin veya Beden eğitimi öğretmenin kullandığı kelimeleri anlam					
15. Fiziksel aktiviteleri yaparken kendime güvenirim					
16. Yeni bir spor veya fiziksel aktiviteyi denemek için sabırsızlanırım					
17. Herhangi bir fiziksel aktiviteyi yaparken genellikle sınıfın en iyisiyim					
18. Becerilerim için alıştırmaya yapmaya ihtiyacım yok, ben doğuştan iyiyim					

Öğrenci no: _____ Cinsiyet: Kız ___ Erkek ___ Yaş: _____

Son 12 ayda serbest zamanlarında(okulda veya iş yerinde hariç) düzenli olarak etkinliklere/faaliyetlere katıldıysan kutunun içine işaret koy. (✓)

Ev işleri	Triatlon	Zumba
Tarla işleri	Bisiklet	Hentbol
Ev ödevleri	BMX	Cimnastik
Televizyon veya film izleme	Dağ bisikleti	Yoga
Müzik enstrümanı çalmak	Motokros	Judo
Kitap okuma	Duatlon	Bowling
El sanatları	Köpek gezdirmek	Karate
Facebook veya internet	Arazi yürüyüşü	Kaya veya duvar tırmanışları
Aktif video oyunları (Wii gibi)	Voleybol	Eskrim
Bilgisayar oyunu	Arazi koşusu	Güreş
Yüzme	Basketbol	Boks
Yüzme dersleri	Koşmak	Masa tenisi
Su kayağı	Jog atmak	Atletizm
Futbol	Yürüyüş	Dans
Sörf yapmak	Oryantring	Bahçe işleri
Senkronize yüzme	Elim sende oyunu	Bale
Kano	Halk oyunları	Vücut geliştirmek
Kürek çekmek	Scoter	Badminton
Körling	Park/oyun alanı	Tenis
Dalış	Binicilik/ata binme	Avcılık
Paten kayma	Dağ tırmanışı	Squash
Snowboard	İp atlama	Okçuluk
Kızakla kayma	Golf	Yelkencilik
Kaykay	Balık tutmak	Aikido
Diğer:	Diğer:	Diğer:
Diğer:	Diğer:	Diğer:
Diğer:	Diğer:	Diğer:
Diğer:	Diğer:	Diğer:



PLAYfun 7 yaş ve üstü çocuklar için tasarlanmıştır.

Katılımcının Adı: _____ Cinsiyet: Kız Erkek Yaş: _____

Çocuğun becerisini en iyi şekilde gösteren yeri işaretleyiniz. Eğer çocuğun özgüveni düşükse ya da her görev için komuta, mimiğe, açıklamaya ya da hareketi göstermeye gerek duyuluyorsa belirtiniz.

	YETKİNLİK		
	GELİŞİYOR		EDİNİLMİŞ
	BAŞLANGIÇ	GELİŞMEKTE OLAN	YETKİN UZMAN
1. Kare alanda koşu			
2. Huniye koşu ve geri gelme			
3. Koş, zıpla ve sonra 2 ayak üzerine inme			
4. Makas hareketi yapma			
5. Sekme			
6. Galop yapma			
7. Hoplama			
8. Zıplama			
9. Baş üstü atma			

10 Sopayla(beyzbol) Vurma					
11 Tek elle yakalama					
12 Elle sabit top sektirme ve ilerleme					
13 Topa ayak ile vurma					
14Ayakla ileri doğru top sürme					
15Öne doğru denge yürüyüşü (topuktan ayak ucuna)					
16Geriyeye doğru denge yürüyüşü (ayak ucundan topuğa)					
17Yüzüstü yere düşme ve geri kalkma					
18 Nesneyi (basketbol veya futbol topu) kaldırma ve indirme					

F: TURKISH SUMMARY/TÜRKÇE ÖZET

ORTAOKUL ÖĞRENCİLERİNİN BEDENSEL OKURYAZARLILIĞINI DEĞERLENDİRME

GİRİŞ

Fiziksel aktivite, enerji kullanarak iskelet kasları tarafından oluşturulan herhangi bir bedense hareket olarak tanımlanır. Fiziksel aktivite terimi egzersiz terimi ile aynı değildir. Egzersiz, fiziksel aktivitenin bir alt kategorisidir. Egzersiz yapılandırılmalıdır, planlanmalıdır, tekrarı olmalıdır ve genel sağlığı korumak veya geliştirmek için amaçlı olmalıdır (Caspersen, Powell, & Christenson, 1985; WHO, 2018).

Fiziksel aktivite, sağlıklı hayat için önemli bir faktördür. Sağlık ve yaşam kalitesini artırma; fiziksel aktivite tipi, yoğunluğu, miktarı ile ilişkili olduğu kanıtlanmıştır (Haskell et. al., 2007; Bloemers ve diğ., 2011). Dahası, fiziksel aktivite katılımı her bir yaş, cinsiyet, etnik köken ve sosyoekonomik statüler için geçerlidir (Tremblay et. al., 2011). Dünya Sağlık Örgütü (2018), düzenli fiziksel aktivitenin kasların güçlenmesi, kalp ve damar sağlığının güçlenmesi, kemikleri günlendirmesi, kalp hastalıklarını, inmeyi, diyabeti, çeşitli kanser hastalıkları ve depresyonu azalttığının göstermiştir. Reiner ve arkadaşları (2013), önerilen fiziksel aktivite düzeyine ulaşmanın bulaşıcı olmayan hastalıklar olan obezite ve diyabet gibi hastalıkları azaltmada önemli faktör olduğu ayrıca yüksek risk gruplarında ve farklı yaş gruplarında kalp sağlığını arttırdığı gözlemlenmiştir. (Reiner, Niermann, Jekauc & Woll, 2013). Çalışmalar, fit olmak ve yeterli fiziksel aktiviteye katılım %50 ölüm riskini veya hastalıkları ve erken ölümleri önlemekle ilişkili olduğunu göstermiştir

