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The Scale of Teacher Perception of Gifted Students: a Validity and Reliability Study

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Abstract

The purpose of this study was to develop the Scale of Teacher Perception of Gifted students. The validity and reliability studies were conducted. The sample consisted of 175 randomly selected primary school teachers. Within the scope of the scale validity studies, contextual validity was determined, based on specialist opinions, while the factor analysis was used for determining the structural validity. The scale included five sub-dimensions and 33 items. The sub-dimensions were as follows: willingness to learn, learning abilities, expression characteristics, personality characteristics, learning characteristics and mental characteristics. The overall Cronbach alpha reliability coefficient of the scale was 0.95. The validity and reliability studies yielded satisfactory results, so we can say that the Scale of Teacher Perception of Gifted Students can be used in the field of gifted education.

Key words: *gifted; perception; scale validity and reliability; teacher perception.*

Introduction

Recently, the contemporary education system has been responsible for discovering and empowering gifted children, many of whom go on to make an important contribution to society. Society needs gifted people who help to develop the community and contribute to the fields of humanities, economics, politics and fine art. Early identification of these individuals lead to them being more appropriately educated and directed towards professions that are more suitable to their abilities and personality characteristics so that they can be more beneficial in their communities (Caglar, 2004). An education-learning system structured in accordance with individual differences allows individuals to live in and adapt to their communities, which is beneficial to them and increases their levels of happiness, and at the same time leads to the development of society (Bozgeyikli, Dogan, & Isiklar, 2010).

Educators have an important role in identifying and developing the talent of gifted students. Early and accurate identification is the first step in providing gifted and talented students with an educational environment where they can improve their talent and maximise their potential (Darga, 2010). Schools should pay attention to student diversity, and adopt policies and strategies that meet each individual student's needs. By acknowledging diversity, schools and teachers should be able to practice educational methods that aid the fulfilment of gifted children and young people, allowing them to reach their potential, in various domains.

Bégin and Gagné (1994) have stated that Americans have held complex attitudes toward gifted students and gifted education in the history. In the American education system there has been tension between excellence and equity for many years (Gallagher, 1994). Even though Americans give priority to high achievement and art of productivity, a differentiation between superiority and inferiority in the fields of academic, political, or social domains are despised. Due to this, Americans are not comfortable about discussing the abilities, either intelligence or academic individual differences (Gallagher, 1994). Many educators perceive gifted education as involving special privileges for the already advantaged because of fears of elitism. According to public opinion, excellence and the need for equity is not stable. In this era of "No Child Left Behind," a concern about the equity of instruction and achievement appear to be a high concern about "raising the academic bar" (McCoach & Del Siegle, 2007).

In addition to these, Mönks and Pflüger (2005) have stated in their report that the recent Austrian and Spanish school law is based upon the law being enacted in the 20th century, generally during the 1960's and 1970's. The laws on giftedness and gifted education have been revised and the education of talented and gifted students has been included in the system of general education since 1990. Although Denmark, Italy and France do not have official programmes in gifted education, recently, there is a tendency towards having even more regulations and the law on individual needs related to gifted students' education (Mönks & Pflüger, 2005).

Winstanley (2006) stated that the education of gifted people is a complicated fact since social and education problems in a country have an impact on the perceptions of potential and achievement. Gifted education is always directly related to countries' historical, cultural and political contexts, and also may have an impact on gifted education policy decisions (Taylor & Kokot, 2000).

In a comparative study of teachers with and without training related to gifted individuals, the teachers who had received training were seen to encourage their students towards higher-level thinking, and used occupational pedagogical strategies. These teachers were more aware of their students' cognitive needs, as well as more creative compared to the teachers without training (Hansen & Feldhusen, 1994). Feldhusen (1997) has observed teachers of high intelligence and found them to respect individual differences and to be more focused on attainment, flexible, knowledgeable, smart, with cultural and intellectual interests, and characterized them as interested in gifted individuals.

Rogers and Silverman (1997) have conducted a study of 241 gifted children, and concluded that their IQ levels were above 160. According to their findings, gifted children had 94 percent more attention, 94 percent more concentration, 91 percent more grammatical development, 60 percent more kinaesthetic development, 48.9 percent showed a more distinctive differentiation in comparison to their peers, and 37 percent exhibited a more creative means of expression in the early stages of their childhood.

Madge (1979) pointed out that nobody has recommended that a measurement of intelligence or IQ can indicate the chances of an individual, who has become an active, responsible member of society, to fulfil a role of a community leader, contributing to humanity, or having the ability to have good relations with people. There are many human qualities such as kindness, happiness, sincerity, courage and empathy that have no relationship whatsoever with IQ. Maree and Mokhuane (2007) have implied that a high IQ alone is not equal to a high achievement in life but there are other reasons to be taken into consideration when interpreting the variance in achievement among gifted individuals, and that particular and any such discussion should include a due reference to emotional-social intelligence aspects, as well. From an emotional-social intelligence perspective, concern needs to be expressed about the lack of facilitation of developing emotional-social intelligence in schools. Across the country, headmasters appear reluctant, if not unwilling, to give time to research programmes on emotional–social intelligence (the standard excuse being that overcrowded syllabuses allow no room for facilitating 'softer' skills). Yet, professionals agree that it is highly important for individuals to be aware of their own and other people's emotions, also to recognize these emotions and to display them in a suitable way.

After all, a high IQ or aptitude alone does not mean a satisfactory achievement. IQ or aptitude may help learners achieve good marks at school, but over time, there is no denying the value of emotional-social intelligence as a better predictor of success in the workplace. Research has repeatedly shown that school achievement, aptitude and IQ predict only about nine percent of learners' future success in the workplace, while emotional-social intelligence predicts between 36 and 40 percent of such success (Bar-On, 2006). Teachers should be trained how to promote emotional-social intelligence in their classrooms, and should be encouraged to apply these skills. Since these students display ample evidence of enhanced emotional-social intelligence skills, it seems plausible to suggest that these skills contribute meaningfully to their success (Mare, 2011).

