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An Investigation into the Views of Gifted Children on the Effects of Computer and Information Technologies on Their Lives and Education

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***Abstract*—**In this study, too, an attempt was made to reveal the place and effects of information technologies on the lives and education of gifted children based on the views of gifted. To this end, the effects of information technologies on gifted are general skills, technology use, academic and social skills, and cooperative and personal skills were investigated. These skills were explored depending on whether or not gifted had their own computers, had internet connection at home, or how often they use the internet, average time period they spent at the computer, how often they played computer games and their use of social media.

The study was conducted using the screening model with a quantitative approach. The sample of the study consisted of 129 gifted attending 5-12th classes in 12 provinces in different regions of Turkey. 64 of the participants were female while 65 were male. The research data were collected using the using computer of gifted and information technologies (UCIT) questionnaire which was developed by the researchers and given its final form after receiving expert view.

As a result of the study, it was found that UCIT use improved foreign language speaking skills of gifted, enabled them to get to know and understand different cultures, and made use of computer and information technologies while they study. At the end of the study these result were obtained: Gifted have positive idea using computer and communication technology. There are differences whether using the internet about the ideas UCIT. But there are not differences whether having computer, inhabited city, grade level, having internet at home, daily and weekly internet usage durations, playing the computer and internet game, having Facebook and Twitter account about the UCIT.

UCIT contribute to the development of gifted vocabulary, allows knowing and understand different cultures, developing foreign language speaking skills, gifted do not give up computer when they do their homework, improve their reading, listening, understanding and writing skills in a foreign language.

Gifted children want to have transition to the use of tablets in education. They think UCIT facilitates doing their homework, contributes learning more information in a shorter time. They'd like to use computer-assisted instruction programs at courses. They think they will be more successful in the future if their computer skills are good. But gifted students prefer teacher instead of teaching with computers and they said that learning can be run from home without going to school.

***Keywords*—**Gifted, using computer, communication technology.

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I. Introduction

GIFTED students' unique intellectual needs merit curricula, strategies, and resources that appropriately challenge them beyond what is provided in the general education curriculum. Because many gifted students will be tomorrow's leaders in technology and other disciplines that utilize technology, it is imperative that researchers consider how teachers of the gifted students are utilizing new technologies for these students. As with curriculum and instruction, the implementation of technology with gifted students should be appropriately designed to meet their needs; teachers of the gifted should be able to differentiate opportunities for learning with technology [4] There is evidence that certain types of technology-enhanced environments provide affordances that support and engender intrinsically motivated learning [1]-[3]. It is not, however, the technology itself that enhances motivation. Students who are considered "digital natives" [5] do not use technology for the sake of technology use. In other words, they are not using it "just because it's digital." These "new millennium learners" [6] utilize technology as an integral part of life, both in work and play, and therefore do not view technology use as an opportunity but, rather, as a fundamental tool for normal day-to-day functioning.

New technologies can be powerful tools for the advancement of all learners. However, in light of the characteristics of gifted learners, technology can be an essential tool in providing educational programming to address the specialized needs of gifted learners [7], [24]. Maker and Neilson [25] suggested that effective learning environments for the gifted incorporate the following precepts:

- become learner centered instead of teacher centered;
- emphasize independence instead of dependence;
- reflect an open attitude toward new ideas, innovation, and exploration;
- focus upon complexity not simplicity;
- utilize a variety of grouping options;
- employ a flexible structure instead of a rigid or lack of structure; and
- incorporate high mobility.

In general, gifted students are capable of rapidly learning more complex material than their same-age peers. In order to facilitate the learning of their students, teachers should use a differentiated curriculum that provides greater depth, varied

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topics, and an accelerated pace so knowledge may be advanced rather than simply mastered [14]-[17].

When computers and related technologies are incorporated into the learning environment for gifted students, they can support program goals and address the individual needs of the gifted [13]. By integrating technology into the curriculum, gifted students have the opportunity to [7]-[12]:

- be active participants in their own learning;
- work at their own pace and ability level;
- create original and innovative products;
- eliminate the mundane, previously mastered aspects of the learning process;
- be empowered to take on new roles as risk-takers, leaders, or facilitators;
- practice using tools applicable to the world outside of the classroom;
- research independently;
- explore topics at a greater depth and breadth;
- think critically in real-world situations; and
- collaborate with others as problem solvers

The adaptability of technology allows individual learning preferences to be enhanced. Used as a tool in a structured learning experience, technology can be used to develop strengths and overcome or neutralize weaknesses while providing flexible pacing and enhancing personal responsibility for one's learning [13]. Thus, the integration of technology not only addresses the general characteristics of the gifted student, but also incorporates the competencies required of the information-based work place.