(Warburton, Nicol, & Bredin, 2006). Warburton ve arkadaşları (2006) fiziksel aktivite ile enerji harcama oranını haftalık 1000 kalorinin ölüm riskini %20 azalmakla ilişkilendirmiştir. Fakat düzenli fiziksel aktiviteye katılmamak ve yeterli fiziksel aktiviteye ulaşmamak birçok ülkenin önemli sorunlarından bir tanesidir (Warburton, Nicol, & Bredin, 2006).

Obezite, kalp ve damar sağlığı ile ilgili problemler gibi birçok kronik hastalığın sebebi aktif olmayan yaşam tarzıdır (Reiner ve diğ., 2013) ve fiziksel inaktivite ile ilişkilidir (Li, 2014). Dahası, Dünya Sağlık Örgütü tarafından bulaşıcı olmayan hastalıklar, sağlıksız yaşam tarzı, yeme bozuklukları ve yetersiz fiziksel aktivite seviyesi olarak tanımlanan kronik hastalıklar olarak tanımlamıştır (Reiner ve diğ., 2012). Bunlara ek olarak, fiziksel inaktivite her yıl ortalama 3,2 milyon insanın ölümüne neden olan risk faktörü olarak tanımlanmaktadır (Li,2014).

Fiziksel aktiviteyi ve sağlıklı yaşam tarzını arttırmak için, çocuklar ve yetişkinlere öneriler verilmiştir. Dünya Sağlık Örgütüne göre (2018), 5- 17 yaş arası çocuklar ve yetişkinler günlük en az 60 dakika orta ve şiddetli fiziksel aktivite yapılması önerilmektedir ve haftada en az üç gün kuvvet egzersizleri yapılmasını önerilmektedir. Kanada çocuklar ve gençler için fiziksel aktivite rehberinde, kişilerin en uygun büyüme, gelişim, olgunlaşma ve psikolojik sağlık için en az 60 dakika orta ve şiddetli fiziksel aktivite yapılmasını önermektedir (Taylor & Kolen, 2016). Amerikan spor hekimliği koleji, yetişkinlerin her gün en az 30 dakika fiziksel aktivite yapmasını önermektedir (Heskell ve diğ., 2007; Savcı, ve diğ., 2006). Ayrıca, 18 ve 64 yaş arası yetişkinlerin haftada 150 dakika orta ve şiddetli fiziksel aktivite yapılması veya 75 dakika şiddetli egzersiz yapması önerilmektedir. 65 yaş üstü olanlar için, yetişkinlerle aynı fiziksel aktivite önerileri verilmiştir. Fiziksel aktiviteler en az on dakika olmalıdır. Yürümek, tavsiye edilen fiziksel aktivite seviyesine ulaşmada hem kolay hem de etkili yöntemdir. Günlük fiziksel aktivite seviyesine ulaşmak için 10000 adım yetişkinler için, 12000 adım gençler için önerilmektedir ve bu sekiz kilometre ve ortalama yarım saatte 300 - 400 kalori demektir (Choi B, Pak & Choi J,2007).

Fakat birçok çalışmada çocukların ve yetişkinlerin bu kriterlere ulaşamadığı görülmektedir. Kanada'da birçok yetişkin aktif olmayan yaşam tarzında yaşamaktadır (%68 Erkek, %69 Kadın) ve sadece yetişkinlerin %15'i haftalık 150 dakikalık aktiviteye uymaktadır (Colley ve diğ., 2011). Amerika'da, 6-11 yaş arası çocukların yarısından azı (%42) fiziksel olarak aktiftir, yetişkinlerin sadece %5'i haftalık 150 dakikalık orta ve şiddetli fiziksel aktiviteyi yapmaktadır ayrıca yaş ilerledikçe fiziksel aktivitenin azaldığını göstermektedir (Tariano ve diğ., 2008). Aktif yaşam derneğine göre (2010), Türkiye'de yaşayanların %25'i tavsiye edilen fiziksel aktivite seviyesine ulaşmaktadır. Dahası, 15-19 yaş arası olan gençler en az aktif olan guruptur. Türkiye'de yapılan başka bir çalışma öğrencilerin %15'i fiziksel aktivite yapmıyor ve %68'i düşük fiziksel aktivite seviyesine sahip olduğunu göstermiştir ve sadece öğrencilerin %18'i yeterli fiziksel aktiviteye ulaşmaktadır (Savcı ve diğ., 2006).

Çocukların ve yetişkinlerin tavsiye edilen fiziksel aktivite seviyesine ulaşamaması sebebiyle, fiziksel inaktivite ve bazı kronik hastalıklar arasında direkt bir ilişki olduğu saptanmıştır. Ayrıca bunu etkileyen sebeplerin altında yatan mekanizmaları anlamak önemlidir (Stodden & Goodway, 2007). Bunun bir yolu, çocukların fiziksel aktiviteye katılmak için temel hareket becerilerini öğrenip öğrenmediğini incelemektir. Temel hareket becerileri; manipülatif (yakalama, atma), lokomotor (koşma, sekme) ve denge, fiziksel aktiviteye katılım için gerekli görülmektedir (Lubans ve diğ., 2010). Ayrıca, çocukluk yaşları bu becerileri öğrenmek için çok önemli dönemdir (Draper, Achmat, Forbes & Lambert, 2012). Fakat temel hareket becerileri, ilkel hareket becerileri gibi doğal olarak öğrenilemez, öğrenilmeleri için geri bildirim, pratik ve cesaretlendirme gerekir (Lubans ve diğ., 2010).