The Scales for Rating Behavioural Characteristics

Renzulli et al. (1997) have developed the *Scales for Rating the Behavioural Characteristics of Superior Students*. These scales were used in stages from middle school to high school, and their 14 sub-scales measured student ability in the following areas: learning, motivation, creativity, leadership, art, music, planning, drama,

communication, mathematics, reading, science and technology. Feldhusen, Hoover, and Sayler (1990) have also developed the *Purdue Academic Rating Scale* for secondary schools. The *Determination Measure* was applied to parents to measure their children's academic preparation and motivation (Davis & Rimm, 1998). Smutny (2000) has developed a scale entitled the *Checklist of My Child's Traits*. The scale, which includes 46 characteristics, is administered by parents, and checks if the child has acquired a certain characteristic or not. Silverman (1997-2004) has developed a measure called the *High Intelligence Characteristics* that consisted of 25 characteristics. This scale is also administered by parents. It seems clear from the literature quoted that there is a group of characteristics that differentiate gifted from non-gifted learners.

As it is seen in the literature, there are different kinds of scales related to gifted education; however, for the implementation of gifted education policies and practices in a successful way, it is important to consider teachers' perceptions and beliefs which alert schools to possible constraints they may face in the implementation. It is important to be aware of the perceptions of teachers towards gifted students while developing gifted education programmes (Davis & Rimm, 2004). The lack of knowledge and understanding about giftedness causes mistaken beliefs held by teachers about gifted education (Clark, 2002; Gross, 1993). Research findings show that teachers' lack of knowledge about educational provisions for gifted students negatively affects students' academic and social-emotional development (Gross, 1993, 1994; Gallagher, 1996).

The development of a *Scale of Teacher Perception of Gifted Students* was required since literature research shows that insufficient measures exist to determine teacher perceptions of gifted students, thus creating a major gap in the provision of data for determining the current situation with regards to teacher perceptions of gifted students. This study was therefore conducted on teachers who have an important role in educating individuals who will be beneficial to the society. So the purpose of this research was to develop a *Scale of Teacher Perception of Gifted Students.*

Methodology

Participants

Participants in this research consisted of 175 teachers working in primary schools in North Cyprus. The stratified random sampling method was used to determine the participants. The majority of the research participants, i.e. 69.1 percent (n=121) were female, and 30.9 percent (n=54) were male. There were 25.1 percent of teachers with between one and five years of working experience, 19.4 percent with between 6-10 years, 23.4 percent had between 11-15 years of experience, 19.4 percent had between 16-20 years, and 12.6 percent said they had 21 years and more. While 33.1 percent of the teachers reported they had participated in gifted-related training, 66.9 percent of them reported they had not.

Data Analysis and Procedure

The Scale of Teacher Perception of Gifted Students consisted of two parts, the demographic information, and the teacher perceptions of gifted students. The demographic information related to the gender of the participants, their teaching experience and prior training on gifted individuals. The second part determined the teachers' perceptions of gifted students.

The aim of the study was the use of a scale to determine primary school teachers' perceptions of gifted students. During the process of forming the measurement items, 20 teachers with 10 or more years of teaching experience from 20 different schools under the Ministry of Education were asked to write compositions regarding their perceptions, feelings and behaviour related to gifted students. While forming the scale items, literature sources related to scale development and perception scales in connection to gifted students were researched, and information was gathered in relation to the development of the perception scale and studies conducted on gifted students.

Following a specialist and content analysis carried out on the teacher compositions, the draft scale was developed and 50 perception items were formed relating to the characteristics of gifted individuals. During the scale development process, especially while searching for answers related to its contextual validity, a consensus of 90 percent was established for every question among the specialists whose opinions were sought. For contextual validity, at least five, and at most 40 specialists' opinions were required (Yurdagul, 2005). For this reason, in the process of determining contextual validity, 15 specialists' opinions were considered sufficient. Regarding the Turkish grammatical rules and clarity, the scale items were examined by two language specialists. Following the opinions of specialists and teachers, the draft consisting of 50 items was re-structured and included 43 items.

The data collecting tool trial form, which was prepared for the validity and reliability analysis, was administered to the pre-trial group of 175 teachers. In the study, a 1-5 point Likert scale was used for the reactions towards the perception items. The participants were asked to rate each item on a five point scale: strongly disagree, disagree, indecisive, agree or strongly agree.

The scale was administered to the teachers working in primary education. As a result of the statistical analysis of 43 perception items, 10 had a factor weight under 0.40 and were eliminated from the scale, leaving 33 items in the final version of the data collection tool. In the studies on scale development, when forming the factor pattern, it is stated that factor weights ranging between 0.30 and 0.40 could be taken as the base cut-point (Coklar & Odabasi, 2009; Gurbuzturk & Sad, 2010). The base cut-point in this study was accepted as 0.40. In addition, for items where the weight value was over 0.40, two factors were included in the scale; however, the items having the weight value under 0.40 were omitted from the scale.

For the analyses of the scale validity and reliability, a normal distribution analysis was carried out and mean, medium, mode, standard deviation, variance, minimum and maximum values, range, skewness and kurtosis calculations were derived.

Results

Validity and Reliability Analyses

A normal distribution analysis was conducted to investigate the distribution of the scale validity and reliability. When 10 items with a base cut-point below 0.40 were eliminated from the study, the scale consisted of 33 items. As the scale consisted of 33 items, the minimum points attainable were determined as 33, the maximum points were determined as 159 and 126 for the range. The mean of the scale was calculated at 118.22, the median at 119 and the standard deviation at 19.60. In the carried out analyses the skewness value was calculated as -.92, and the kurtosis value was calculated as 2.12.

The KMO and Bartlett's sphericity testing was used to assess if the data and sampling size were suitable for the factor analysis. For the data to be sufficient for the factor analysis, the minimum KMO value had to be above 0.60, and the Bartlett's sphericity testing had to be significant (Buyukozturk, 2004). In this study, the KMO sampling relevance coefficient was calculated as 0.87. Since the KMO value was close to 0.90, it can be stated that the data set suitability to the factor analysis was close to perfect (Hutcheson & Sofroniou, 1999). Approximately X^2 value for the BTS was found to be 6630.893 ($p<.001$) for the study; therefore, it reflects that the results were appropriate for the factor analysis according to the KMO and Bartlett's sphericity testing.

As a result of the analysis, the communalities differed from 0.43 and 0.82. Also, the initial Eigen values of 9 out of 43 items, which were added to the analysis, were over 1. These 9 factors were gathered in this scale. The total variance of the scale is explained in detail in Table 1.

