

The Relationship Between The Technopedagogical Competences and Self Efficacy of Physical Education and Sports Teachers¹

Anıl TÜRKELİ 

DOI: <https://doi.org/10.38021asbid.1198977>

ORIJINAL ARTICLE

Erzincan Binali Yıldırım
University,
Faculty of Education,
Physical Education and
Sport, Erzincan/Turkey

Abstract

In this research it is aimed to determine the relationship between the technopedagogical competences and self-efficacy of physical education and sports teachers. The study group of the research consists of 106 physical education and sports teachers, 37 female and 69 male, working in the schools affiliated to Turkish Ministry of National Education. In addition, the average age of the study group is 33.27, and the average year of service is 10.8 years. In the collection of data “The Technological Pedagogical Content Knowledge (TPACK-deep) Scale” which was developed by Kabakçı Yurdakul, Odabaşı, Kılıçer, Çoklar, Birinci and Kurt (2012) and “Turkish version Of The teachers’ Sense Of Efficacy Scale (TTSES)” which was developed by Çapa, Çakıroğlu and Sarıkaya have been used. In this research, which was carried out to determine the relationship between physical education and sports teachers' self-efficacy and technopedagogical competence, the relational screening model was used. The relationship between teachers' self-efficacy and technopedagogical education competencies have been examined with Pearson Moments Product Correlation. Multiple linear regression analysis has been conducted to examine the effect of teachers' self-efficacy levels on technopedagogical competencies. As a result of the analysis, it has been determined that there is a high level relationship between the technopedagogical competences of physical education and sports teachers and the instructional strategies used in the classroom.

Corresponding Author:

Anıl TÜRKELİ
anil.turkeli@erzincan.edu.tr

Keywords: Physical Education and Sports Teacher, Technopedagogic Competence, Self-Efficacy

Beden Eğitimi ve Spor Öğretmenlerinin Teknopedagogik Eğitim Yeterlikleri İle Öz Yeterlikleri Arasındaki İlişki Öz

Bu araştırmada beden eğitimi ve spor öğretmenlerinin öz yeterlikleri ile teknopedagogik yeterlikleri arasındaki ilişkinin belirlenmesi amaçlanmıştır. Araştırmanın çalışma grubunu, Milli Eğitim’e bağlı 49’u ortaokul ve 57’si lise düzeyinde görev yapmakta olan 37’si kadın, 69’u ise erkek olmak üzere toplamda 106 beden eğitimi ve spor öğretmeni oluşturmuştur. Öğretmenlerin yaş ortalaması 33,27 olup, hizmet yılı ortalaması 10,8 yıl olduğu görülmüştür. Verilerin toplanmasında Kabakçı Yurdakul Odabaşı, Kılıçer, Çoklar, Birinci ve Kurt (2012) tarafından geliştirilen “Teknopedagogik Eğitim Yeterlikleri (TPACK-deep) Ölçeği” ile Çapa, Çakıroğlu ve Sarıkaya (2005) tarafından geliştirilen “Öğretmen Özyeterlik Ölçeği” kullanılmıştır. Beden eğitimi ve spor öğretmenlerinin öz yeterlikleri ile teknopedagogik yeterlikleri arasındaki ilişkinin belirlenmesi amacıyla gerçekleştirilen bu araştırmada, ilişkisel tarama modelinden yararlanılmıştır. Çalışmada öğretmenlerin öz yeterlik ve teknopedagogik eğitim yeterlikleri arasındaki ilişkiler Pearson Momentler Çarpım Korelasyon ile incelenmiştir. Öğretmenlerin öz yeterlik düzeylerinin, teknopedagogik eğitim yeterlikleri üzerindeki etkisini incelemek için ise çoklu doğrusal regresyon analizi yapılmıştır. Yapılan analizler sonucunda, beden eğitimi ve spor öğretmenlerinin teknopedagogik yeterlikleri ile sınıf atmosferinde kullandıkları öğretim stratejileri arasında yüksek düzeyde ilişki olduğu belirlenmiştir.