Empirical research examining the efficacy of technology integration in the gifted curriculum is practically nonexistent in the scholarly gifted journals [12]. The literature regarding technology and gifted education is comprised largely of "best practices" articles that tell of specific strategies or programs that worked with a particular population [22]. The practices most commonly discussed include Internet usage, distance learning, and multimedia presentation tools.

Using the internet as a research tool provides the gifted learner an opportunity to examine any desired topic to the depth and breadth applicable for any given assignment while requiring the student to be an informed, discerning consumer of the information presented [19]; [11], [23]. The internet also facilitates information dissemination overcoming physical, social, and geographic barriers that once impeded such widespread communication.

A close examination of technology literacy goals reveals an interesting parallelism with the goals of gifted education. This association provides a ray of hope for gifted educators. Future education movements to promote student technology literacy will serve gifted children well since current technology literacy goals are very compatible with many gifted and talented students' learning preferences. The purpose of this study is to list gifted situation skills related to technology, describe educational activities that promote these skills, and discuss how those activities fit gifted and talented students in Turkey.

A quick perusal of these competencies reveals the overlap with the major goals of gifted education. Educators of the gifted strive to provide curricula with complexity and depth. This includes organizing, analyzing, synthesizing, and communicating large amounts of information. Technology can be effectively used for this process. Two common learning characteristics of gifted students work well here: the ability to transfer learning from one situation to another and an understanding of complicated material through analytical reasoning ability. Student-created multimedia projects afford gifted and talented students an opportunity to explore their interests in depth while polishing a variety of technology skills necessary for literacy in the 21st century. Such projects also increase student motivation in and understanding of the subject [18].

While intelligence tests often include bonus points for fast processing, educators during the past quarter century have downplayed the importance of speed in learning. In the 21st century, speed counts in important ways. With the advent of the Internet, speed matters [19]. The vast amount of information that is available on the Internet and the myriad of links that can be followed mandate that users must be able to review and process information quickly to make decisions regarding what hyperlinks are worth following. This includes inferring correctly what is behind a hyperlink (critical thinking skills such as this will be discussed later in this column). One of the characteristics sometimes associated with gifted and talented students is their ability to process large amounts of information quickly. This is a valuable skill for the Internet. There is no knowledge speed limit on the Internet, and gifted students can swiftly cruise it as they apply knowledge triage.

Educators of the gifted and talented have long been proponents of creative and critical thinking. The latter has now gained literacy status for most fields. Not only is there a myriad of information for students to process, but also much of what students encounter has limited value or can be inaccurate or biased. Hate pages continue to flourish on the Internet. Therefore, critical reading and thinking skills are even more crucial on the Internet.

Gifted and talented students have opportunities for creative productivity [10]. While the multi-mediating discussed earlier is one example of using technology for creative productivity, technology can be used by students in a variety of ways. The widespread availability of technology has lowered the barriers that formerly kept young people from using the authentic methodologies of professionals. Students can be productive draftsmen, composers, and graphic artists by approaching problems and using software in a similar manner as career professionals. Australian researchers [20] found that, when young people work in groups and engage in significant activity involving technology, they remain with the working group for as long as the creative project lasts. Afterwards, they will often regroup around other initiatives as media becomes available. Any teacher who is assigning group work can appreciate how rare these qualities are. This observation suggests that students can develop collaborative and cooperative skills while increasing their technology prowess.

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The skills that educators of gifted and talented students have been advocating for the past half-century are now on the forefront of the literacy movement. We must embrace these skills through technology. The Internet needs to be the primary focus as we consider technology integration within our classrooms. Simply using technology in the classroom does not ensure that students are acquiring new literacies. We must help young people to use the vast resources of the Internet to solve problems and achieve specific goals efficiently and effectively.