Table 1

Results of factor analysis with total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	17.86	41.55	41.55	17.87	41.55	41.55	7.84	18.24	18.24
2	3.26	7.57	49.12	3.26	7.57	49.12	5.55	12.92	31.16
3	2.35	5.48	54.60	2.35	5.48	54.60	5.26	12.22	43.38
4	1.87	4.35	58.95	1.87	4.36	58.95	5.07	11.79	55.17
5	1.50	3.50	62.45	1.50	3.50	62.45	3.13	7.27	62.45
6	1.36	3.17	65.62						
7	1.20	2.80	68.42						
8	1.18	2.74	71.16						
9	1.00	2.34	73.50						

Extraction Method: Principal Component Analysis.

As seen in Table 1, the cumulative percentage for nine factors was determined to be 62.45 percent. As for the total and loadings percentage of variance, for the first factor it was calculated to be 17.86 and 41.55 percent, 3.26 and 7.57 percent for the second factor, 2.35 and 5.48 percent for the third factor, 1.87 and 4.35 percent for the fourth factor, 1.50 and 3.50 percent for the fifth factor, 1.36 and 3.17 percent for the sixth factor, 1.20 and 2.80 percent for the seventh factor, 1.18 and 2.74 percent for the eighth factor, and

finally for the ninth factor 1.00 and 2.34 percent. The variance percentage for this study was found to be above 60 percent and, therefore, within the acceptable boundaries. As a result of the Varimax rotation, the percentage of variance for five factors was calculated to be 18.24 percent for the first factor, 12.92 percent for the second factor, 12.22 percent for the third factor, 11.79 percent for the fourth factor, and 7.27 percent for the fifth factor.

Table 2

Mean, factor and reliability results of teachers' perceptions

Items and Factors	Mean	SD	Item Total	Component factor load	Varimax factor load
Factor I: Willing to Learn α=0.929					
7. They are very sensitive to events around them and in their environment.	3.92	.94	.786	.773	.721
36. They are patient.	3.85	.95	.719	.656	.715
11. They want their rules to be accepted.	3.82	.95	.718	.673	.709
18. They like collecting stones and insects.	3.72	1.01	.644	.656	.597
25. They are perfectionists.	3.68	.95	.732	.674	.670
31. They are curious.	3.74	.91	.775	.782	.666
34. They are very sociable.	3.90	1.00	.826	.794	.702
27. They want people to respect their interesting ideas and dreams.	4.03	.99	.838	.836	.687
38. Their reasoning talent is very sophisticated.	3.40	.86	.613	.586	.652
Factor I Total	**3.78**	**.76**			
Factor II: Expression Factors α=0.896					
42. They express details in their ideas.	3.63	.93	.577	.621	.466
24. Eager to take part in reading and writing activities.	3.65	.90	.632	.621	.528
2. Physically more developed compared to their peers.	4.02	.86	.608	.574	.720
30. Ask too many questions.	3.90	.91	.786	.555	.630
12. Like reading books that are one-two years above their grade.	4.03	.87	.791	.762	.685
40. Like a challenge.	3.64	.94	.571	.531	.508
41. Have the talent to openly present detailed and productive ideas.	3.88	.82	.701	.683	.526
43. Easily learn and remember.	4.02	.81	.780	.731	.700
Factor II Total	**3.85**	**.67**			
Factor III: Personality Factors α=0.907					
14. Physically energetic.	3.38	.85	.541	.461	.601
26. They have a highly-developed imagination.	3.57	.86	.657	.556	.730
28.They are so sensitive that their feelings can get hurt easily.	3.72	1.05	.802	.724	.687
23. Don't like to be ordered to do something.	3.56	1.07	.823	.699	.780
22. They place themselves as leaders in groups.	3.73	.97	.797	.719	.741
6. Make friends with people that are one-two years older than themselves.	3.97	1.03	.840	.800	.699
Factor III Total	**3.61**	**.80**			
Factor IV: Learning Factors α=0.861					
16. Successful in dance, drama and music.	3.61	1.01	.644	.660	.607
19. They don't need to study.	3.65	.86	.610	.553	.590
20. Can remember something they heard for a long time.	3.60	.97	.617	.412	.747
21. Can remember something they read for a long time.	3.64	.90	.611	.670	.468
8. They have their original interests.	3.63	1.02	.700	.541	.780
10. Have the feature to question existing rules.	3.53	.93	.743	.616	.784
Factor IV Total	**3.61**	**.73**			
Factor V: Mental Factors α=0.680					
9. They have acquired abstract concepts regarding things such as dinosaurs, numbers and space.	2.81	1.17	.434	.424	.561
15. Have high mental energy.	3.61	.80	.489	.547	.524
13. Like solving puzzles, mazes and other mental games.	3.66	.90	.608	.636	.682
39. Have a high ability to achieve academic success.	3.26	.87	.366	.420	.611
Factor V Total	**3.33**	**.67**			

As a result of the analyses, the calculated mean for each scale item was between 3.40 and 4.03, whereas the standard deviations were between 0.81 and 1.07. The total correlations of the scale items were found to be between 0.54 and 0.83. In this study the item total correlation values were over 0.20 and, therefore, within the acceptable limit. The calculated mean, standard deviations and item total correlation values for each item found in the scale are presented in Table 2.

In order to determine the scale reliability, the Cronbach (α) reliability was used for the whole scale and for every single sub-dimension resulting from Varimax rotation. The Cronbach alpha is the most commonly used measure for the assessment of reliability because of its convenience and efficiency. During the selection of the items included in the scale, the main criterion was that the item total correlation coefficient was over 0.30.

The result of the analyses of the questionnaires reveals that the items were appropriate for the purpose of this study. The items were valued between 3.33 and 3.85, and the standard deviation would change between 0.67 and 0.80. The Cronbach alpha was used throughout the scale (α) 0.96. For the sub-dimension "willingness to learn" the Cronbach alpha (α) was found to be 0.93, for the sub-dimension "expression characteristics" it was found to be 0.90. For the sub-dimension "personality characteristics" the Cronbach alpha (α) was found to be 0.91, for the sub-dimension "learning characteristics" it was found to be 0.86, and for the sub-dimension "mental characteristics" the Cronbach alpha (α) was found to be 0.68.