Anahtar kelimeler: Beden Eğitimi ve Spor Öğretmeni, Teknopedagogik Yeterlik, Öz Yeterlik

Received:
03.11.2022

Accepted:
12.12.2022

Online Publishing:
19.12.2022

Introduction

Nowadays, the students are called generation Z. The birth of this generation that will be the consumer group, employees, employers and trainers of the near future, has been in the digital world with smartphones, videos, internet and visual technology. They are different from the other generations with these features, and the technology currently used is nothing new for them. This generation is technologically advanced and they are successful in using programs and materials. They can be much more productive with advanced software and usage programs and just being active in social media will not be enough for them. This entrepreneurial and more social generation is hungry for new technologies, and they are eager and quick learners to develop and prove themselves since they grow up in the latest technology. They have an attention span shorter than its predecessors, however it is actually an evolved 8-second filter (Seymen, 2017). Therefore, educators should be technologically well equipped to meet the needs of this generation.

Education is defined as the process of bringing about desired change in the individual's behavior through his own life and on purpose (Ertürk, 1988). In teacher training programs from past to present, from the approach focusing on teachers' having professional knowledge, the approach which supports the idea that to teach effectively knowledge is not sufficient by itself but that teachers should have pedagogical knowledge that includes how this professional knowledge should be taught started to prevail (Shulman, 1986). With the advances in technology, technological knowledge has been added to the competencies that teachers should have by the researchers in addition to the professional and pedagogical knowledge. With the use of technology, it is aimed to create a more effective learning environment in order to increase the motivation of the students, to ensure active participation during the classes, to facilitate their learning and to ensure the permanence of learning. Therefore, the concept of technology integration in education is an important research field that does not become outdated in the field of educational technology (Karalar and Altan, 2016).

Technopedagogy, which envisages the use of technological developments as educational tools and deals with "content knowledge", "pedagogical knowledge" and "technological knowledge" as a whole, has developed the concept of Technological Pedagogical Content Knowledge (TPACK) (Koehler and Mishra, 2009).

Technological knowledge includes the knowledge of using modern technologies such as computer, internet, digital video (Koehler and Mishra, 2005). The rapid change of technology in its nature indicates the continuous change of this information in itself. Pedagogical knowledge, which includes teachers' professional knowledge and skills, includes both planning, executing and evaluating the teaching and organizing the teaching in accordance with the learning profiles of the

learners. Content knowledge is the knowledge covering the subject area to be taught or learned (Koehler and Mishra, 2009). Teachers need to know the subjects, concepts, theories and procedures specific to the subject area they will teach. Pedagogical knowledge includes the type of information related to the selection of pedagogical approaches specific to the teaching of the subject area. Technological knowledge includes the knowledge of selecting, using and evaluating the most appropriate technology in the subject area (Koehler and Mishra, 2005). Technological pedagogical knowledge includes the selection of technology in the most appropriate way for learning and how to use the chosen technology in learning (Koehler and Mishra, 2009).

Technological pedagogical content knowledge constitutes the intersection information field of the model. This intersection area expresses the knowledge of realizing the planned learning process by choosing the appropriate technology in teaching a particular subject (Koehler and Mishra, 2005). In other words, it includes the knowledge of pedagogical strategies, methods and techniques required to teach knowledge in a field with appropriate technology (Koehler and Mishra, 2009). The core of the TPACK model is the dynamic and interactive relations between pedagogy, content and technology. The effective use of technology in education requires understanding mutual relationships and interaction between these three components and developing strategies and presentations specific to the content of the course with this combination (Koehler and Mishra, 2005).

The ability of teachers to do their jobs in the most effective way is closely related to their belief that they can fulfill these duties and responsibilities, as well as having technological knowledge. It is stated that self-efficacy belief, which is thought to be among the predictors of qualified and effective teaching, can be used to explain the differences in teacher activities in the field of education and will make important contributions in understanding and developing teacher behaviors (Tschannen-Moran and Hoy, 2001).

Self-efficacy is defined by Bandura in the "Social Learning Theory" in the 1980s and this competence is expressed as the individual's own judgement on the individual's capacity to succeed in organized activities (Bandura, 1977). Teachers' self-efficacy perception also affects teachers' behaviors in the classroom, the goals they set, and their desire levels (Tschannen-Moran and Hoy, 2001). In this context, teacher self-efficacy appears to be an important variable for effective teaching and the integration of technology.