II. Method

A. Model of the Study

The study was conducted using the screening model with a quantitative approach. The sample of the study consisted of 129 gifted attending 5-12th classes in 12 provinces in different regions of our country. 64 of the participants were female while 65 were male. The research data were collected using the UCIT Questionnaire, which was developed by the researchers and given its final form after receiving expert view. The data were analyzed using the SPSS 17.00 software program.

B. Participation

Participations are from five different cities in Turkey. 65 of them live in Konya, 20 of them live in Gümüşhane, 14 of them are from Ankara, 14 of them are from Mersin and 16 of them are from Isparta. They study three different grade levels, 14 of them in four, 30 of them in five and 85 of them are sixth grade. 82 participants have PC, but 47 haven't. 93 participants have internet connection in their home but 36 haven't. 46 participants use the internet regularly but 83 do not. 103 participants play the computer game but 26 do not.

C. Research Instruments

The UCIT Questionnaire developed by researcher. The Questionnaire is 4 Likert-type consisting of 86 items. Reliability of the scale was determined by calculating of Cronbach's Alpha Internal Consistency. The Alpha value of the scale is 0,928. The Demographic Information Form that includes eleven questions about the participants was developed by researches.

III. Findings

The t Test, ANOVA and Pearson Correlation Coefficient were used to analyses collected data. The descripted statistics were conducted in order to determine the students' ideas about UCIT.

The level of gifted students' UCIT is shown Table I.

TABLE I
THE LEVEL OF GIFTED STUDENTS' ABOUT USING UCIT SCORES

Variable	N	Min.	Max.	X	sd
Level of UCIT	128	2,256	3,597	2.92	0.397

Gifted students' about UCIT score mean is 2,92. According to Likert scores of 4's, 2.92 is a high score. The gifted student's ideas' about using UCIT is good.

Whether there is a meaning difference between having computer and UCIT scores has been examined by t test and results shown in Table II.

TABLE II
HAVING COMPUTER AND UCIT SCORES

Having computer	N	X	ss	t	p
Yes	82	2,98	,396	2,779	,490
No	47	2,79	,372		

As it can be seen from Table II, according to the calculated p value (0,490) there is no significant difference between the gifted having computer and UCIT scores.

Whether there is a meaning difference among gifted students' inhabited city and UCIT scores has been examined by ANOVA and results shown in Table III.

TABLE III
GIFTED'S INHABITED CITY AND UCIT SCORES

Dep. Var.		N	X	ss	R. of V.	S of S	df	M. S.	f	p
Gifted students' inhabited city and UCIT scores	Konya	65	2,96	,388	B. Gr	,772	4	,193	1,225	,304
	Gümüşh	20	2,83	,376						
	Ankara	14	2,89	,456	W.G.	19,53	124	,158		
	Mersin	14	3,01	,443						
	Isparta	16	2,76	,356	T	20,30	128			

As it can be seen from Table III, according to the calculated p value (0,304) there is no significant difference among the gifted students 'inhabited city and UCIT scores.

Whether there is a meaning difference among students' grade level and UCIT scores has been examined by ANOVA and results shown in Table IV.

TABLE IV
GIFTED'S' GRADE LEVEL AND UCIT SCORES

Dep. Var.	Grade	N	X	Ss	R. of V.	Sum of Sq.	df	M. S.	F	p
Students' grade level and UCIT scores.	4	14	3,04	,513	B. Gr	,357	2	,178		
	5	30	2,84	,371	W.G.	19,95	126	,158	1,127	,327
	6	85	2,92	,385	T					
	T	129	2,92	,398		20,30	128			

As it can be seen from Table IV, according to the calculated p value (0,327) there is no significant difference among the gifted students' grade level and UCIT scores.

Whether there is a meaning difference between having internet connection at their homes and UCIT scores has been examined by t test and results shown in Table V.

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TABLE V
HAVING INTERNET CONNECTION AT THEIR HOME AND UCIT SCORES

Having internet in their homes	N	X	ss	T	p
Yes	93	2,95	,385	1,764	,080
No	36	2,81	,418		

As it can be seen from Table V, according to the calculated p value (0,080) there is no significant difference between the gifted students having internet connection in their homes and UCIT scores.

Whether there is a meaning difference between entering the internet and UCIT scores has been examined by t test and results shown in Table VI.