The results of the research illustrate that the scale had a reliable and a consistent structure in all dimensions. Thus, the internal consistency reliability of the measures shows that it was considered as good. According to researchers (Hung et al., 2010; Sekaran, 2003), the closer the reliability coefficient is to 1.0, the better is the reliability. In general, the reliabilities under 0.60 are considered poor, those between 0.60 and 0.70 are acceptable, and those over 0.80 are good.

Table 3

T-test results of differences between males and females on scale dimensions

		N	Mean	SD	t-value	Sig.
Willing to learn	Female	121	33.43	5.11	1.29	.19
	Male	54	32.31	5.69		
Expression features	Female	121	26.32	4.65	2.04	.04
	Male	54	24.72	5.06		
Personality features	Female	121	23.91	3.43	1.69	.09
	Male	54	22.87	4.42		
Learning features	Female	121	25.31	3.14	2.57	.01
	Male	54	23.87	3.99		
Mental features	Female	121	16.42	2.54	1.94	.05
	Male	54	15.57	2.94		

As seen in Table 3, a statistically significant difference was only apparent between the teachers' gender and their perception of the expression features of gifted students, and again between the teachers' gender and the learning features of gifted students ($p<.05$).

Conclusion and Suggestions

The education of gifted individuals is important because of the contribution they make to the development of science and the presentation of new ideas to society, so teachers need to be able to identify gifted students and prepare the necessary learning environment. This study aimed to develop a scale to measure teachers' perceptions of gifted students. As a result of the analyses carried out, a 33-item perception scale was developed.

In order to determine the scale factorial structure, an investigation was carried out and it was observed that the scale items collectively comprised five factors. Following this, the items under these factors were examined and five factors were named in line with the characteristics they were assessing: willingness to learn, linguistic characteristics, personality characteristics, learning characteristics and mental characteristics. The findings from the study pointed out that the scale has a high level of validity and reliability.

The findings derived from the study show that the scale has a reliable and consistent structure, as a whole and in terms of its sub-dimensions. From the results of the study, it is assumed that the *Psychometric Properties of Perceptions of Gifted Students' Scale* will provide reliable findings in the field.

While there was a positive relation between teachers' perceptions of the gifted and gifted education, teachers' attitudes towards the gifted were not affected by training in gifted education (Justman & Wrightstone, 1956; McCoach & Del Siegle, 2007). For example, there is a probability that the teachers who had training in gifted education perceive themselves as gifted and are attracted to the field of gifted education. To conclude, the training in gifted education may increase teachers' perceptions positively.

Suggestions for further research include the administration of *The Scale of Teacher Perception of Gifted Students* to groups of teachers of different ranks. The perception scale developed in relation to gifted students is important due to its ability to analyze teacher perceptions and determine related shortcomings. Following the determination of teacher perceptions of the subject matter, future studies should be carried out with teachers themselves. The dynamic development of gifted education promises that this age has been on the right path to becoming the age of the gifted child since the beginning of the twenty-first century.

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Skala percepcije nastavnika o darovitim učenicima: istraživanje valjanosti i pouzdanosti

Sažetak

Cilj ovog istraživanja bio je konstruirati Skalu percepcije nastavnika o darovitim učenicima. Provedena su istraživanja valjanosti i pouzdanosti. Sudjelovalo je 175 slučajno odabranih nastavnika osnovnih škola. U sklopu istraživanja valjanosti skale utvrđena je kontekstualna vrijednost na temelju mišljenja stručnjaka, a faktorska se analiza koristila za strukturnu valjanost. Skala se sastoji od pet poddimenzija i 33 čestice. Poddimenzije su sljedeće: spremnost za učenje, sposobnosti učenja, karakteristike izražavanja, osobne karakteristike, karakteristike učenja i mentalne karakteristike. Ukupni Cronbachov alfa koeficijent pouzdanosti za skalu iznosio je 0,95. Istraživanja valjanosti i pouzdanosti dala su zadovoljavajuće rezultate tako da možemo reći kako se Skala percepcije nastavnika o darovitim učenicima može primjenjivati u području obrazovanja darovitih učenika.

Ključne riječi: *darovit; percepcija; valjanost i pouzdanost skale; percepcija nastavnika*

Uvod

U novije vrijeme suvremeni je obrazovni sustav odgovoran za otkrivanje i priznavanje darovite djece, od kojih mnoga društvu naknadno daju važan doprinos. Društvu su potrebni daroviti koji će pružiti potporu razvoju zajednice te pridonijeti humanističkom, gospodarskom, političkom i umjetničkom području. Rano otkrivanje takvih osoba vodi pravilnom obrazovanju i usmjerenju prema profesijama koje više odgovaraju njihovim sposobnostima i osobnim karakteristikama tako da mogu biti korisniji svojim zajednicama (Caglar, 2004). Sustav učenja i poučavanja strukturiran prema individualnim razlikama omogućuje pojedincima da žive u svojim zajednicama i da im se prilagođavaju, što koristi njima samima i čini ih sretnijima, a istodobno dovodi do razvoja društva (Bozgeyikli, Dogan, i Isiklar, 2010).

Nastavnici imaju važnu ulogu pri otkrivanju i razvoju talenta darovitih učenika. Rano i pravilno otkrivanje prvi je korak u pružanju nastavnog okruženja u kojem darovita i talentirana djeca mogu usavršavati svoj talent i maksimalno iskoristiti svoj potencijal (Darga, 2010). U školama bi trebalo posvetiti pozornost raznovrsnosti učenika te usvojiti takve politike i strategije koje će zadovoljiti potrebe svakog

pojedinog učenika. Nakon što priznaju raznovrsnost učenika, škole i nastavnici trebali bi znati primijeniti obrazovne metode koje vode lakšem ispunjenju darovite djece i mladih, omogućujući im da postignu maksimum u raznim područjima.