One of the most important qualities that our teachers, who have brought the idea of educating the body in the globalizing world to the students who grow up with technology, should possess is technological knowledge in order to keep up with the age and use effective techniques. Therefore,

this research aims to determine the relationship between the technopedagogical competences and self-efficacy of physical education and sports teachers.

Method

Research Model

Relational screening model was used in this research, which was carried out to determine the relationship between physical education and sports teachers' self-efficacy and technopedagogical competence. Screening models are research models that aim to describe a situation that exists in the past or still as it exists (Karasar, 2005).

Study Group

The study group of the research consisted of 106 physical education and sports teachers working in the middle and high schools affiliated to Turkish Ministry of National Education in Erzincan. In the study, the whole universe was tried to be reached; participants who did not complete the measurement tools properly were excluded from the research.

Table 1

The Characteristics of the Participants

	Group	Frequency
Gender	Female	37
	Male	69
	Total	106
Type of School	Middle School	49
	High School	57
	Total	106

When Table 1 is analyzed, it was determined that 37 of the study group were women and 69 were men. When analyzed by the type of school they serve, 49 were middle school and 57 were high school. In addition, the average age of the study group was 33.27, and the average year of service was 10.8 years.

Data Collection Tools

The Technological Pedagogical Content Knowledge (TPACK-deep) Scale

The validity and reliability study of the TPACK-deep scale was conducted with pre-service teachers. The scale is a five-point Likert type and consists of a total of 33 items. The scale has four sub-dimensions: design, proficiency, ethics and exertion. Internal consistency coefficient (Cronbach's

alpha coefficient) for the whole scale was found to be .95 in the original work (Kabakçı Yurdakul et al., 2012).

Turkish version of The Teachers' Sense Of Efficacy Scale (TTSES)

Originally developed by Tschannen-Moran and Woolfolk Hoy (2001), The Teacher Self-Efficacy Scale (TSES), which was translated and adapted into Turkish by Çapa et al. was used to measure pre-service teachers' self-efficacy beliefs. The scale consists of 24 items and a 9-point likert. As in the original scale, the Turkish version has three sub-dimensions: self-efficacy for student engagement, self-efficacy for instructional strategies, and self-efficacy for classroom management. They reported that the alpha coefficient values of each sub-dimension of the scale for Turkish prospective teachers were .82, .86 and .84, respectively. The reported reliability for the whole scale is 0.93 (Çapa et al. 2005).

Data Analysis

In the study, the relationship between self-efficacy and technopedagogical competencies of physical education and sports teachers were examined with Pearson Moments Product Correlation. Multiple linear regression analysis was conducted to examine the effect of teachers' self-efficacy levels on technopedagogical competencies. Significance level was determined as 0.05.

Ethics of Research

During the current research, it was acted within the framework of the "Higher Education Institutions Scientific Research and Publication Ethics Directive". Before each scale was filled by Physical education and sport teachers, it adhered to a voluntary basis, and the rules to be followed were specified in detail.

Findings

Table 2

Correlation

		Student Engagement	Instructional Strategies	Classroom Management
Student engagement	Pearson Correlation	1	,605**	,668**
	Sig. (2-tailed)		,000	,000
	N	106	106	106
Instructional strategies	Pearson Correlation	,605**	1	,613**
	Sig. (2-tailed)	,000		,000
	N	106	106	106
Classroom management	Pearson Correlation	,668**	,613**	1

Sig. (2-tailed)	,000	,000	
N	106	106	106

One of the most important assumptions in regression analysis is the multiple connection problem. The multiple connection problem states that there are high level relationships ($r > 0.80$) between the independent variables (Çokluk, Şekercioğlu and Büyüköztürk, 2010). As a result of the correlation analysis conducted to determine the level of the relationship between the independent variables, the highest level of relationship was found to be 0.67. This finding can be expressed as there is no multiple connection problem between the independent variables.

Table 3

Regression Analysis Results According to the Sub-Dimension of Design

Variable	B	SE	Beta	t	p
Contant	11,033	4,418		2,497	,014
Student Engagement	-,114	,231	-,075	-,492	,624
Instructional Strategies	,767	,206	,520	3,722	,000
Classroom Management	,273	,214	,165	1,276	,205

R=0,58, R2=0,34 F= 17,8; p=0.00

According to Table 3, a positive, high level and meaningful relationship was determined between physical education and sports teachers' instructional strategy scores and sub-dimension of design. In other words, it can be said that as the instructional strategy scores of the teachers increase, the design scores increase. It can be stated that 34% of any change in design dimension is explained by teachers' self-efficacy levels ($R = 0.58$, $R^2 = 0.34$ $F = 17.8$; $p = 0.00$).

