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Adapting the Virtual World Risk Perception Scale to Secondary School Level

Veysel Bilal Arslankara*[a], Ertuğrul Usta[b]

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Abstract

In this study, Virtual World Risk Perception Scale which was developed to determine the virtual risk perception levels of high school students was adapted to the secondary school level. The scale is a five-point Likert type and consists of 23 items divided into five sub-dimensions. The study group consisted of 261 students in 7th and 8th grade in a secondary school in Sakarya. The validity and reliability of the scale were tested and confirmatory factor analysis, internal consistency coefficients and stability analyzes were examined. In the light of the analyzes, it was concluded that the scale is a valid and reliable measurement tool that can measure the virtual risk perceptions of secondary school students. Cronbach Alpha, Guttmann Split Half and Sperman Brown values were calculated for the reliability of the whole scale and sub-dimensions. As a result, Dünya virtual corruption ", "virtual deterioration ", "virtual opportunity ", "virtual opportunity" and "virtual awareness", the five sub-factors and 23 items, which were judged to be valid and reliable as a result of the analysis, the Virtual World Risk Perception Scale (VWRPS) is expected to be a scale that is open to development, usable and fills the gap in the relevant literature.

Sanal Dünya Risk Algısı Ölçeğinin Ortaokul Düzeyine Uyarlanması

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Öz

Bu çalışmada daha önce lise öğrencilerinin sanal risk algı (virtual risk perception) düzeylerinin belirlenmesi amacıyla geliştirilen Sanal Dünya Risk Algısı Ölçeği ortaokul düzeyine uyarlanmıştır. Ölçek beş dereceli likert tipi olup beş alt boyuta ayrılmış 23 maddeden oluşmaktadır. Araştırmanın çalışma grubunu Sakarya ilinde bulunan bir ortaokulda 7. ve 8. Sınıfta öğrenim gören toplam 261 öğrenci oluşturmaktadır. Ölçeğin geçerlik ve güvenirliği test edilmiş, doğrulayıcı faktör analizi, iç tutarlılık katsayıları ve kararlılık analizleri incelenmiştir. Yapılan analizler ışığında ölçeğin ortaokul öğrencilerinin sanal risk algılarını ölçebilen geçerli ve güvenilir bir ölçme aracı olduğu sonucuna varılmıştır. Ölçeğin tamamı ve alt boyutların güvenirlikleri için Cronbach Alpha, Guttmann Split Half ve Sperman Brown değerleri hesaplanmıştır. Neticede "sanal yozlaşma", "sanal yıpranma", "sanal olanak", "sanal fırsat" ve "sanal farkındalık" isimleri ile beş alt faktör ve 23 maddeden oluşan ve yapılan analizler neticesinde geçerli ve güvenilir olduğuna karar verilen Sanal Dünya Risk Algısı Ölçeği (SDRAÖ)'nin, geliştirilmeye açık, kullanılabilir düzeyde ve ilgili alanyazında boşluğu dolduran bir ölçek olması beklenmektedir.

***Corresponding Author:** vbilalarslankara@gmail.com
[a] Information Technology Teacher - Mebbis System Manager, Akyazi District Directorate of National Education, Sakarya/Turkey, http://orcid.org/0000-0002-9062-9210
[b] Prof. Dr., Necmettin Erbakan University, Computer Education and Instructional Technology, Konya/Turkey, http://orcid.org/0000-0001-6112-9965

Introduction

In today's world, where digital is encompassing all areas (Hilbert & Lopez, 2011; Dentzel, 2013), even if there are regions and people who do not have internet access, people living in society, including Silent Belt individuals, are included in a system of government (state). The number of transactions carried out without the help of internet is low. Because there are always a series of needs that concern every individual in life. Therefore, the Internet and every new technology it brings are counted among the needs for everyone. Abraham Maslow organized the basic needs of human beings in the order of priority in the Human Needs Theory which has an important place in the theories of motivation and structured it as a pyramid. Accordingly, the lowest level of the pyramid moves from the most important and indispensable needs for human survival to the need for self-realization at the top level, in order of removal. According to the theory, human needs are unlimited and after one need is met, another need arises. In the process of needs, the individual is not completely satisfied with this process. Other needs that have not yet been fulfilled in this process are a great source of motivation for the individual and motivate the individual to achieve it. However, once the targeted need has been met, the motivation of the individual towards this need moves away from the determining effect on the related behaviors (Maslow, 1943). The profound cultural changes experienced in consumer societies have changed the essence, terms and conceptual view of the desires of human beings for their natural needs. The existential aspects of the pyramid are gradually becoming obsolete and it is obvious that today's needs should be reclassified because some of the values that people care about have lost their importance compared to the past.