Bégin i Gagné (1994) tvrde da su Amerikanci zauzimali kompleksna stajališta o darovitoj djeci i njihovu obrazovanju tijekom povijesti. Američki je obrazovni sustav godinama izložen napetosti između izvrsnosti i jednakosti (Gallagher, 1994). Premda Amerikanci daju prioritet visokim postignućima i umjetničkoj produkciji, preziru razlikovanje superiornosti od inferiornosti u akademskom, političkom ili društvenom području. Stoga im nije ugodno raspravljati o razlikama u individualnim sposobnostima prema inteligenciji ili akademskom uspjehu (Gallagher, 1994). Mnogi relevantni stručnjaci promatraju obrazovanje darovitih kao nešto što obuhvaća posebne privilegije za one koji su ionako u prednosti zbog straha od elitizma. U skladu s javnim mišljenjem izvrsnost i potreba za jednakošću nisu nešto stabilno. U ovo doba „bez ijednog zaostalog djeteta" čini se kako vlada velika zabrinutost za jednaku poduku i uspjeh kada je riječ o „podizanju akademske ljestvice" (McCoach i Del Siegle, 2007).

Osim toga, Mönks i Pflüger (2005) iznose u svom izvještaju da se nedavno usvojeni zakon o školama u Austriji i Španjolskoj temelji na zakonu koji se provodio u XX. stoljeću, uglavnom tijekom šezdesetih i sedamdesetih godina. Zakon o darovitosti i obrazovanju darovitih učenika revidiran je, a obrazovanje talentiranih i darovitih uključeno u sustav općeg obrazovanja od 1990. godine. Premda Danska, Italija i Francuska nemaju službene programe za obrazovanje darovitih učenika, u novije se vrijeme nastoji uvesti još više propisa i zakon o individualnim potrebama povezan s obrazovanjem darovitih učenika (Mönks i Pflüger, 2005).

Winstanley (2006) smatra da je obrazovanje darovitih kompliciranо s obzirom na činjenicu da društveni i obrazovni problemi u nekoj zemlji utječu na to kako se potencijal i uspjeh percipiraju. Obrazovanje darovitih uvijek je izravno povezano s povijesnim, kulturnim i političkim kontekstom određene zemlje, a može također utjecati na političke odluke u vezi s obrazovanjem darovitih (Taylor i Kokot, 2000).

U jednom istraživanju u kojem su uspoređivali nastavnike koji su bili educirani za rad s darovitima i one koji to nisu bili, pokazalo se da su prethodno pripremljeni nastavnici poticali učenike na složenije promišljanje te da su se koristili profesionalno-pedagoškim strategijama. Bili su svjesniji kognitivnih potreba učenika, a bili su i kreativniji u odnosu na nastavnike bez prethodne poduke (Hansen i Feldhusen, 1994). Feldhusen (1997) je promatrao izrazito inteligentne nastavnike te je uvidio da poštuju individualne razlike, više su usmjereni na postignuća, fleksibilni su, raspolažu znanjem, pametni su, zanimaju se za kulturne i inteligentne stvari, te ih je okarakterizirao kao one koji se zanimaju za darovite pojedince.

Rogers i Silverman (1997) proveli su istraživanje s 241 darovitim djetetom i zaključili su da im je kvocijent inteligencije iznad 160. Prema njihovim rezultatima, darovita su djeca pažljivija (94%), koncentriranija (94%), imaju razvijeniju gramatiku (91%), kinestetički su razvijenija (60%), izrazitije se razlikuju (48,9%) od vršnjaka, kreativnije se izražavaju (37%) u ranim fazama djetinjstva.

Madge (1979) ističe da nitko do sada nije savjetovao kako neka mjera za inteligenciju ili kvocijent inteligencije može ukazati na to da neki pojedinac ima priliku postati aktivan, odgovoran član društva, ispuniti ulogu vođe u zajednici kojoj pripada, tako što će pridonositi humanosti ili imati sposobnost uspostave dobrih međuljudskih odnosa. Mnoge ljudske osobine kao što su ljubaznost, sreća, iskrenost, hrabrost i empatija nisu uopće povezane s kvocijentom inteligencije. Maree i Mokhuane (2007) daju naslutiti da visok kvocijent inteligencije nije izjednačen s visokim životnim postignućem, nego da postoje drugi razlozi koje treba razmotriti pri tumačenju varijance kada govorimo o uspjehu darovitih pojedinaca, te da takva i bilo koja druga rasprava treba također obuhvatiti aspekte emotivno-socijalne inteligencije. Iz perspektive emotivno-socijalne inteligencije potrebno je izraziti zabrinutost zbog nedostatnog razvoja emotivno-socijalne inteligencije u školama. Širom zemlje čini se da ravnatelji nisu spremni, čak su neskloni, uložiti vrijeme u istraživačke programe o emotivno-socijalnoj inteligenciji (prema standardnom opravdanju, pretrpani izvedbeni programi ne ostavljaju prostor za lakše usvajanje ,,slabijih" vještina). Stručnjaci se ipak slažu kako je važno da pojedinci budu svjesni svojih i tuđih emocija, te da ih prepoznaju i iskažu na prikladan način.

Visok kvocijent inteligencije ili talent uostalom ne znači zadovoljavajući uspjeh. Kvocijent inteligencije ili talent može pomoći učenicima da dobiju dobre ocjene u školi, ali s protokom vremena postaje neporecivo da vrijednost emotivno-socijalne inteligencije bolje predviđa uspjeh na radnom mjestu. Istraživanja stalno pokazuju da nečiji uspjeh u školi, talent i kvocijent inteligencije predviđaju samo 9 % budućeg uspjeha na radnom mjestu, a da je to u slučaju emotivno-socijalne inteligencije od 36 do 40 % spomenutog uspjeha (Bar-On, 2006). Nastavnike treba educirati o tome kako promovirati emotivno-socijalnu inteligenciju u učionici te ih poticati na primjenu spomenutih vještina. Budući da takvi učenici uvelike pokazuju bolje vještine u odnosu na emotivno-socijalnu inteligenciju, čini se uvjerljivim predložiti kako takve vještine znakovito pridonose njihovu uspjehu (Mare, 2011).