Table 4

Regression Analysis Results According to Sub-Dimension of Exertion

Variable	B	SE	Beta	t	p
Constant	17,349	5,579		3,110	,002
Student Engagement	-,310	,291	-,172	-1,065	,290
Instructional Strategies	,895	,260	,509	3,441	,001
Classroom Management	,361	,270	,183	1,334	,185

R=0,51, R2=0,26 F= 12,5; p=0.00

According to Table 4, a positive, high level and meaningful relationship was determined between physical education and sports teachers' instructional strategy scores and their sub-dimensions

of exertion. In other words, it can be said that as the participants' instructional strategy scores increase, their application scores increase. It can be stated that 26% of any change in the sub-dimension of exertion is explained by teachers' self-efficacy levels ($R = 0.51$, $R^2 = 0.26$ $F = 12.5$; $p = 0.00$).

Table 5

Regression Analysis Results According to the Sub-Dimension of Ethics

Variable	B	SE	Beta	t	p
Constant	7,800	3,273		2,383	,019
Student Engagement	-,178	,171	-,175	-1,038	,302
Instructional Strategies	,451	,153	,454	2,954	,004
Classroom Management	,193	,159	,173	1,216	,227

$R=0,45$, $R^2=0,20$ $F= 8,75$; $p=0.00$

According to Table 5, a positive, moderate and significant relationship was determined between physical education and sports teachers' instructional strategy scores and the sub-dimension of ethics. In other words, it can be said that as teachers' instructional strategy scores increase, their ethics scores increase. It can be stated that 20% of any change in the sub-dimension of ethics explained the self-efficacy levels of the participants ($R = 0.45$, $R^2 = 0.20$ $F = 8.75$; $p = 0.00$).

Tablo 6

Regression Analysis Results According to the Sub-Dimension of Proficiency

Variable	B	SE	Beta	t	p
Constant	9,145	2,303		3,970	,000
Student Engagement	-,125	,120	-,170	-1,037	,302
Instructional Strategies	,380	,107	,528	3,535	,001
Classroom Management	,110	,112	,137	,987	,326

$R=0,49$, $R^2=0,24$ $F= 11,2$; $p=0.00$

According to Table 6, a positive, moderate and significant relationship was determined between physical education and sports teachers' instructional strategy scores and the sub-dimension of proficiency. In other words, it can be said that as the instructional strategy scores of the teachers increase, their proficiency scores increase. It can be stated that 24% of any change in the sub-dimension of proficiency is explained by the self-efficacy levels of the participants ($R = 0.49$, $R^2 = 0.24$ $F = 11.2$; $p = 0.00$).

Discussion and Conclusion, Suggestions

In this study, it was aimed to determine the relationship between the technopedagogical competences and self-efficacy of physical education and sports teachers. As a result of the analyzes, it was determined that there was a high level of relationship between the technopedagogical competencies of the participants and the instructional strategies used in the classroom atmosphere.

İlkay (2017) has found that preschool teacher candidates' self-efficacy perceptions of technological pedagogical content knowledge and self-efficacy perceptions of technological pedagogical content knowledge were above average. Furthermore, it has been concluded that the sub-dimension of "content information" has the highest score and the sub-dimension "technology information" has the lowest value. It has been determined that pre-service teachers' level of self-efficacy perception in student engagement, instructional strategies and classroom management is sufficient.

In the research conducted by Yıldız (2017), it has been observed that mathematics teachers improved in the process of adapting to the teaching of geometry with technology, knowledge of curriculum in teaching geometry with technology, knowledge of understanding the student, knowledge of teaching strategies and methods.

Çam and Saltan (2019) examined technological pedagogical content knowledge, which is thought to be important in the professional success of teachers, with factors such as self-efficacy, lifelong learning trends, in-service training needs and attitudes towards technology. As a result of the research, it has been determined that teachers have high technological pedagogical content knowledge and teachers' self-efficacy level is medium.