According to Maslow, the first two stages of the pyramid are the most important stages of all the needs. Other needs do not matter to an individual who has not yet met his physiological needs. Because a person who is hungry or thirsty will firstly meet this need and then turn to other needs. The need for security is based on basic security requirements such as protection and housing. Accordingly, the person will reduce their fear and anxiety and then turn to other needs. Third step; it is on the basis of belonging and love, and the needs of loving, being loved and belonging are expressed as social needs. In the fourth step, the need for success, appreciation and respect of the individual is mentioned. In the fifth step, self-realization is realized by realizing the capacity of the individual (Cao et al., 2013).

There is a world where 56% (4.38 billion) of the population approaching 8 billion are internet users, 45% (3.48 billion) are social media users and 42% (3.25 billion) are mobile technology users. Although social media has been taking place in human life for a short time, people share many things that they once regarded as intimate with their spouses and friends, as well as millions of people they do not recognize, and this sharing increases the time spent on the internet with the addiction follow-up. Because people use social networks to meet many basic needs such as finding a job, making new friends, shopping or improving themselves; this makes social media different and important (Evans 2008; Lietsala & Sirkkunan 2008; Onat & Alikılıç 2008; Anklam 2009; Komito & Bates 2009; Lee & Cho 2011). At this point, the question are social networks essential? It has raised the question of whether virtual environments and social media are among the main problems of people. This is because many technology-addicted people address the needs of social networks even before the lower physiological needs. Maslow's hierarchy of needs is based on the principle that it is meaningless to meet higher needs without meeting lower needs. In this context, it is emphasized that the need hierarchy should be updated by placing today's needs such as wi-fi, battery status, internet and social networks which expresses not to be away from technology on the ground floor of Maslow's hierarchy of needs; It is the subject of scientific research that social needs are tried to be met through social networks (Statista, 2016). In this context, Ruttledge (2011) proposes a restructured version of Maslow's theory that regulates the need for connectivity in a hierarchical structure. According to him, the need to belong is not a third stage need, but a basic need and all needs depend on the interconnection of people. The following scheme proposes a more realistic multipath model through social connections to meet psychological needs.

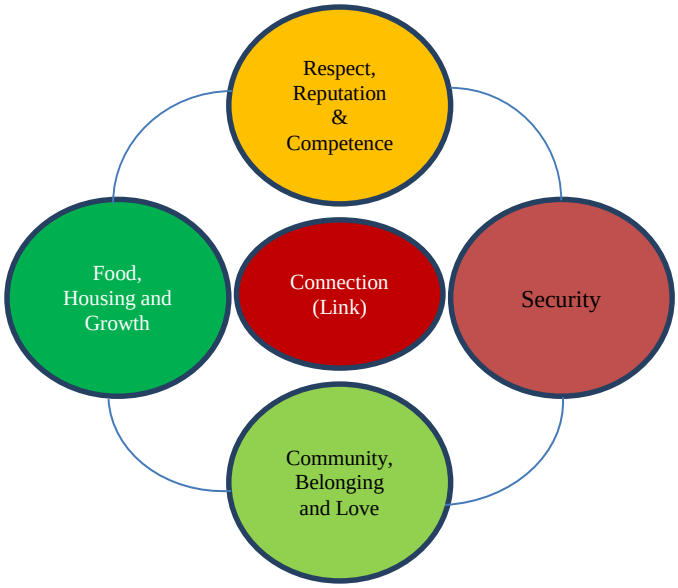

Figure 1. A reconstructed version of Rutledge, which discusses the importance of connectivity in Maslow's model.