Sadece hareket yetkinliği sadece fiziksel aktiviteye katılım için yeterli olmadığı görülmüştür (Whitehead, 2010). Bedensel okuryazarlık, fiziksel aktiviteye hayat boyu katılım için önemli olduğu vurgulanmıştır. Beden kitle indeksi, kalp ve kan damarları dayanıklılık, algısal fiziksel yetkinlik diğer yararlar olarak tanımlanabilir (Tompsett, Burkett & Mckean, 2014). Balyi ve arkadaşlarına göre

(2013),bedensel okuryazarlılığın hem yüksek performans atletler için hem de hayat boyunca fiziksel aktiviteye katılım için önemli olduğunu vurgulamıştır. Bu yüzden kişinin bedensel okuryazarlılığını arttırmak çocuklar ve yetişkinler için önemli fırsatlar sunmaktadır. Dahası, yaş, beceri, boy, kilo sınırlamaksızın herkes bedensel okuryazar olabilirler (Bryant, Keegan, Morgan & Jones, 2017).

Bedensel okuryazarlık terimi 2001 yılında küresel obeziteye ve sedanter yaşama karşı yardım amaçlı kurulmuştur (Tompsett, Burkett & Mckean, 2014) ve birçok ülkedeki bilimsel makalelerde yer almıştır (Edwards ve diğ., 2017). ‘Bedensel okuryazarlık’ terimi bir kişinin fiziksel aktiviteye ömür boyu katılım kapasitesi olarak kabul edilir (Longmuir & Tremplay, 2016). Edward ve arkadaşları (2017), makalelerde %70 ‘Whiteheadian’ perspektifinin yer aldığını rapor etmiştir. Whitehead’e göre bedensel okuryazarlık hareket yeterliliğini geliştirmeye, motivasyon, özgüveni arttıran psikolojik faktörleri geliştirmeye, ömür boyu fiziksel aktiviteye katılımı geliştirmeyi destekleyen bir kavram olarak kabul edilir (Whitehead, 2010) ve bedensel okuryazarlık, fiziksel aktiviteye, beden eğitime, spora ve fiziksel olarak aktif hayat tarzına katılım ve uzmanlıkta temel taşır (Kiez, 2015; Edwards ve diğ., 2017).

1.1 Çalışmanın amacı

Çalışmanın ana amacı, (a) altı ve yedinci sınıfların bedensel okuryazarlık seviyelerini belirleme ve (b) bedensel okuryazarlık alt alanlarında (fiziksel alan, psikolojik alan ve davranışsal alan) ilişki olup olmadığını araştırmaktır. Çalışmanın diğer amacı ise çalışmaya katılan öğrencilerin bedensel okuryazarlıkları arasındaki cinsiyet ve sınıf farklılığını belirlemektir.

1.2 Araştırma soruları

1- Ortaokul öğrencilerinin bedensel okuryazarlık seviyeleri nedir?

Alt sorular;

- a. Ortaokul öğrencilerinin özgüven, motivasyon, bilgi ve anlama seviyeleri nedir?
- b. Ortaokul öğrencilerinin fiziksel aktivite davranışı nedir?

c. Ortaokul öğrencilerinin hareket yetkinlik seviyesi nedir?

2- Ortaokul öğrencilerinin Bedensel okuryazarlık alt başlıkları (hareket yetkinliği, psikolojik alan ve davranışsal alan) altında bir ilişki var mı?

Alt sorular;

- a. Hareket yetkinliği ve psikolojik alan arasında ilişki var mı?
- b. Hareket yetkinliği ve davranışsal alan arasında ilişki var mı?
- c. Psikolojik alan ve davranışsal alan arasında ilişki var mı?

3- Ortaokul öğrencileri sınıflarının bedensel okuryazarlık seviyelerinde farkı var mı?

Alt sorular;

- a. Ortaokul öğrencileri sınıflarının hareket yetkinliğinde fark var mı?
- b. Ortaokul öğrencileri sınıflarının davranışsal alanda fark var mı?
- c. Ortaokul öğrencileri sınıflarının psikoloji alanda fark var mı?

4- Ortaokul öğrencilerinin bedensel okuryazarlık seviyelerinde cinsiyet farkı var mı?

Alt sorular;

- a. Ortaokul öğrencilerinin hareket yetkinliğinde cinsiyet farkı var mı?
- b. Ortaokul öğrencilerinin davranışsal alanda cinsiyet farkı var mı?
- c. Ortaokul öğrencilerinin psikolojik alanda cinsiyet farkı var mı?

1.3 Çalışmanın önemi

Fiziksel aktif olmama dünyada hem ekonomik hem de insan hayatı için ciddi problemdir (Li, 2014). Bu tür ciddi problemleri azaltmak ve önlemek için sağlıklı yaşam biçimi artırılmalıdır (Bloemers ve diğ., 2011). Çocuklarda fiziksel aktiviteyi arttırmak ve temel hareket becerilerinin gelişmesine şans tanımak bunun bir yoludur.