Skale za rangiranje karakteristika ponašanja

Renzulli i sur. (1997) razvili su *Skalu za rangiranje karakteristika ponašanja superiornih učenika*. Te su se skale koristile za učenike u višim razredima osnovne škole i one u srednjoj školi, a sadrže 14 podskala kojima se mjeri učenikova sposobnost u sljedećim područjima: učenje, motivacija, kreativnost, vodstvo, umjetnost, glazba, planiranje, drama, komunikacija, matematika, čitanje, znanost i tehnologija. Feldhusen, Hoover i Sayler (1990) također su konstruirali *Purdue skalu za akademsko rangiranje* u srednjim školama. *Mjeru determinacije* primjenjuju roditelji s ciljem određivanja stupnja pripreme i motivacije djece za školu (Davis i Rimm, 1998). Smutny (2000) je predložio skalu pod nazivom *Popis karakteristika moga djeteta*, koja obuhvaća 46 obilježja, upotrebljavaju je roditelji, a njome provjeravaju je li njihovo dijete razvilo određenu karakteristiku ili nije. Silverman (1997-2004) je razradio mjeru poznatu

kao *Obilježja visoke inteligencije* s ukupno 25 čestica, a također je primjenjuju roditelji. Pregled literature čini se jasno pokazuje da postoje određene karakteristike po kojima se darovita djeca razlikuju od one nedarovite.

Iz literature je razvidno da postoje različite vrste skala povezanih s obrazovanjem darovitih, ali uspješna primjena politika i praksi u toj obrazovnoj domeni zahtijeva razmatranje nastavnikovih percepcija i uvjerenja koja daju školama upozorenja o mogućim ograničenjima u samoj provedbi. Pri izradi obrazovnih programa za darovite važno je biti svjestan percepcije koju imaju nastavnici o darovitim učenicima (Davis i Rimm, 2004). Nedostatak znanja i razumijevanja darovitosti uzrokuje pogrešna uvjerenja nastavnika o obrazovanju darovitih (Clark, 2002; Gross, 1993). Rezultati istraživanja pokazuju da nedostatno znanje nastavnika o pružanju obrazovnih mogućnosti darovitim učenicima negativno utječe na njihov akademski i socijalno-emotivni razvoj (Gross, 1993, 1994; Gallagher, 1996).

Potrebno je stoga konstruirati *Skalu percepcije nastavnika o darovitim učenicima* jer pregled literature ukazuje na to da postojeće mjere nisu dostatne kako bi se utvrdila percepcija nastavnika o darovitim učenicima, što je glavni problem pri dobivanju podataka kojima bi se definirala sadašnja situacija s obzirom na spomenutu temu. Ovo je istraživanje stoga provedeno na uzorku nastavnika koji imaju važnu ulogu u obrazovanju pojedinaca koji će biti korisni društvu. Prema tome, cilj je ovog istraživanja razviti *Skalu za procjenu percepcije nastavnika o darovitim učenicima*.

Metodologija

Uzorak

U ovom je istraživanju sudjelovalo 175 nastavnika iz osnovnih škola u Sjevernom Cipru, odabranih metodom slučajnog uzorka. Većinu su uzorka činile nastavnice (69,1 %; 121), a preostalih 30,9 % (n=54) činili su nastavnici. 25,1 % njih imalo je radno iskustvo od jedne do pet godina, 19,4 % bili su u kategoriji s iskustvom od šest do deset godina, 23,4 % imalo je iskustvo između jedanaest i petnaest godina, 19,4 % između šesnaest i dvadeset godina, a 12,6 % ih je navelo radno iskustvo od dvadeset jedne godine i više. 33,1 % ispitanika navelo je da sudjeluje u osposobljavanju za rad s darovitom djecom, a 66,9 % navelo je da ne sudjeluje u takvom programu.

Analiza podataka i postupak

Skala za procjenu nastavnika o darovitim učenicima sastoji se od dva dijela, demografskih podataka o nastavnicima i njihove percepcije o darovitim učenicima. Demografski dio sadržavao je podatke o spolu ispitanika, njihovu nastavnom iskustvu i tome jesu li prethodno imali obuku o radu s darovitima. Drugi dio obuhvaćao je percepcije nastavnika o darovitim učenicima.

U skladu s ciljem istraživanje zahtijeva primjenu skale kojom će se utvrditi percepcije što ih nastavnici osnovnih škola imaju o darovitim učenicima. U tijeku definiranja mjernih čestica 20 nastavnika s deset ili više godina nastavnog iskustva

iz 20 različitih škola u nadležnosti Ministarstva obrazovanja zamoljeno je da napiše sastavak u kojem će navesti svoju percepciju, osjećaje i ponašanje u odnosu na darovite učenike. Tijekom te pripremne faze proučena je također literatura o konstrukciji skale i skalama percepcije o darovitim učenicima i prikupljeni su podaci o konstrukciji skale percepcije i istraživanjima na uzorku darovitih učenika.

Nakon stručne i sadržajne analize sastavaka izrađen je prijedlog skale s 50 čestica povezanih s obilježjima darovitih. U procesu konstrukcije skale, osobito u fazi određivanja njene kontekstualne vrijednosti, za svaku je česticu postignut konsenzus od 90 % među konzultiranim stručnjacima. Da bi se odredila kontekstualna vrijednost, od stručnjaka je zatraženo najmanje pet i najviše četrdeset mišljenja (Yurdagul, 2005); smatralo se kako je petnaest mišljenja dostatno da bi se odredila spomenuta kontekstualna vrijednost. Dva su jezična stručnjaka provjerila gramatičku pravilnost čestica na turskom jeziku i njihovu jasnoću. Slijedom mišljenja stručnjaka i nastavnika prva je inačica skale s 50 čestica reorganizirana tako da je konačno sadržavala 43 čestice.

Obrazac za preliminarno prikupljanje podataka, pripremljen da bi se odredila valjanost i pouzdanost analize, koristio se s probnom skupinom od 175 nastavnika. U istraživanju se koristila Likertova skala (1-5) da bi se vidjelo kakve su reakcije na čestice o percepciji. Ispitanici su zamoljeni da rangiraju svaku česticu u pet kategorija (snažno neslaganje, neslaganje, neodlučnost, slaganje ili snažno slaganje).

Skala je primijenjena na uzorku nastavnika u osnovnim školama. Statističkom analizom ukupno 43 čestice o percepciji utvrđeno je da ih je deset imalo faktorsku težinu ispod 0,40 te su bile eliminirane iz skale, pri čemu su u konačnoj inačici ostale 33 čestice. U istraživanjima o konstrukciji skale navodi se kako se, pri utvrđivanju faktorskog obrasca, težina između 0,30 i 0,40 treba uzeti kao bazni presjek (Coklar i Odabasi, 2009; Gurbuzturk i Sad, 2010). U ovom je istraživanju prihvaćena vrijednost od 0,40. Čestice čija težina premašuje 0,40 u dva faktora uključene su u skalu, a čestice čija je faktorska težina ispod 0,40 izostavljene su iz skale.