The world is evolving towards the days when these rapid technological developments will change the way people live and the structure of societies. While societies are facing these changes, how the pyramid of needs will be affected should not be ignored. Social networks have become virtual environments where people become addicted to receiving more likes or retweets by someone. Therefore, the number of examples that are frequently encountered in social media and which often becomes meaningless to people becomes a phenomenon increases with each passing day. As a result, such dependent individuals become unable to move to the next step by being stuck in the step of belonging, respect and reputation, and their development towards higher level needs and behaviors are also hindered by themselves. In this context, the prohibition of social media (Fletcher, 2019) should not be seen as an option, but the steps to be taken to reduce these deprivating effects to personal gain should also be considered as major and attractive challenges (Friedman, 2014). It is known that individuals of all ages are active users of social media, this use involves both benefit and harm together and in this context, it is known that the use of social media by young people, especially middle school and high school students, is more vulnerable to these risks. The main reason for this is that each new generation has more effective features than the previous generation, especially in the context of learning and analysis. It is seen that Alpha generation individuals are more active in establishing technology usage and social connections over the network than middle school students who are included in generation z, especially considering the fact that Alpha generation individuals will be secondary school students after a few years. In fact, this is supported by the fact that many of the Alpha individuals are active social media users and even phenomena, especially with family support. Therefore, they are intertwined with virtual risks at any moment.

According to age-related usage statistics, it is seen that individuals' access to virtual environments is constantly increasing as an indispensable daily life activity for individuals from the age of very young according to age-related usage statistics (We are Social, 2017; We are Social, 2018) We are Social, 2019). The situation in our country is in parallel with the situation in the world. TÜİK Household 2012, 2015, 2018 reports indicate this situation (TÜİK, 2018; TÜİK, 2019). The immense integration of virtual environments into people's daily lives has a huge impact on primary school, middle school and high school students, including preschoolers; they may leave them open, ineffective or vulnerable to a number of virtual risks whose impact is known or unpredictable. Because the internet, social media, virtual environments and so on. all network structures are tools that accommodate both benefit and harm according to their location and usage. Therefore, this aspect of virtual environments should be evaluated within the scope of risk. Because risk, advantage and disadvantage, threat and opportunity, is a concept that includes danger and opportunity (Arslankara & Usta, 2018). Risk is defined as the

likelihood of a hazard or opportunity to occur. In this respect, risk consists of two dimensions. The first is “danger” and the second is “opportunity” (Giddens, 2000).

Virtual risk is the result of research that the most affected age groups are younger and younger individuals (Dooley, et al. 2009; Walrave, 2011). There are many different reasons for this. Among these, the most explanatory aspect of the age factor is that these young and young individuals are present-day Z and Alpha generations and therefore carry all the characteristics of these generations. Because individuals born in the period from 2000 to 2010 Z generation; Individuals born after 2010 are considered as Alpha generation (Tarhan, 2019; Kleinschmit, 2019). Each new generation is classified according to certain characteristics compared to the previous generation. Accordingly, the Z-belt and the Alpha-belt are individually more entrepreneurial than I-centered. Easier and more comfortable, more hasty and impatient, self-focused generation. They are highly prone to technology. Because the Z and Alpha generation are also digital natives. Therefore, they are more prone to virtual risks than their predecessor, Y, X, Baby Bloomer or Silent generation. In addition, children born in 2010, the pioneers of the Alpha generation, will be educated as secondary school individuals in two years after 2021 according to the education system of our country. The majority of the parents of the Alpha generation are parents who are subject to Generation Y. The fact that these parents are digitally indigenous, similar in many ways to the Z and Alpha generations, and the sharp separation from their predecessor X, Baby Bloomer and Silent generation in the context of child rearing, many Alpha individuals are extremely familiar with the technology and have a clear command of these technologies. made them easier. Therefore, it is stated by the families and teachers that the vast majority of these individuals are not family-controlled, such as the Z generation, whose parent is the X generation, whose parents are active social media users and many more are social media phenomena or Youtubers. Therefore, it is not possible for Z and Alpha generation individuals to avoid virtual risks. Because all these digital and virtual environments are among the most basic needs especially for individuals who are born in technology. This situation motivates individuals against these needs. The individual is strongly motivated against the need that is lacking in himself. For example, the thirst motive of a very thirsty person will be much stronger than the thirst motive of the normal thirsty individual.