Fiziksel aktivite ve temel hareket becerileri arasındaki pozitif ilişki çalışmalarda gösterilmiştir yani bir kişinin hareket becerisi ne kadar iyi ise fiziksel aktiviteye katılımı da o kadar çok olacaktır. Fakat temel hareket becerileri, ilkel hareket becerileri gibi kendiliğinden gelişmediği raporlanmıştır (Stodden & Goodway, 2007).

Bedensel okuryazarlık, hareket yetkinliğini, psikolojik faktörleri ve fiziksel aktivite katılımının geliştirilmesini destekler (Whitehead, 2010) ve fiziksel aktif yaşam tarzının önemli elementidir (Kiez, 2015).

Ancak, Türkiye’de bedensel okuryazarlık alanında ve çocukların bedensel okuryazarlıklarını değerlendirme konusunda bilgi eksikliği vardır. Aynı zamanda Türkiye de bu alanda çalışma yapılmış makale sayısı çok azdır bu nedenle bilgi eksikliği bulunmaktadır. Bu çalışma, çocukların bedensel okuryazarlıklarının değerlendirilmesinde önemli bir bilgi kaynağı olmakla birlikte çocukların bedensel okuryazarlıklarını nasıl ölçüleceği konusunda da alan yazına katkı verecektir.

YÖNTEM

Bu çalışmada, nicel yöntem ile kesitsel yöntem kullanılmıştır.

Örneklem

Çalışma, Çankaya ve Keçiören ilçelerinde, altıncı ve yedinci sınıflardan 158 katılımcı Hatice Hilmi Aksoy, Tarhuncu Ahmet Paşa ve Ziraat Mühendisleri devlet okullarından katılmıştır. Beden Eğitimi müfredatına göre, altıncı sınıf ve yedinci sınıf öğrencileri bireysel ve takım sporların da temel hareket becerilerini sergilemesi beklenmektedir (MEB,2017). Bu sebepten dolayı bu sınıflar seçilmiştir. Çalışmada, amaçlı örneklem kullanılmıştır. Tablo 3,1’de katılımcıların demografik özellikleri ayrıntılı olarak gösterilmiştir.

Tablo 3,1

Katılımcıların demografik özellikleri

	<i>N</i>	<i>Myaş</i>	<i>Mboy</i>	<i>Mkilo</i>
6. Sınıf	88	11.39	150.31	42.40
7. Sınıf	70	12.41	156.27	44.66
Kızlar	82	11.78	152.07	41.98
Erkekler	76	11.92	152.82	44.95

PLAY veri toplama aracı

Bu çalışmada, ‘Gençler için Bedensel Okuryazarlık Ölçme’ (The Physical Literacy for Youth) ölçme araçları (PLAYself, PLAYinventory, PLAYfun) kullanılmıştır. PLAYfun, hareket yetkinlik testi, öğrencilerinin temel hareket becerilerini ölçen, PLAYself, öğrencilerin bedensel okuryazarlık alanında psikolojik boyutunu, PLAYinventory ise davranışsal boyutu olan öğrencilerin son 1 yıl içerisinde okul dışında düzenli olarak katıldığı fiziksel aktiviteleri raporlamaları için geliştirilmiştir (Sport for life, 2014). Bu veri toplama araçları, 7 ve daha büyük kişiler için uygundur.

Veri toplama araçlarının adaptasyon süreci

PLAYtools veri toplama araçları İngilizce olduğu için adaptasyon işlemi yapılmıştır. İlk olarak veri toplama aracını geliştiren araştırmacıdan izin alınmıştır. Daha sonra bir dil bilimci ve iki beden eğitimi uzmanı tarafından İngilizceden Türkçeye çevrilmiştir. Bu üç ayrı Türkçe çeviri uygun şekillerde birleştirilmiştir. Birleştirilen Türkçe çeviriler bir başka dil bilimci tarafından tekrar İngilizceye çevrilmiştir. Daha sonra en son İngilizce çevirisi ve orijinali veri toplama araçları karşılaştırılmıştır ve uygun olanlar yazılmıştır.

Pilot çalışma

Pilot çalışma, Hilmi Hatice Aksoy Ortaokulunda 2018 Mayıs ayında yapılmıştır. Çalışmaya bütün altıncı ve yedinci sınıfların katılması istenmiştir. Toplam 86 öğrenci (51 erkek, 35 kız) çalışmaya katılmıştır.

Veri toplama araçlarının geçerlilik ve güvenilirliği

İlk olarak içerik uygunluğu iki beden eğitimi uzmanı tarafından test edilmiştir. Ayrıca, PLAYself için doğrulayıcı faktör analizi yapılmıştır. Sonuçlar veri toplama aracının Türkiye’de kullanım için uygun olduğunu göstermiştir ($\chi^2 = 78.74$, $df = 51$, $\chi^2/df = 1.54$; GFI = 0.87, CFI = 0.90, RMSEA = 0.08). PLAYfun (hareket testi) notlaması için eğitim gerçekleştirilmiştir. Hareket testi içerisindeki her bir görev teker teker analiz edilmiştir. Resmi videoları incelenmiştir toplamda bu eğitim iki saat sürmüştür. Ayrıca, motor test sonuçları için puanlayıcılar arası ve puanlayıcı atası güvenilirlik analizi yapılmıştır.