TABLE VI
USING THE INTERNET AND UCIT SCORE

Internet	N	X	ss	T	p
Yes	46	3,06	,370	3,294	,001
No	83	2,83	,391		

As it can be seen from Table VI, according to the calculated p value (0,001) there is significant difference between the using the internet and UCIT score. Students' using the internet has high UCIT score. So, gifted students' using the internet has positive idea to UCIT.

Whether there is a significant correlation among student's daily internet usage durations and UCIT scores has been examined by ANOVA and results shown in Table VII.

TABLE VII
GIFTED'S DAILY INTERNET USAGE DURATIONS AND UCIT

Dep Var	Min	N	X	ss	Resof Var	Sum Sq	df	M. S.	F	p
Daily internet usage	50 100	28	3,00	,351	Betw Gr.	,507	3	,169	1,067	,366
	101 150	88	2,87	,422	Wit Gr	19,80	125	,158		
	151 200	9	3,04	,285	T	20,309	128			
	200<	4	2,81	,324						

Gifted student's daily internet usage durations are 50-100, 101-150, 151-200 and over 201 minutes. Due to the calculated p value is more than 0,05, there is no meaning differences among daily internet usage duration and UCIT scores.

Whether there is a significant correlation among student's weekly internet usage durations and UCIT scores has been examined by ANOVA and results shown in Table VIII.

TABLE VIII
GIFTED STUDENT'S WEEKLY INTERNET USAGE DURATIONS AND UCIT SCORES

Dep. Var.	Duration minu	N	X	ss	R. of V.	S. of S.	df	M. S.	F	p
Daily internet usage durations and UCIT scores	50 100	15	2,72	,354	B. Gr	1,150	7	,164	1,037	,409
	101 150	22	2,83	,405			121			
	151 200	19	2,94	,381	W.G.	19,16	128	,158		
	201 250	16	2,90	,455						
	251 300	24	2,89	,464	T	20,30				
	301 350	12	3,05	,314						
	351 400	10	2,95	,394						
	400<	11	3,02	,277						

Gifted student's weekly internet usage durations are 50-100, 101-150, 151-200, 201-250, 251-300, 301-350, 351-400 and over 401minutes. Due to the calculated p value is more than 0,05, there is no meaning differences between weekly internet usage duration and UCIT scores.

Whether there is a meaning difference between playing the computer game and UCIT scores has been examined by t test and results shown in Table IX.

TABLE IX
PLAYING THE COMPUTER GAMES AND UCIT SCORES

Game	N	X	ss	t	p
Yes	103	2,9274	,39817	,699	,486
No	26	2,8662	,40301		

As it can be seen from Table IX, according to the calculated p value (0,486) there is no significant difference between the gifted students playing the computer game and UCIT scores.

Whether there is a meaning difference between playing the computer game on the internet and UCIT scores has been examined by t test and results shown in Table X.

TABLE X
PLAYING THE COMPUTER GAMES ON THE INTERNET AND UCIT SCORES

Game on the internet	N	X	ss	t	p
Yes	103	2,9303	,39213	,865	,389
No	26	2,8546	,42456		

As it can be seen from Table X, according to the calculated p value (0,486) there is no significant difference among the gifted students playing the computer game on the internet and UCIT scores.

Whether there is a meaning difference between having Facebook account and UCIT scores has been examined by t test and results shown in Table XI.

TABLE XI
HAVING FACEBOOK ACCOUNT AND UCIT SCORES

Facebook	N	X	ss	t	p
Yes	78	2,9406	,40605	,902	,369
No	51	2,8759	,38690		

As it can be seen from Table XI, according to the calculated p value (0,369) there is no significant difference between the gifted having Facebook account and UCIT scores.

Whether there is a meaning difference between having Twitter account and UCIT scores has been examined by t test and results shown in Table XII.

TABLE XII
HAVING TWITTER ACCOUNT AND UCIT SCORES

Twitter	N	X	ss	t	p
Yes	28	2,99	,461	1,224	,223
No	101	2,89	,378		

As it can be seen from Table XII, according to the calculated p value (0,223) there is no significant difference among the gifted having Twitter account and UCIT scores.