Psychological, social and emotional needs such as belonging, acceptance, love and respect, which people adopt as values, exceed the limits of privacy in terms of social media, desire to be followed and liked by shares, desire to approve their actions etc. In this context, it is of utmost importance to meet these needs, which individuals value as vital activities. The reason for this situation is due to the fact that every unfulfilled need can cause frustration, increase boredom and stress, and lead to many psychological diseases with various social problems and create pathological societies (Maslow, 1943). For example, people who cannot live without sharing anything on social media have been diagnosed with Histrinoionic Personality Disorder. This social media disease is often seen in people who keep attention, are approved by social media users and share everything they do on social media. The term medicine used in psychiatry corresponds to the concept of somatization disorder. Somatization disorder is the way people describe their inner conflicts in different ways. The individual always wants everyone to praise himself, to find him beautiful or handsome, to like and to approve of his actions. To achieve this, they make everything exaggerated and always seek innovation and excitement (Özen et al. 2010). Another social media disease is Fomo. Fomo can be briefly described as the fear of abduction in virtual environments. The Fomo (Fear of Missing Out) disease, which has entered the literature especially with the Z generation, is due to the fact that individuals have missed the developments in virtual environments or that the tablet, phone and computer have the fear of running out of charge. In such individuals, social media is again brought to a basic need and food and sleep are sacrificed, but never tried to stay away from social media. These people wonder what people do in virtual environments, but when they meet with family members or friends, they do not leave mobile devices aside and communicate with people face-to-face and verbal (Franchina et al. 2018). WhatsAppitis (Keyboard Disease), RSI (Repetitive Strain Injury), Hikikomori Phenomenon, Ego Surfing, Blog Spoofing, Youtube Narcissism, Myspace Imitating, Google Stalking, Cyberhondric, Photolurking, Comedialism, Cracked, Cheesepherd, Chrysograph, Disease, Jomo Disease and Selfitis diseases have entered the literature as technology, internet and social media diseases (Guerrero, 2014; Tekayak & Akpınar, 2017; Castro & Torres, 2018; Olcay, 2018).

Therefore, it is of great importance that the social media and internet usage of these individuals living together with virtual risks - although increasingly difficult - is controlled and monitored by their parents. In this context, the second biggest responsibility falls to the educational institutions. The primary responsibility of educational institutions is to meet the basic educational needs of individuals (basic life and social skills, universal and social

values education, etc.). Although individuals of this age are more open to development in terms of acquiring and applying many skills and behaviors than their predecessors, they are exposed to many mistakes and mistakes due to their developmental periods. However, in this regard, families and individuals in the Z and Alpha critical thinking, analytical thinking, computer thinking skills and relationship skills, which are sub-dimensions of social emotional learning, such as early acquisition of skills that will keep their virtual risk perceptions; these skills will be made possible by the education that will be started first in the family and then the correct and beneficial use of technology which will be gained in primary and then secondary schools. In the pre-school and primary school years, unplugged coding activities based on Information Technologies and Software course actively support these thinking skills; in the following years, starting with the right curriculum and support at an early age, whether in online or classroom education, supported by different software languages supported by coding and robotics disciplines; what should be done in family or education environments is not to be banned by the prohibition of multi-directional virtual devices or devices such as social media or telephone. needs to be provided with. For this purpose, first of all, the family and then the administrators and teachers in the understanding of school management and discipline have great responsibilities. It is obvious that awareness and perception levels of families against virtual risks are very important and parents' awareness raising activities against social media consumption (Arslankara & Usta, 2019) are obvious.

In the light of all these contexts, the main problem of the research is that individuals of the Z and Alpha generations are intertwined with such virtual risks and do not have sufficient knowledge and awareness.

Therefore, the aim of the study was to adapt the Virtual World Risk Perception scale, which was previously developed to determine the perceptions of high-school students' virtual risk, to the secondary school level. The basic question that is sought in order to achieve this goal is as follows:

1- Is the Virtual World Risk Perception Scale a valid and reliable scale that can be used at secondary level?

Method

In order to examine the validity and reliability of the Virtual World Risk Perception Scale in the study, it was collected and analyzed from the individuals in the study group defined as the target group of the study.

Study Group

The study group of the study consists of 7th and 8th grade students in secondary schools in Sakarya. A total of 261 students participated in the study. The distribution of students according to gender and class is summarized in Table 1.