Pilot çalışmanın sonuçları

Altıncı sınıf ve yedinci sınıflardan 86 katılımcı (M yaş = 12.27, M boy = 158,98, M kilo = 47.38) çalışmaya katılmıştır. Psikolojik alan sonuçlarına göre, erkekler ve kızlar toplam 70.25 puan almışlardır. Bu, katılımcıların yüksek öz yeterlilik ve fiziksel aktiviteye katılım için yüksek motivasyona sahip olduğunu göstermektedir. Çevresel katılım skorlarına göre öğrencilerin toplam 62 puan aldığını, ikinci bölümden ise 78,5 puan aldıklarını göstermiştir. Sonuçların cinsiyete göre ayrıldığında, erkekler ($M = 3.18$, $SD = 0,7$) ve kızların ($M = 3.08$, $SD = 0.75$) neredeyse aynı puanları aldığı görülmektedir. Fakat kızlar ($M = 3.27$, $SD = 1.16$) erkeklerden ($M = 2.99$, $SD = 1.87$) daha yüksek çevresel katılım puanı aldığı görülmektedir.

Davranışsal alan sonuçlarına göre, 38 öğrenci futbola katıldığını bisiklet (42), basketbol (29), voleybol (26), yürüme (44), koşma (31), yüzme (24) sporuna katıldığını göstermiştir. Genellikle erkekler, futbol (33), bisiklet (29), basketbol (24), yürümeye (29) katıldıklarını raporlamıştır. Kızlar voleybol (18), yürüme (15), dans (13), bisiklet (13) ve paten (13)’ne katıldıklarını raporlamışlardır.

Hareket testi sonuçlarına göre, katılımcılar hareket testi kriterlerin de gelişmekte olan (26 - 50 puan) alanda oldukları belirtilmiştir. Fakat toplam skorları lokomotor, nesne kontrolü ve denge olarak üçe ayırdığımızda, en yüksek puanın dengede olduğu, en düşük puanın ise nesne kontrolünde olduğu gözlemlenmiştir. Erkeklerin kızlara göre daha yüksek puan aldığı görüşmüştür.

Veri analizi

Veri analizi, hem tanımlayıcı hem de çıkarımsal istatistik kullanılmıştır. Tanımlayıcı istatistik ile ortalamalar ve standart sapma gösterilmiştir. Çıkarımsal istatistikle, bedensel okuryazarlığın alt gruplarında ilişki olup olmadığı, cinsiyet ayrımı ve sınıf ayrımı olup olmadığına bakılmıştır. Analiz için, bağımsız t-test kullanılmış ve Pearson korelasyonu yapılmıştır. Alfa seviyesi. 05 olarak seçilmiştir.

SONUÇ

Çalışmanın amacı, ortaokul öğrencilerinin bedensel okuryazarlıklarının sınıf ve cinsiyet farkını ölçmektir. Bu bölümde, tanımlayıcı istatistik, ölçüm araçlar arası korelasyon, cinsiyet ve sınıf farkı açıklanmıştır.

Araştırma sorusu 1

Ortaokul öğrencilerinin bedensel okuryazarlık seviyesi nedir?

PLAYself sonuçlarına göre, katılımcıların 100 üzerinden 75,9 puan aldığını bu sonucun, öğrencilerin yüksek öz yeterliliğe sahip olduğunu ve fiziksel aktiviteye katılım için yüksek motivasyona sahip olduğu anlamına gelmektedir. Çevresel katılım puanları (spor ve aktivite yapmada ne kadar iyisin?) 100 üzerinden 67.6'dır. İkinci alanda ise (spor ve aktivite yapmada ne düşünüyorsun?) katılımcıların puanı 100 üzerinden 80'dir. Katılımcılar en az buzdaki aktivitelere katılmıştır, en çok açık havadaki aktivitelere katılmışlardır.

PLAYinventory sonuçlarına göre, 68 öğrenci aktif video oyunlarına (68) katılım yapmıştır, yüzme (68), futbol (71), paten kayma (55), bisiklet (93), voleybol (72), koşma (86), yürüme (87), basketbol (72) gibi sporlara katılmıştır.

PLAYfun sonuçlarına göre, katılımcıların ortalama puanları 37.96'dır. Bu sonuç, katılımcıların gelişmekte olan alanda (100 üzerinden 26-50 arası) olduğunu göstermektedir. Katılımcıların en yüksek aldığı puan denge beceridir, fakat lokomotor ve nesne kontrolü skorları neredeyse aynıdır. Hareket çeşitliliğine baktığımızda, katılımcılar en az puanı makas hareketinde, sekme hareketinde, galop yapma hareketinde, baş üstü atmada, sopayla vurmada ve topa vurmada almışlardır, en çok puanı ise öne doğru denge yürüyüşünde ve nesneyi indir ve kaldır hareketinde almışlardır.

Araştırma sorusu 2

Ortaokul öğrencilerinin Bedensel okuryazarlık alt başlıkları (hareket yetkinliği, psikolojik alan ve davranışsal alan) altında bir ilişki var mı?

Hareket yetkinliği, psikolojik alan ve davranışsal alanda pozitif bir korelasyon olup olmadığını anlamak için Pearson korelasyonu kullanılmıştır. Sonuçlara göre, psikolojik alan ve davranışsal alan arasında istatistiksel olarak anlamlı ilişki vardır ($r(156) = .383, p < .05$). Fakat diğer alanlarda istatistiksel olarak ilişki bulunamamıştır.

Araştırma sorusu 3

Ortaokul öğrencileri sınıflarının bedensel okuryazarlık seviyelerinde farkı var mı?