Za potrebe analize valjanosti i pouzdanosti skale provedena je analiza normalne distribucije, na temelju koje su dobivene prosječna vrijednost, srednja vrijednost, dominantna vrijednost, standardna devijacija, varijanca, minimalne i maksimalne vrijednosti, raspon, mjere asimetrije i spljoštenosti.

Rezultati

Analize valjanosti i pouzdanosti

Provedena je analiza normalne distribucije da bi se odredila distribucija valjanosti i pouzdanost skale. Nakon što je 10 čestica čiji je bazni presjek bio ispod 0,40 eliminirano iz istraživanja, skala je obuhvaćala 33 čestice. S obzirom na taj broj 33 je određen kao minimalno moguć broj bodova, a maksimalni broj bodova bio je u rasponu od 159 do 126. Srednja vrijednost skale iznosila je 118,22, izračun za medijan iznosio je 119,

a standardna devijacija 19,60. U provedenim analizama izračun za mjeru asimetrije iznosio je -,92, a mjera je spljoštenosti bila 2,12.

Da bi se utvrdilo odgovaraju li podaci i veličina uzorka faktorskoj analizi, koristio se KMO i Bartlettov test sferičnosti. Da bi podaci bili adekvatni za faktorsku analizu, minimalna KMO vrijednost morala je biti iznad 0,60, a Bartlettov test morao je biti značajan (Buyukozturk, 2004). U ovom je istraživanju izračun za KMO koeficijent relevantnosti uzorka iznosio 0,87. Budući da je vrijednost KMO bila blizu 0,90, može se konstatirati da je adekvatnost podataka za faktorsku analizu bila gotovo savršena (Hutcheson i Sofroniou, 1999). Približna X^2 vrijednost za BTS iznosila je 6630,893 ($p<,001$) u ovom istraživanju tako da su rezultati odgovarali faktorskoj analizi prema KMO i Bartlettovu testu.

Iz analize proizlazi da se komunaliteti razlikuju od 0,43 i 0,82. Osim toga, inicijalne Eigen vrijednosti za 9 od 43 čestice, pridodane analizi, bile su iznad 1. Tih je devet faktora objedinjeno u ovoj skali. Ukupna varijanca objašnjena je detaljno u Tablici 1.

Tablica 1

Kao što prikazuje Tablica 1 određen je kumulativni postotak za devet faktora - 62,45 %. Što se tiče ukupnog i postotka opterećenja varijance, za prvi je faktor iznosio 17,86 i 41,55 %, 3,26 i 7,57 % za drugi faktor, 2,35 i 5,48 % za treći faktor, 1,87 i 4,35 % za četvrti faktor, 1,50 i 3,50 % za peti faktor, 1,36 i 3,17 % za šesti faktor, 1,20 i 2,80% za sedmi faktor, 1,18 i 2,74% za osmi faktor, 1,00 i 2,34 % za deveti faktor. Postotak varijance u ovom istraživanju bio je iznad 60 %, dakle unutar prihvatljivih granica. Varimax rotacijom izračunat je postotak varijance za pet faktora - 18,24 % za prvi faktor, 12,92 % za drugi faktor, 12,22 % za treći faktor, 11,79 % za četvrti faktor i 7,27 % za peti faktor.

Iz analiza je proizašla srednja vrijednost za svaku česticu između 3,40 i 4,03, kao i standardna devijacija između 0,81 i 1,07. Korelacije za cjelovitu skalu (sve čestice) kretale su se u rasponu od 0,54 do 0,83. U ovom je istraživanju ukupna korelacijska vrijednost bila iznad 0,20, dakle unutar prihvatljivosti. Dobivene srednje vrijednosti, standardne devijacije i korelacijske vrijednosti za svaku česticu prikazane su u Tablici 2.

Da bi se odredila pouzdanost skale, koristio se Cronbachov alfa (α) za skalu u cjelini i svaku poddimenziju dobivenu Varimax rotacijom. Cronbachov alfa najčešće se koristi kao mjera pouzdanosti zbog svoje adekvatnosti i učinkovitosti. Pri odabiru čestica glavni je kriterij bio da je ukupni koeficijent korelacije iznad 0,30.

Rezultati analize upitnika ukazuju na prihvatljivost čestica u odnosu na cilj istraživanja. Vrijednost čestica iznosila je između 3,33 i 3,85, a standardna se devijacija mijenjala između 0,67 i 0,80. Cronbachov alfa se koristio za sveukupnu skalu - (α) 0,96. Za poddimenziju „spremnost za učenje" Cronbachov alfa (α) iznosio je 0,93, za „karakteristike izražavanja" 0,90; za „osobne karakteristike" njegov je izračun bio 0,91; za „karakteristike učenja" iznosio je 0,86, a za „mentalne karakteristike" Cronbachov alfa bio je 0,68.