Table 1. Distribution of Working Group by Gender and Departments

Grade	Female	Male	Total
7	77	74	151
8	69	41	110
Total	146	115	**261**

Measuring tool

The data of this study were collected by using the Virtual World Risk Perception Scale, which was developed by Arslankara & Usta (2018) and originally named "Development of Virtual World Risk Perception Scale" (VWRPS). The original scale was based on data obtained from 390 high school students (176 girls, 214 boys) from different high schools in Ağrı (Vocational High School, Technical High School, Anatolian High School, İmam Hatip High School). In this study, the validity and reliability of the scale developed at secondary school level was examined. In the adaptation study, the scale was applied to 261 secondary school students. In order to evaluate the psychometric properties of the scale, Cronbach's alpha (α) values were calculated for each factor and confirmatory factor analyzes were performed.

The scale developed by Arslankara & Usta (2018) and applied on high school students consists of 26 items and five factors. As a result of the exploratory factor analysis, the factor structure of the scale, which was determined to consist of 5 factors, was validated by confirmatory factor analysis. As a result of the CFA, it was concluded that the values of the scale model were in agreement with the data. Factors included in the scale, number of items and internal consistency coefficients are summarized in Table 2.

Table 2. Number of items and internal consistency coefficients by factors

Factors	Number or Items	Cronbach's Alpha	Sperman Brown	Guttmann Split Half
F1 - Virtual corruption	7	.63	.66	.65
F2 - Virtual wear	6	.80	.76	.75
F3 - Virtual facility	4	.68	.67	.67
F4 - Virtual opportunity	5	.69	.57	56
F5 - Virtual awareness	4	.63	.64	.64
Total	26	.82	.72	.86

Scale Adaptation Phase

The most important phase of the scale adaptation studies is considered as the translation phase according to the general acceptance (Hambleton & Patsula, 1999; Karakoç & Dönmez, 2014). However, since the language of the original scale is Turkish, no translation stage is required. The target group of the original scale is high school (secondary school) students. Therefore, the suitability of the language used in the scale for secondary school students was reviewed by the researchers. A Turkish Language and Literature and a Turkish teacher checked the language level; three students from each grade level were asked to read the scale items one by one and it was concluded that the students could understand all the expressions in the scale clearly and clearly. Therefore, after the draft scale form was prepared, the scale was applied to 261 secondary and 7th grade students in order to test the factor structure, construct validity and reliability and item discrimination of the scores. According to the obtained data, the factor structure that is valid for this form of the scale is discussed.

The data obtained from the scale applied to the study group were subjected to statistical analysis and processed into SPSS and AMOS software for validity and reliability analysis. The validity of the scale's original factor structure indicated in Table 2 was found to be valid at secondary school level with the confirmatory factor analysis. The basic parameter values obtained by confirmatory factor analysis showed that the scale's factor structure provided general criteria for model-data fit at secondary school level. Therefore, there was no need for exploratory factor analysis. Cronbach Alpha, Sperman Brown and Guttmann Split Half analyzes were performed on the data to calculate the reliability of the scale.

Data Analysis

In confirmatory factor analyzes, model-data fit is tested and hypotheses established to examine the relationship between variables are tested (Kline, 1994; Tabachnick & Fidell, 2001). Factor structure of the Virtual World Risk Perception Scale was examined and tested by confirmatory factor analysis. As a result of the analysis, a large number of fit indexes are used to evaluate the validity of the model. The most frequently used fit indexes are Chi-Square Compatibility Test, Goodness Fit Index (GFI), Corrected Goodness Fit Index (AGFI), Square Root of Mean Errors (RMR or RMS) and Mean Square Root of Approximate Errors (RMSEA) (Gülbahar & Büyüköztürk, 2008).

Acceptable criteria for these values calculated by confirmatory factor analysis are stated as follows: Norm2 / sd ratio which is expressed as normed chi-square is less than 3 is accepted as an indicator of perfect harmony (Şimşek 2007; Yılmaz & Çelik, 2009). The fact that the $\chi 2$ / sd ratio is less than 5 is accepted as an indicator of the goodness of the tested model with real data (MacCallum et al., 1996; Sümer, 2000). In addition, GFI and AGFI values of model data fit indexes are expected to be above 0.90, and RMS or standardized RMS and RMSEA values

are expected to be less than 0.05 (Anderson & Gerbing, 1984; Simsek, 2007). Item total correlations were examined for item discrimination powers. Cronbach Alpha, Sperman Brown and Guttmann Split Half values were calculated for factor structure and subscales.