Psikolojik alan sonuçlarına (PLAYself) göre, altıncı sınıf öğrencileri (81.5), yedinci sınıf öğrencilerinden (78) daha yüksek puan almışlardır. Fakat çevresel katılım puanları altıncı sınıfın (66.2) ve yedinci sınıfın (67.2) neredeyse birbiriyle aynıdır. Dahası, her iki sınıf da açık alanlardaki aktivitelerde en yüksek, buzdaki aktivitelerde en düşük puanı almıştır.

Davranışsal alan sonuçlarına (PLAYinventory) göre, altıncı sınıf öğrencileri aktif video oyunları (37), yüzme (44), futbol (36), paten kayma (32), bisiklet (52), voleybol (43), basketbol (43), koşma (52) fiziksel aktivitelerine katıldıklarını işaretlemişlerdir. Yedinci sınıf öğrencileri ise aktif video oyunları (31), futbol (35), bisiklet (41), basketbol (29), koşma (34), yürüme (37) ve ip atlama (25) aktivitelerine katıldıklarını işaretlemişleridir.

Fiziksel alan sonuçlarına (PLAYfun) göre, altıncı sınıf öğrencileri hareket testinden 36.99 almışlardır. Bu, katılımcıların gelişmekte olan alanda olduğunu gösterir. En yüksek puanları denge hareketlerindedir fakat lokomotor ve nesne kontrolü puanları neredeyse aynıdır. Yedinci sınıflar ise hareket testinden 39.19 puan almışlardır. En yüksek puanları denge, en düşük puanları lokomotor becerilerindedir. Hareket çeşitliliğine bakıldığında, altıncı ve yedinci sınıfların en yüksek olduğu beceriler öne doğru denge yürüyüşü ve nesneyi kaldır ve indir hareketidir. En düşük puanları ise makas hareketi, sekme, galop yapma, topa ayakla vurma, sopayla vurma ve baş üstü atıştır.

Sınıflar için Bağımsız t-test

Hareket yetkinliği, psikolojik alan ve davranışsal alan arasındaki sınıf ve cinsiyet farklılıklarını belirlemek için bağımsız t-test kullanılmıştır.

Bağımsız t-test için varsayımlar

Gravetter ve Wallnau (2016)'ya göre, bağımsız t-test için bağımsız gözlem, normallik kontrolü ve varyans homojenliği ana varsayımlardır. Bu çalışmada, gözlemler arasında herhangi bir bağımlılık yoktur. Normallik kontrolü için, Skewness ve Kurtosis değerleri kullanılmıştır. Değerler, eksi üç ve artı üç arasında olması gerekir ve ne kadar sıfır değerine yakın ise o kadar iyidir. PLAYself için Skewness değeri 0.06 iken, Kurtosis değeri 0.67'dir. PLAYinventory için Skewness değeri 1.08, Kurtosis değeri 1.53 tür. PLAYfun için Skewness değeri 0.04, Kurtosis değeri 0.47'dir. Varyans homojenliğinde ise Levene's test'in p değerine bakılmıştır. 'P' değerinin 0.05 ten büyük olması gerekmektedir. Sonuçlara göre, PLAYfun için 0.97, PLAYself için 0.67 ve PLAYinventory için 0.68'dir.

Bağımsız t-test sonuçları

Hareket yetkinliği, psikolojik alan ve davranışsal alanlar arasında istatistiksel açıdan herhangi bir farklılık yoktur.

Araştırma sorusu 4

Ortaokul öğrencilerinin bedensel okuryazarlık seviyelerinde cinsiyet farkı var mı?

Psikolojik alan sonuçlarına (PLAYself) göre, erkekler (78.75), kızlardan (83) daha az puan aldıkları saptanmıştır. Çevresel katılımı ise erkekler (66.80) ve kızlar (66.60) neredeyse birbirleriyle aynı puanı almışlardır. Erkekler ve kızlar en az katıldıkları aktiviteler buzdaki aktivitelerdir, en çok ise açık alanlardaki aktivitelere katılmıştır.

Davranışsal alan sonuçlarına (PLAYinventory) göre, erkekler aktif video oyunlarına (45), futbola (54), bisiklete (48), koşuya (43), yürümeye (41) katılmıştır fakat kızlar yüzmeye (35), patene (36), bisiklete (45), voleybola (52), koşuya (43), yürümeye (46) ve ip atlamaya (42) katılmışlardır.

Fiziksel alan sonuçlarına (PLAYfun) göre, erkekler (40.64) hareket beceri testinde kızlardan (35.49) daha yüksek puan almışlardır. Her iki cinsiyetinde en yüksek puan aldıkları bölüm 'denge' becerileridir. Fakat en az puan aldıkları bölüm ise kızlar için nesne kontrolü erkekler için lokomotor becerileridir. Erkekler motor becerilerin her bir bölümünde (lokomotor, nesne kontrolü ve denge) kızlardan daha yüksek puan almışlardır. Hareket çeşitliliğine ayrı ayrı bakıldığında, erkekler ve kızlar en yüksek puanları öne doğru denge yürüyüşüne ve nesneyi kaldırıp indirme becerisinde almıştır. En az puanı ise makas hareketi, sekme hareketi, galop hareketi, baş üstü atmadır. Ayrıca kızlar erkeklerden farklı olarak topa ayak ile vurma becerisinde en düşük skoru almışlardır.