The study conducted by Turgut (2017) found that social studies teachers' technological pedagogical content knowledge competencies were sufficient. Although teachers have the lowest technological knowledge among all the sub-dimensions of TPACK, pedagogy and content knowledge have been found to be high.

Bakaç and Özen (2017) have determined that pre-service teachers perceive themselves highly enough about TPACK competencies. In parallel with this finding, in the researches carried out by Albayrak Sarı, Cambazoğlu Bilici, Baran and Özbay, 2016; Cengiz, 2015; Chai, Koh, Tsai and Tan, 2011, it has been determined that there has been an increase in TPACK scores as a result of the education within the scope of technology integration. In the study carried out by Albayrak Sarı et al. (2016), it has been concluded that teachers consider themselves sufficient in the sub-dimensions of ethics, exertion, design and proficiency, respectively, which supports the findings in this study.

Ünal and Teker (2018) has been determined that the teacher candidates have advanced technopedagogical education competencies. In addition, their technopedagogical competencies have been found to be advanced in the sub-dimensions of proficiency, design and exertion, and they have been found to be sufficient in the sub-dimension of ethics.

In the study conducted by Sağlam Kaya (2019) with teacher candidates, it has been determined that TPACK competencies of teacher candidates are a significant predictor of teacher self-efficacy. Abbitt (2011) has determined that TPACK affects the pre-service teachers' self-efficacy in the context of technology integration. Keser, Karaoğlan-Yılmaz and Yılmaz (2015) have found a high positive relationship between teacher candidates' perceptions of self-efficacy regarding TPACK and technology integration. These results are consistent with the results of this study in the sense of self-efficacy and in the sense that technology integration has the potential of affecting teachers' perception of self-efficacy. In the research conducted by Mishne (2012) it has been concluded that teachers with high self-efficacy use less technology in their classrooms. This can be interpreted as the teachers' not perceiving technology as an effective element of teaching.

As a result of these findings it can be suggested that;

- Research methodology can be conducted by using a mixed method in which quantitative and qualitative methods are used together.
- The study group can be extended quantitatively or it can be conducted with teachers from different academic specializations.

References

- Abbitt, J. T. (2011). An Investigation of the relationship between self efficacy beliefs about technology integration and technological pedagogical content knowledge (TPACK) among preservice teachers. *Journal of Digital Learning in Teacher Education*, 27(4), 134-143. <https://doi.org/10.1080/21532974.2011.10784670>.
- Albayrak Sarı, A., Canbazoglu Bilici, S., Baran, E. & Özbay, U. (2016). Investigating the relationship between teachers' technological pedagogical content knowledge (TPACK) competencies and attitudes towards information and communication technologies. *Eğitim Teknolojisi Kuram ve Uygulama*, 6(1), 1-21. <https://doi.org/10.17943/etku.11643>.
- Bakaç, E., & Özen, R. (2017). Examining preservice teachers' material design self-efficacy beliefs based on their technological pedagogical content knowledge competencies. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi (KEFAD)*, 18(2), 613-632. Retrieved from <https://dergipark.org.tr/tr/pub/kefad/issue/59416/853301>.
- Bandura, A. (1977). Self-Efficacy: Toward a unifying theory of behavioural change. *Psychological Review*, 84, 191-215. <https://doi.org/10.1037/0033-295X.84.2.191>.
- Cengiz, C. (2015) The development of TPACK, technology integrated self-efficacy and instructional technology outcome expectations of pre-service physical education teachers. *Asia-Pacific Journal of Teacher Education*, 43(5), 411-422. <https://doi.org/10.1080/1359866X.2014.932332>.