Each item was scaled as non-reflective (1), low reflective (2), medium reflective (3), highly reflective (4), completely reflective (5). 23 of the items were positive and 3 were negative. The lowest score that can be obtained from the scale is 23 while the highest score is 115. High scores indicate that the risk perception level in the virtual world is high. Items 4, 5 and 8 are reverse (negative-negative) coded. Other items other than these three items are positive statements (Annex-1).

Findings

The construct validity, item-total correlations and internal consistency coefficients were calculated within the framework of the validity and reliability analyzes of the Virtual World Risk Perception Scale and the findings are given below.

Validity Findings

The regression values produced for each item as a result of confirmatory factor analysis are presented in Table 3.

Table 3. Standardized regression loads of the scale

Number of Items	Load rating	**Number of Items**	Load rating
Nm7	.71	***Nm26***	***.50***
Nm2	.66	**Nm20**	.67
Nm6	***.50***	**Nm19**	.68
Nm3	.51	**Nm18**	.57
Nm8	.71	**Nm9**	.62
Nm1	.55	**Nm10**	.64
Nm5	.55	**Nm4**	,51
Nm24	***,43***	**Nm22**	.68
Nm25	.66	**Nm23**	.71
Nm21	.70	**Nm17**	.70
Nm13	.65	**Nm11**	.51
Nm15	.60	**Nm14**	.56
Nm16	.59	**Nm12**	.53

Standardized estimated regression loads should be measured around 0.70 load values. However, the three items in the original scale (Nm6, Nm24, Nm26) were considered to be excluded from the scale as the standardized regression values were low. Some of the other substances are also slightly low, up to 0.70. However, as explained below, it was decided that only low-load items other than these three items do not need to be removed from the scale, as the well-being values of the scale were within acceptable limits. Thus, it is thought that the scope validity of the measuring tool will be maintained.

The results of the confirmatory factor analysis using the maximum probability technique without limitation showed goodness of fit values; Chi Square / Freedom Degree (CMIN / DF) = 2.047, X2 = 561.643, p <.000, RMSEA = .063, S-RMR = .092, GFI = .90, AGFI = .87, CFI = .90, NFI = .84 and IFI = .89. According to these values, it can be said that all good values are acceptable values (Munro, 2005; Schreiber et al. 2006). Therefore, this model indicates that the factors are validated by the data. Factorial model and factor-item relationship values of the scale are given in Figure 2.