Cinsiyet için bağımsız t-test

Bağımsız t-test sonuçlarına göre, hareket beceri testinde erkekler (40.63) ile kızlar (35.49) arasında istatistiksel olarak anlamlı farklılık vardır $t(156) = 4.76, p < .05, r^2 = .13$. Fakat diğer davranışsal alan ve psikolojik alanda cinsiyetler arasında anlamlı bir istatistiksel farklılık yoktur.

TARTIŞMA VE SONUÇ

Ortaokul öğrencilerinin bedensel okuryazarlığı

Bulgulara göre, katılımcılar psikolojik alandan (PLAYself) 100 üzerinden 75.90 puan almışlardır. Çevresel katılım skorları 67.60, kendini tanımlama bölümünden ise 80 puan almışlardır. Altıncı sınıflar kendini tanımlama bölümünden

yedinci sınıflara göre daha fazla puan almışlardır. Fakat çevresel katılım skorları neredeyse aynıdır. Ayrıca, kızlar, erkeklerden kendini tanımlama bölümünden daha yüksek puan alırken, çevresel katılımdan neredeyse aynı puanı almışlardır. Bu sonuçlara göre, katılımcıların bir beceriyi öğrenme ve fiziksel aktivite ve spora katılımlarda öz yeterlilikleri yüksek çıktığı saptanmıştır. Literatüre bakıldığında erkeklerin genel olarak kızlara göre hareket yetkinliğinde, kendi algılarında ve içsel motivasyonların da daha yüksek skora sahip olduğu görülmektedir (Biddle & Armstrong, 1992; Hayes, Crocker & Kowalski, 1999; Crocker, Eklund & Kowalski, 2000). Dahası, erkeklerin yarışma ve motor beceriler de kızlardan daha iyi olduğu gözlemlenmiştir (Kilpatrick, Hebert & Bartholomew, 2010). Başka bir neden ise, katılımcıların algısal fiziksel aktivite seviyesi, gerçek fiziksel aktivite seviyesinden daha fazla olabileceğidir. Çok fazla öz yeterlilik gerçek fiziksel aktivite katılımını göstermeye bilir ve katılımcıların gereğinden fazla özgüvenine ve gereğinden fazla kendisinden beklentisine yol açabilir (Sport for life, 2013).

Davranışsal alana (PLAYinventory) göre ise öğrenciler genellikle aktif video oyunları, futbol, yüzme, bisiklet, voleybol, basketbol, yürümek ve koşmak gibi fiziksel aktivite ve sporlara katılmaktadırlar. Erkekler, kızlardan farklı olarak, aktif video oyunları ve futbola katılmaktadır. Kızlar ise kaykay, ip atlamayı tercih etmektedir. Öğrenciler, futbol, voleybol ve basketbol gibi yaygın sporları tercih etmektedir. Literatüre göre, çocuklar genellikle futbol, basketbol ve file sportları gibi popüler oyunları tercih etmektedir (Abernethy & MacAuley, 2003; Tozoğlu S., Çağlaroğlu, & Tozoğlu D., 2009; Sahlin, 2017). Ayrıca futbol kalesi, basketbol potası, voleybol filesi gibi malzemeler her okul bahçesinde ve oyun alanlarında bulunduğu için katılımın bu tür fiziksel aktivitelere katılım fazla olabilmektedir. Öğrencilerin, yüzme seanslarına katılmasının bir nedeni ise okulun yakınında bir yüzme havuzu bulunmasından kaynaklanabilir. Yerel tesislere kolay ulaşım (Booth, Owen, Bauman, Clavisi & Leslie, 2000), destekleyici çevre (Giles-Corti & Donovan, 2002), park, spor salonları gibi imkânlar ve kolaylıklar fiziksel aktivite katılımı ile pozitif ilişkilidir (Brownson, Baker, Housemann, Brennan & Bacak, 2001). Ayrıca, Elling ve Knopperse göre (2005) kızların genellikle cimnastik, voleybol, yüzme gibi

aktiviteleri tercih ederken, erkekler futbol, basketbol ve boks gibi maskülen sporları tercih etmektedir.

Fiziksel alan (PLAYfun) sonuçlarına baktığımızda, katılımcılar ‘gelişmekte olan’ alanda yer almaktadır. En yüksek puanları denge becerilerindedir. Lokomotor ve nesne kontrolü becerilerinde ise en düşük skora sahiptirler. Müfredattaki programa bakıldığında, altıncı ve yedinci sınıf öğrencilerinin her bir temel hareket becerilerini öğrenmesi ve farklı çevresel koşullarda bu hareketleri göstermesi, yapması beklenmektedir (MEB, 2017). Öğrencilerin bazıları ‘gelişiyor’ bazıları ‘edinişmiş’ alanda olmasına rağmen hiçbiri ‘uzman’ seviyesinde değildir. Birçok öğrencinin müfredata göre beklenen düzeyde olmamasını başka bir çalışma da desteklemektedir. Kozera (2017), sekizinci sınıfların %50’si beklenen kriterler de temel hareket becerilerini yapamamıştır. Bu sonuçlar öğrencilerin yeterli pratik yapmadığını, derslerde uygun içerikleri almadığını da gösterebilmektedir (Lubans ve diğ., 2010). Cinsiyet farkına bakıldığında ise, erkeklerin kızlardan daha yüksek puan aldığı görüşmüştür. Denge becerilerinde aynı seviyelerde, en az ise nesne kontrolü becerilerinde puan aldıkları görülmüştür. Bazı çalışmalar, erkeklerin daha yüksek hareket yetkinliğinin olduğunu göstermiştir (Rudisill & Mahar, 1993) denge becerilerinde fark olmadığı (Kalaja, Jaokkola & Liukkonen, 2010) ve kızların nesne kontrolünde en düşük seviyede olduğu gözlemlenmiştir (Barnett, Ridgers & Salmon, 2014). Bazı çalışmalar ise, Kızların lokomotor becerilerde erkeklerden daha iyi olduğu (Banett, 2009). Kızların denge hareket becerilerinde kesin bir sonuç olmadığı (Barett, 2016), erkeklerin nesne kontrol becerilerinde ise düşük olduğu (Hardy, Reinten-Reynolds, Espinel, Zask & Okely, 2012) gözlemlenmiştir. Sonuçlara bakıldığında kesin bir yanıt bulunamamaktadır. Bunun için, farklı etkenler göz önünde bulundurularak çalışmalar yapılması önemlidir.