- Chai, C. S., Koh, J. H. L., Tsai, C. C., & Tan, L. L.W. (2011). Modeling primary school pre-service teachers' Technological Pedagogical Content Knowledge (TPACK) for meaningful learning with information and communication technology (ICT). *Computers&Education*, 57(1), 1184-1193. <https://doi.org/10.1016/j.compedu.2011.01.007>.
- Çapa, Y., Çakıroğlu, J., & Sarıkaya, H. (2005). The development and validation of a Turkish version of teachers' sense of efficacy scale. *Education and Science*, 30(137), 74-81.
- Çam, E., & Saltan, F. (2019). The relationship between primary education teachers' technological pedagogical content knowledge and lifelong learning tendency. *Elementary Education Online*, 18(3), 1195-1207. <https://doi.org/10.17051/ilkonline.2019.611468>
- Çokluk, Ö., Şekercioğlu, G., & Büyüköztürk, Ş. (2010). *Çok değişkenli istatistik SPSS ve LISREL uygulamaları* (Birinci baskı). Ankara: Pegem Akademi.
- Ertürk, S. (1988). Türkiye'de eğitim felsefesi sorunu. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 3, 11-16. Retrieved from <https://dergipark.org.tr/pub/hunefd/issue/7834/103113>.
- İlkay, N. (2017). *Self-efficacy of perspective pre-school teachers' in content of technological pedagogical content knowledge (Sakarya University sample)*. Master's Thesis. Sakarya University, Institute of Educational Sciences, Sakarya.
- Kabakçı Yurdakul, I., Odabaşı, H. F., Kılıçer, K., Çoklar, A. N., Birinci, G., & Kurt, A. A. (2012). The development, validity and reliability of TPACK-deep: A technological pedagogical content knowledge scale. *Computers & Education*, 58(3), 964-977. <https://doi.org/10.1016/j.compedu.2011.10.012>.
- Karalar, H., & Aslan Altan, B. (2016). Examining pre-service primary education teachers' TPACK competencies and teacher self-efficacies. *Cumhuriyet International Journal of Education-CIJE*, 5(5), 15-30. <https://doi.org/10.30703/cije.321422>
- Keser, H., Karaoğlu Yılmaz, F. G., & Yılmaz, R. (2015). TPACK Competencies and technology integration self-efficacy perceptions of pre-service teachers. *Elementary Education Online*, 14(4), 1193-1207. <https://doi.org/10.17051/ieo.2015.65067>
- Karasar, N. (2005). *Bilimsel araştırma yöntemi* (17. Baskı). Ankara: Nobel Yayın Dağıtım.
- Koehler, M. J., & Mishra, P. (2005). Teachers learning technology by design. *Journal of Computing in Teacher Education*, 21(3), 94-102. doi: 10.1.1.130.7937
- Koehler, M. J., & Mishra, P. (2009). What is technological pedagogical content knowledge?. *Contemporary Issues in Technology and Teacher Education*, 9(1), 60-70. Retrieved from <http://www.citejournal.org/vol9/iss1/general/article1.cfm>.
- Mishne, J. (2012). *An investigation of the relationships between technology use and teachers' self-efficacy, knowledge and experience*. (Doctoral Dissertation, Pepperdine University). Retrieved from ProQuest Dissertations and Theses. (UMI No. 3503821)
- Sağlam Kaya, Y. (2019). Investigation of preservice teachers' technopedagogical teaching competencies and teacher's self-efficacy in terms of various variables. *Journal of Theoretical Educational Science*, 12(1), 185-204. <https://doi.org/10.30831/akukeg.420909>.
- Seymen, A. F. (2017). Associating the characteristics of Y and Z generation traits with ministry of national education 2014-2019 strategic program and TUBITAK vision 2023 predictions. *Kent Akademisi Kent Kültürü ve Yönetimi Hakemli Elektronik Dergisi*, 10(32), 467-489.
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15(2), 4-14. doi: 10.3102/0013189X015002004
- Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17(7), 783-805. [https://doi.org/10.1016/S0742-051X\(01\)00036-1](https://doi.org/10.1016/S0742-051X(01)00036-1).
- Turgut, T. (2017). *Technological pedagogical content knowledge qualification social studies teachers Karabük province case*. (Master's Thesis.). Karabük University, Social Sciences Institute, Karabük.
- Ünal, E., & Teker, N. (2018). The adaption of technology integration self-efficacy scale into Turkish. *Anemon Muş Alparslan Üniversitesi Sosyal Bilimler Dergisi*, 6(6), 973-978. <https://doi.org/10.18506/anemon.400497>

Yıldız, H. (2017). *Analysis of development of technological pedagogical content knowledge on geometry of mathematics teachers.*(Doctoral dissertation). Karadeniz Teknik University, Institute of Educational Sciences, Trabzon.



This paper is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).

ⁱ Bu çalışma 6. Uluslararası Akademik Spor Araştırmaları Kongresi'nde özet bildiri olarak sunulmuştur.