Tablica 2

Srednja vrijednost, faktor i rezultati pouzdanosti percepcije nastavnika

Čestice i faktori	M	SD	Čestica ukupno	Faktorsko opterećenje komponenti	Varimax faktorsko opterećenje
Faktor I: Spreman učiti α=0,929					
7. Vrlo su osjetljivi na događaje oko sebe i u svojoj sredini.	3,92	,94	,786	,773	,721
36. Strpljivi su.	3,85	,95	,719	,656	,715
11. Žele da njihova pravila budu prihvaćena.	3,82	,95	,718	,673	,709
18. Vole skupljati kamenje i kukce.	3,72	1,01	,644	,656	,597
25. Skloni su savršenstvu.	3,68	,95	,732	,674	,670
31. Radoznali su.	3,74	,91	,775	,782	,666
34. Vrlo su društveni.	3,90	1,00	,826	,794	,702
27. Žele da ljudi poštuju njihove zanimljive ideje i snove.	4,03	,99	,838	,836	,687
38. Talent za razmišljanje im je vrlo sofisticiran.	3,40	,86	,613	,586	,652
Faktor I Ukupno	**3,78**	**,76**			
Faktor II: Faktori izražavanja α=0,896					
42. Svoje ideje iznose detaljno.	3,63	,93	,577	,621	,466
24. Rado sudjeluju u nastavnim aktivnostima čitanja i pisanja.	3,65	,90	,632	,621	,528
2. Fizički su razvijeniji u odnosu na vršnjake.	4,02	,86	,608	,574	,720
30. Postavljaju previše pitanja.	3,90	,91	,786	,555	,630
12. Vole čitati knjige godinu-dvije iznad svoje razine.	4,03	,87	,791	,762	,685
40. Vole izazov.	3,64	,94	,571	,531	,508
41.Talentirani su i mogu otvoreno i detaljno predstaviti svoje produktivne ideje.	3,88	,82	,701	,683	,526
43. Lako uče i pamte.	4,02	,81	,780	,731	,700
Faktor II Ukupno	**3,85**	**,67**			
Faktor III: Faktori osobnosti α=0,907					
14. Fizički su energični.	3,38	,85	,541	,461	,601
26. Imaju bujnu maštu.	3,57	,86	,657	,556	,730
28. Tako su osjetljivi da ih osjećaji mogu lako povrijediti.	3,72	1,05	,802	,724	,687
23. Ne vole da im naređuju da nešto učine.	3,56	1,07	,823	,699	,780
22. Postavljaju se kao vođe u grupi.	3,73	,97	,797	,719	,741
6. Sklapaju prijateljstva s osobama godinu-dvije starijim od sebe.	3,97	1,03	,840	,800	,699
Faktor III Ukupno	**3,61**	**,80**			
Faktor IV: Faktori učenja α=0,861					
16. Uspješni su u plesnim, dramskim i glazbenim aktivnostima.	3,61	1,01	,644	,660	,607
19. Ne trebaju učiti.	3,65	,86	,610	,553	,590
20. Mogu zapamtiti nešto što su davno čuli.	3,60	,97	,617	,412	,747
21. Mogu zapamtiti nešto što su davno čitali.	3,64	,90	,611	,670	,468
8. Imaju svoje originalne interese.	3,63	1,02	,700	,541	,780
10. Imaju osobinu preispitivati postojeća pravila.	3,53	,93	,743	,616	,784
Faktor IV Ukupno	**3,61**	**,73**			
Faktor V: Mentalni faktori α=0,680					
9. Usvojili su apstraktne koncepte kao što su dinosauri, brojevi i prostor.	2,81	1,17	,434	,424	,561
15.Imaju visoku razinu mentalne energije.	3,61	,80	,489	,547	,524
13. Vole rješavati slagalice, probleme s labirintom i druge mentalne igre.	3,66	,90	,608	,636	,682
39. Imaju veliku sposobnost postizanja akademskog uspjeha.	3,26	,87	,366	,420	,611
Faktor V Ukupno	**3,33**	**,67**			

Prema rezultatima istraživanja vidljivo je da skala ima pouzdanu i konzistentnu strukturu u svim dimenzijama. Dakle, vrijednosti pouzdanosti interne konzistencije pokazuju da je se može smatrati dobrom. Prema istraživačima (Hung i sur., 2010; Sekaran, 2003), što je koeficijent pouzdanosti bliži 1,0, bolja je pouzdanost foruma. Općenito gledano, pouzdanosti čije su vrijednosti ispod 0,60 smatraju se slabima, one između 0,60 i 0,70 prihvatljive su, a one iznad 0,80 dobre su.

Tablica 3

Kao što pokazuje Tablica 3 statistički značajne razlike uočene su samo između spola nastavnika i njihovih percepcija o izražavanju darovitih učenika, te opet između spola nastavnika i karakteristika kojima raspolažu daroviti kada je u pitanju učenje (p<,05).

Zaključak i preporuke

Obrazovanje darovitih važno je zbog njihova doprinosa razvoju znanosti i predstavljanju novih ideja u društvu, stoga nastavnici trebaju znati identificirati darovite učenike i pripremiti im potrebno okruženje za učenje. Cilj je ovog istraživanja bio razviti skalu za mjerenje percepcije koju nastavnici imaju o darovitim učenicima. Kao rezultat provedenih analiza konstruirana je skala s 33 čestice.

Da bi se utvrdila faktorska struktura skale, provedeno je istraživanje te je primijećeno da čestice zajedno čine 5 faktora. Slijedom navedenog provjerene su čestice koje pripadaju faktorima te je imenovano pet faktora prema obilježjima koje provjeravaju: spremnost za učenje, jezične karakteristike, crte ličnosti, karakteristike učenja i mentalne karakteristike. Rezultati istraživanja doveli su do zaključka da je valjanost i pouzdanost skale vrlo visoka.

Rezultati proizašli iz istraživanja također ukazuju na pouzdanu i konzistentnu strukturu skale u cjelini kao i po svim njezinim dimenzijama. Osim toga, pretpostavlja se da će *Psihometrijske karakteristike skale o percepciji nastavnika o darovitim učenicima* dati pouzdane rezultate za to područje.

Dok postoji pozitivna korelacija između percepcije nastavnika o darovitim učenicima i obrazovanja darovitih, njihova stajališta o darovitim učenicima nisu bila pod utjecajem osposobljavanja za rad s njima (Justman i Wrightstone, 1956; McCoach i Del Siegle, 2007). Primjerice, postoji vjerojatnost da nastavnici koji se osposobljavaju za rad s darovitim učenicima sami sebe percipiraju darovitima i da ih privlači područje obrazovanja darovitih. Da zaključimo, osposobljavanje za rad s darovitim učenicima može pozitivno povećati percepcije nastavnika.

Za daljnja istraživanja preporuča se primjena skale percepcija o darovitim učenicima s grupama nastavnika različitog ranga. Takva je skala konstruirana za darovite učenike važna jer omogućuje da se analiziraju nastavnikove percepcije i odrede nedostaci povezani s tim. Nastavljajući istraživanje percepcija koje nastavnici imaju o spomenutoj temi, buduća bi istraživanja trebalo provesti među samim nastavnicima. Dinamični razvoj obrazovanja darovitih od početka XXI. stoljeća obećava kako je ovo doba na pravom putu da postane doba darovitog djeteta.