Gifted emphasize these situations about general skills improved by using UCIT; "Use of computer and communication technologies are contributing to the development of vocabulary (3,27); allows me to know different cultures (3,27); I don't give up computer by doing my homework (3,25); foreign language speaking skills are developing (3,22); allows me to understand different cultures (3,22); improves my reading, listening, understanding skills (3,12) improves my writing skills in a foreign language (3,12).

Gifted students emphasize these situations about academic skills improved by using UCIT; I would like to transition to the use of tablets in education (3,5) facilitate doing my homework (3,3); contributes to learning more information in a shorter time (3,4); allows me to new issues against curiosity (3,3); I'd Like to use at courses computer-assisted instruction programs (3,3); when my computer skills are good, I think, I will be more successful in the future (3,2). But gifted students think that these situations are not important about using UCIT; using computer at the course to present the subject by teacher does not create a better learning environment for me (2,53); it has no effect on my high scores at school. (2,52); Learning can be run from home without going to school (2,35).

Gifted students emphasize these situations about social skills improved by using UCIT; I prefer to talk face to face rather than debating with my friends in the social media (3,05); It helps me deal with reasoning real world problem in a healthy way (3,02); facilitates doing group works (2,95); If there is not computer at home, communication is better among family member (2,90); It comforts me to chat with my friends on the computer (2,83).

Gifted students emphasize these situations about personal skills improved by using UCIT; "It helps me to make animation of visual elements (3,16); it is important for me to be able to announce my work through UCIT (3,10); it contributes to improve myself (3,07); Facilitates my self-assessment (3,01); computer relaxes me (2,98); when I see products on the internet related with my hobby, I can use better to do practical works and to solve new problems (2,98). At the same time gifted students don't angry with limitation by family about using the internet (2,26).

Gifted students emphasize these situations about technological skills improved by using UCIT; "I think I can do products and source better than the ones on the internet (3,12); I feel myself capable to computer (3,07); I think I can do computer software (2,98); I can use it effectively even I see any technological device for the first time (2,95);I think I encounter irrelevant information and materials more than appropriate information and materials on the internet. (2,91); I am very concerned about the information whether accuracy obtained from the internet or not (2,91); I can reach the computer and communications technology however I want. (2,91).

IV. CONCLUSION

At the end of the study these results were obtained: Gifted have positive idea about using computer and communication technology. There are differences on whether using the internet about the ideas of UCIT. But there are not differences on whether having computer, inhabited city, grade level, having internet at home, daily and weekly internet usage durations, playing computer and internet games, having Facebook and Twitter accounts about the UCIT.

UCIT contributes to the development of gifted vocabulary, allows knowing and understanding different cultures, develops foreign language speaking skills, gifted students does not give up computer when they do their homework, improves their reading, listening, understanding and writing skills in a foreign language.

Gifted students wants to transit to the use of tablets in education. They think UCIT facilitates doing their homework, contributes to learning more information in a shorter time. They'd like to use at courses computer-assisted instruction programs. They think if their computer skills are good, they will be more successful in the future. But gifted students prefer teacher instead of teaching with computers and they said that learning can be run from home without going to school.

Gifted students prefer to talk face to face rather than social media debating with their friends. They think UCIT helps gifted students deal with reasoning real world problem with in a healthy way, facilitates doing group working. According to the gifted students, if there is not computer at home, communication is better among family members.

UCIT helps gifted students make animation of visual elements and it is important for them to be able to announce their work through UCIT. It contributes to improve their selves and their self-assessment. Computer relaxes them. At the same time gifted students don't get angry with limitation by family about using the internet.

According to the [3] study, it also perceived that the learning that occurred in the game development environment differed dramatically from what they experienced in their more traditional educational settings. Students suggested that

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their experiences in designing games made learning funny and not boring, that they were more productive, and that the work was interesting.

According to this research result using the internet connecting effect on gifted ideas regarding UCIT. Beside this according to the Bekele's study [21] gifted has been said about the inherent motivating qualities of technology, generally, there is a paucity of research that directly reflects the connection between Internet and communication technology use and motivation or satisfaction (In addition to the limited research, there are varying degrees of methodological rigor and sample size (and little mention of effect size), as well as limited use of comparison groups in research relevant to relationships between Internet technologies and motivation. Future research studies may want to consider focusing on parsimonious aspects of motivation and Internet technologies by focusing on particular factors contributing to motivated action while continuing to address specific factors within technology use. Additionally, including comparison groups within the study and incorporating methodological refinements commensurate with studies in other areas of the social sciences may further increase our understanding of the complex relationship of motivation and Internet technology use. Finally, gifted students are vital to the advancement of society. Future studies may want to include gifted as a discrete population in research on Internet technologies and motivational outcomes.