PLAYself, PLAYinventory ve PLAYfun arasındaki ilişki

Sonuçlar, psikolojik alan (PLAYself) ve davranışsal alan (PLAYinventory) arasında istatistiksel olarak korelasyon olduğunu göstermiştir. Fakat fiziksel alan (PLAYfun) skorunun diğer skorlar ile bir ilişkisinin olduğu saptanamamıştır. Bazı araştırmalar, fiziksel aktivite seviyesinin (Poitras ve diğ., 2016), günlük yüksek

fiziksel aktivitenin (Meester ve diğ., 2016) psikolojik ve bilişsel ilişkisinin olduğunu göstermiştir. Motivasyon, güven, bilgi ve anlama ise sedanter yaşam tarzıyla negatif bir ilişki içerisindedir (Sauder, 2018). Fakat hareket yetkinliği ve fiziksel aktivite seviyesinin de pozitif bir ilişki içerisinde olduğu beklenmektedir (Barett, 2016). Başka bir çalışma ise, düşük becerili öğrencilerin düşük hareket seviyeleri gösterdiği ve bir beceriyi uygularken zorlandığı gözlemlenmiştir (Stodden ve diğ., 2012).

PLAYself, PLAYinventory ve PLAYfun arasındaki cinsiyet farklılığı

Sonuçlar göstermiştir ki, fiziksel alan (PLAYfun) skorları arasında istatistiksel olarak cinsiyet farkı vardır. Bazı çalışmalar, erkeklerin kızlardan daha yüksek hareket becerileri olduğunu (Barnette ve diğ., 2009), erkeklerin bu becerilerde kızlardan her yaşta daha iyi olduğunu (Kalaja ve diğ., 2010) ve hareket becerilerinde kızlardan daha yüksek performans aldığını göstermektedir (Robinson, 2010). Diğer davranışsal alan (PLAYinventory) ve psikolojik alan (PLAYself) skorları arasında istatistiksel olarak anlamlı bir fark bulunamamıştır.

PLAYself, PLAYinventory ve PLAYfun arasındaki sınıf farklılığı

Sonuçlara göre, PLAYself, PLAYinventory ve PLAYfun arasında istatistiksel olarak anlamlı fark bulunamamıştır. Bu sonuçlar altıncı ve yedinci sınıfların hemen hemen fiziksel aktiviteye karşı aynı motivasyon, özgüven, bilgi ve anlama seviyelerinin olduğunu göstermektedir. Dahası, fiziksel aktivite seviyelerinin ve hareket yetkinliğinin aynı olduğunu göstermektedir. Fakat bu sonuçlar literatüre bakıldığında desteklenmemektedir. MEB (2017)' e göre, düzenli fiziksel aktivite ve hareket kavramları, ilkeleri ve ilgili yaşam becerileri yaş ve sınıf arttıkça artmaktadır. Ayrıca, temel hareket becerileri ve yaş arasında pozitif bir ilişki olduğu saptanmıştır (Barett, 2016).

Öneriler

Gelecekteki bedensel okuryazarlıkla ilgili çalışmalar şunları dikkate almalıdır;

- Sonuçları genelleylebilmek ve daha kapsamlı bir anlama için katılımcı sayısını arttırmalı

- Diğer sınıflar (5. ve 8. sınıf) bedensel okuryazarlık seviyelerini değerlendirmek, daha fazla bilgi edinebilmek ve sınıf farklılığını incelemek için gelecek çalışmalara eklenmelidir.
- Özel okullardaki öğrencilerin bedensel okuryazarlıklarını incelemelidir. Özel okullarda okuyan öğrencilerin daha fazla imkân (spor ekipmanı, spor salonu, sınıf mevcudunun az olması gibi) olacağı ve bu durumun bedensel okuryazarlıkta farklılık gösterebileceği düşünülmektedir.
- Türkiye deki farklı illerde öğrencilerin bedensel okuryazarlıkları incelenmelidir. Fiziksel aktivite sonuçları, bedensel okuryazarlıkları, fiziksel aktivite katılımı gibi bir takım parametreler coğrafi koşullar dolayısıyla farklı çıkabilecektir.
- Öğrencilerin bedensel okuryazarlıklarını değerlendirmek için nesnel değerlendirme ölçekleri ve ölçüm aletleri kullanılmalıdır. Örneğin, adımsayar davranışsal alanın sonuçlarını desteklemek veya farklılıkları göstermek için çalışmalara eklenebilir.
- Öğrencilerin vücut kitle indeksi ve bel çevresi kalınlığının, bedensel okuryazarlıkla bir korelasyonu olup olmadığı incelenebilir.

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