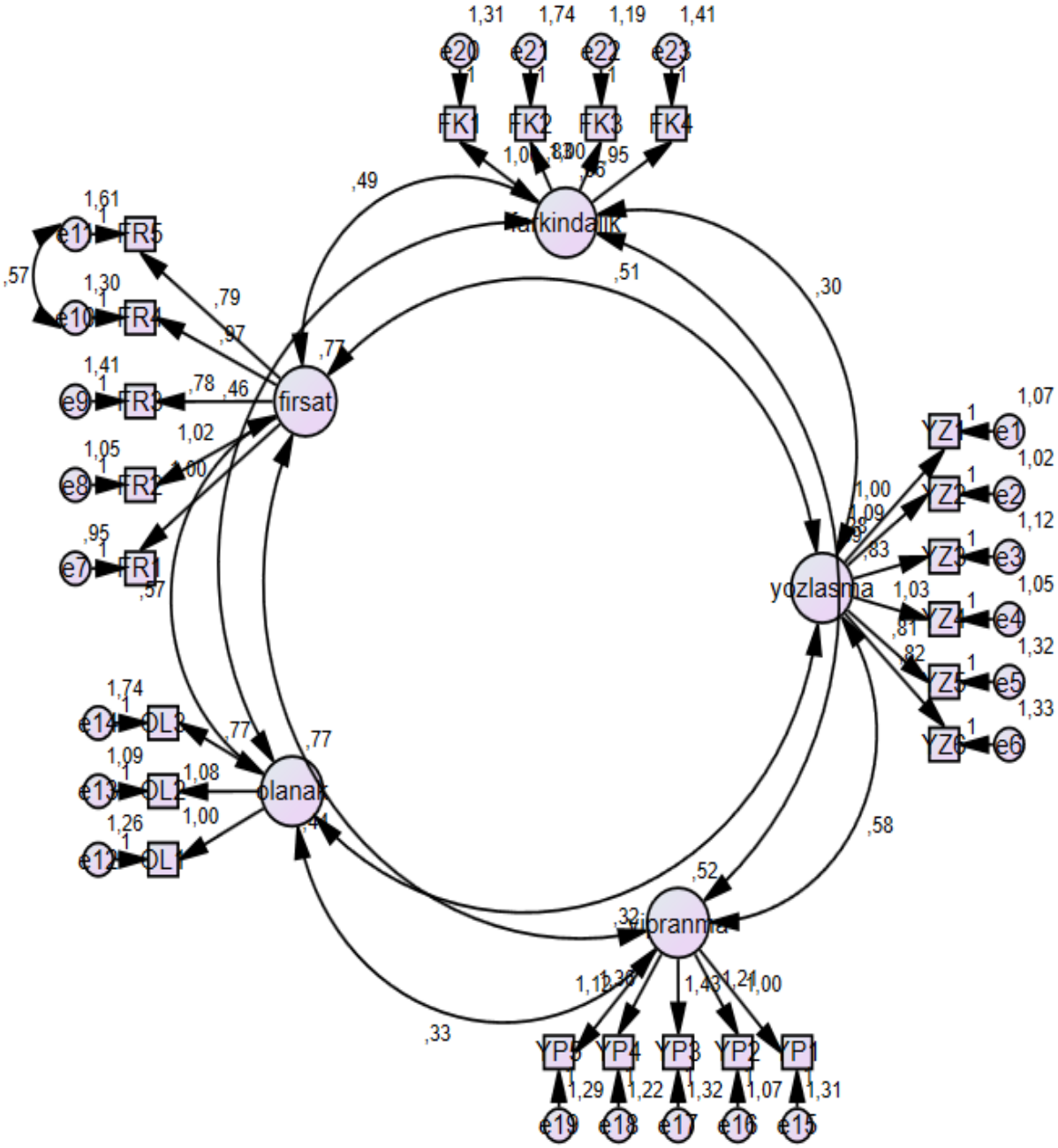

Figure 2. Diagram of confirmatory factor analysis of the scale

Findings Regarding Reliability Level

Reliability analysis of the scale according to factors and as a whole; Cronbach Alpha reliability coefficient was calculated by using Sperman-Brown and Guttmann Split-Half. The reliability analysis values of each factor and overall scale are given in Table 4:

Table 4. Reliability analysis results related to the overall scale (secondary school level)

Factors	Number of Items	Cronbach's Alpha	Sperman Brown	Guttmann Split Half
F1 - Virtual corruption	6	.65	.69	.68
F2 - Virtual wear	5	.87	.77	.73
F3 - Virtual facility	3	.83	.73	.67
F4 - Virtual opportunity	5	.76	.63	.67
F5 - Virtual awareness	4	.71	.73	.71
Total	23	.85	.75	.83

In Table 4, the Cronbach's alpha reliability coefficient of the scale, which was adapted to 23 items and maintained as a result of five-factor structure, was measured as 0.851. It was determined that the values related to the factors were between 0.653 and 0.874. The lowest Cronbach's Alpha value is the Virtual Corruption factor. Normally, this value is expected to be 0.70 and above (Büyüköztürk, 2007). However, it is possible to say that the internal consistency of the scale is acceptable due to the fact that the total reliability score is sufficient, in other words, the scale can make reliable measurements.

Discussion and Conclusion

When the variables predicting the perception of virtual risk are considered, it is known that problematic internet use is a significant predictor for each audience. Therefore, it is thought that individuals who are aware of the threats and dangers of information and communication technologies and who have been exposed to cyber bullying have a high level of sensitivity to virtual risks. It is of great importance that present-day adolescents, who are referred to as the Z-generation, are knowledgeable and cautious about the threats and dangers they will create as well as the advantages of technology. Parents are also expected to be aware of the risks associated with virtual bullying, which is directly related to the threat dimension of virtual risk. Therefore, considering the students who spend most of their day in schools, it is seen that it is very important to acquire the necessary knowledge and ethics on the basis of the project feet regarding the technology integrations that are tried to be done in educational environments (Ayas & Horzum, 2012).

In many studies, it is seen that males exhibit more risky behaviors in virtual environments while using information technology tools compared to women, but behave more cautiously and perceptively. It is seen that the proportion of male students is higher in problematic internet use (Çelik & Odacı, 2012, Zorbaz & Tuzgöl Dost, 2014). Therefore, it can be stated that gender is an important factor on virtual risk perception. On the basis of this, it can be said that more men have easy access to information technology tools depending on our social culture and that the internet cafe culture is mostly addressed to men.