REFERENCES

[1] Gee, J. P. (2003). What video games have to teach us about learning and literacy. New York: Palgrave.
[2] Malone, T. W., &Lepper, M. R. (1987). Making learning fun: A taxonomy of intrinsic motivation for learning. In R. E.
[3] Reynolds, R., &Caperton, I. H. (2011). Contrasts in student engagement, meaning-making, dislikes, and challenges in a discovery-based program of game design learning. Educational Technology Research and Development, 59, 267 – 289
[4] Prensky, M. (2001). Digital Natives, Digital Immigrants. On the Horizon, 9(5), 1–6.
[5] Pedro, F. (2006). The new millennium learners: Challenging our views on UCIT and learning. OECD-CERI. Retrieved from
[6] Lewis, J. D. (1998). How the Internet expands educational options. Teaching Exceptional Children, 30(5), 34–41.
[7] Morgan, T. D. (1993). Technology: An essential tool for gifted and talented education. Journal for the Education of the Gifted, 16, 358–371.
[8] Poftak, A. (1998). Technology and gifted education: A talk with Carol Wilson. Technology and Learning, 19(4), 14.
[9] Renzulli, J. S., & Reis, S. M. (1997) Theschoolwide enrichment model: A how-to guide for educational excellence (2nd ed.). Mansfield Center, CT: Creative Learning Press.
[10] Sais, J. (1996). Technology: Tools to enhance learning. Communicator, 27(2), 30–31.
[11] Washington, M. F. (1997). Real hope for the gifted.Gifted Child Today, 20(6), 20–22.
[12] Jones, G. (1990). Personal computers help gifted students work smart (ERIC Document Reproduction Service No. E483). Retrieved September 15, 2000 from the World Wide Web: http://ericec.org/digests/e843.htm
[13] Riley, T., & Brown, M. (1997). Computing for clever kids: The future is what we make it.Gifted Child Today, 20(5), 22–29.
[14] Bulls, M. R., & Riley, T. L. (1997).Weaving qualitatively differentiated units with the World Wide Web.Gifted Child Today, 20(1), 20–27, 50.
[15] Gallagher, J. J., & Gallagher, S. A. (1994). Teaching the gifted child. Boston: Allyn and Bacon.
[16] Clark, B. (1997). Growing up gifted (5th ed.). Columbus, OH: Merrill.
[17] Hertzog, H. S. (1996). The software explosion. Communicator, 27(2) 10–11.
[18] Leu, D. J., Jr. (in press). The new literacies: Research on reading instruction with the Internet and other digital technologies. In S. J. Samuels & A. E. Farstrup (Eds.), What research has to say about reading instruction. Newark, DE: International Reading Association.
[19] Leu, D. J., Jr. (2003, May). Keynote address. University of Connecticut 2003 EdTech Forum, Storrs.
[20] [Bigum, C., Durrant, C., Green, B., Honan, E., Lankshear, C., Morgan, W., Murray, J., Snyder, I., & Wild, M., (1997). Digital rhetoric's: Literacies and technologies in education: Current practices and future directions. Retrieved January 1, 2004, from http://www.gu.edu.au/school/cls/clearinghouse/1997%5frhetorics/volume3.pdf
[21] Bekele, T. A. (2010). Motivation and satisfaction in Internet-supported learning environments: A review. Educational Technology.
[22] Adams, C. M., & Cross, T. L. (2000). Distance learning opportunities for academically gifted students. Journal of Secondary Gifted Education, 11, 88–96.
[23] Krupnick, K. (1997). The Internet and gifted students: Making the connections. Communicator, 28(2), 18.
[24] Mann, C. (1994). New technologies and gifted education. Roeper Review, 16, 172–176.
[25] Maker, J., & Neilson, A. (1982). Curriculum development and teaching strategies for gifted learners. Austin, TX: PRO-ED.