In this study, "Virtual Risk Perception Scale" was adapted to the secondary school level in order to determine students' virtual risk perception levels. The scale is a five-point Likert type and can be grouped under five factors. Factors included in the factors; "Completely reflecting", "Very reflecting", "Moderately reflecting", "Less reflecting" and "Not reflecting at all" were scaled to reveal the level of students' perception of the scale items. It was applied to 261 students in 7th and 8th grade.

Confirmatory factor analysis was performed to confirm the factor structures of the scale. At this stage, the regression loads of the items were measured and it was decided to exclude the three items with very low values from the original scale. Therefore, the original version of the scale was reduced to 23 items. According to the findings obtained from the confirmatory factor analysis, the observed values of the scale model showed acceptable agreement, in other words, this model was confirmed by the data. In order to ensure the content validity and appearance validity, the necessary arrangements were made by taking the field experts' opinions before the implementation stage and the scope, appearance and language validity were ensured.

Cronbach Alpha, Guttmann Split Half and Sperman Brown reliability coefficients were analyzed for internal consistency of the Virtual World Risk Perception Scale. Cronbach Alpha, Guttmann Split Half and Sperman Brown reliability coefficients for the whole scale were measured as .85, .75 and .83 and it was concluded that the reliability levels were quite good.

This study was adapted by studying middle school students. The scale can be used to measure the risk perception levels of secondary school students in relation to the virtual world with its combined structure and 5 sub-dimensions. In addition, the sub-factor scores of students' "virtual corruption", "virtual wear", "virtual opportunity", "virtual opportunity" and "virtual awareness" dimensions can be measured in terms of virtual risk perception. It is important to carry out new researches by considering the different target audiences and dimensions of the original scale to measure the virtual risk perceptions of different target audiences and to see the similarities and differences between these target audiences.

According to the results of the study, it is recommended that educational sciences, psychology and technology researchers, education administrators and teachers should use the scale in all kinds of studies that will be conducted on the risks related to students' virtual environments.

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Appendix: Virtual World Risk Perception Scale

VIRTUAL WORLD RISK PERCEPTION SCALE (SECONDARY SCHOOL LEVEL)	Doesn't reflect at all	Reflects little	Reflect Moderately	Reflects a lot	Fully reflects
1. I can be deceived by individuals in virtual environments.					
2. If my commitment to virtual environments increases, I can avoid intimate conversations in real life.					
3. I may have to share with the people I do not know, even if I want to ask about the problems and troubles I have experienced.					
4. I feel comfortable talking to people I have never met.					
5. I can avoid real life problems while in virtual environments.					
6. If I am in touch with virtual environments for a long time, I may experience psychological disturbances.					
7. In my virtual chats, the universal rules (truth, honesty) that exist in the solution may lose their importance.					
8. People in virtual environments may seem close to me.					
9. Knowing that someone will definitely see my thoughts and ideas that I share in virtual environments can relieve me psychologically.					
10. As a result of losing a lot of time in the virtual world, I may encounter unsuccessful results in my lessons.					
11. Since it is easy to access information in virtual environments, I can save time..					
12. I can turn into a brand-addicted individual with the fact that the advertisements that are constantly published in the virtual world take place in the subconscious.					
13. Thanks to virtual environments, I can find my old friends.					
14. As a result of unlimited conversations, I can lose my feelings such as privacy, privacy and embarrassment.					
15. As a result of the fact that I can easily access everything in virtual environments, I can get away from the struggle against real life obstacles.					
16. I can contribute to my personal development in terms of control if I can plan my time in virtual environments well.					
17. It makes me comfortable to discuss in virtual environments.					
18. I can actively develop my solidarity culture by using social media.					
19. Thanks to social media, I can develop my critical thinking skills using my research capacity.					
20. I can get caught up in gossip culture because of social media.					
21. Thanks to the virtual friendships I will establish, I can recognize new cultures.					
22. I can make new friendships through social media.					
23. I can experience spiritual wear and tear because of people unconsciously surfing on social media.					

NOTE: This scale can be used in all kinds of scientific studies, provided that the authors receive the permission via e-mail.
vbilalarslankara@gmail.com, ertugrulusta@gmail.com