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WHAT SCHOOLING FOR THE GIFTED

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Present study examined students', parents', and teachers' opinions on educational aims for normal and gifted students in order to find out what characteristics and skills gifted students have to learn and develop during their schooling. Fifteen educational aims by Urban (1985) were rated according to their relevance for normal and gifted students by students, their parents and teachers. A factor analysis gave two interpretable factors consisting of aims for the normal group and two for the gifted group. Further analysis was devoted to the question what aspects of respondents qualitatively differentiate their opinions on aims represented by factors. Explored are the effects of the type of school (mathematical, linguistic, politechnical) and the type of school program (regular, special for gifted); sex; parents' education and occupation; school subject and length of teaching service. Obtained data suggested fruitful ideas for educational legislation, school practice and teachers working with gifted students.

Key words: gifted students, educational aims, type of school, school program.

The whole support for gifted students is based on the idea that gifted students have some special educational needs different from those of their non-gifted counterparts. Research data confirm that gifted students have special educational needs but there is no agreement on the way to fulfill them (Freeman, 1979, 1983; Kitano & Kirby, 1986). Parents of gifted students

usually have high expectations from the school and they are mostly very critical about it, even dissatisfied with what ordinary school offers to their children (Felhusen & Kroll, 1985; Kaufman & Sexton, 1983). Neither parents nor teachers have a clear picture of adequate educational services for gifted children. Gagne (1983, 1985) reported that in his research parents and teachers were in favor of enrichment. Parents and teachers were unsure about the desirability of special classes and acceleration to meet the special needs of gifted children. According to Urban (1985) study, students are also confused concerning education of gifted. For example, the majority of students agreed with the provision of special education for gifted students but significantly lower percentage of them approved particular modes of special education (such as special classes).

In the mentioned study, Urban examined opinions and attitudes of students, parents and teachers towards educational aims for different categories of students. Research data confirmed that students, parents and teachers expressed different expectations from the school in meting educational aims for normal, gifted and handicapped students. Respondents gave priority to independence, tolerance, ability for decision making, autonomy of thinking and creativity in education of the gifted, but diligence, orderliness, ambition and social adjustment in education of the normal. Factor analyses of the educational aims resulted in three factors for normal children and two for the gifted. The author concluded that first factor of educational aims for normal students contained traits that could be described as traditional, old-fashioned. The factorial structure of the first factor for the gifted suggested a mature personality with a marked self-identity.

It seems that the cited research findings return us to the beginning questions: how do gifted students differ from others in order to provide services that will best meet their needs. How are gifted students supposed to be educated to display their (gifted) potential and become creative productive adults? What should gifted students learn during their schooling that would not prevent but foster development of their talents?

Acceleration, enrichment, special classes and many sorts of other opportunities for the gifted, highly able, achieving and motivated students have been guaranteed by Yugoslav schools law acts for more than two decades. The implementation of recommended services for the gifted was often unsatisfactory. Having special provision for gifted students in primary and secondary schools without any serious investigation of the attitudes toward it, was the starting reason for carrying out this research.

The purpose of the present study is to examine students', parents', and teachers' opinions on educational aims for normal and gifted students with the intention to find out what characteristics and skills gifted students have to acquire and develop during their secondary education. Later analysis is devoted to the question what features of respondents and their environment are differentially related to their opinions on aims. Explored are the effects of the type of school (mathematical, linguistic and politechnical), the type of school program (regular, special) and sex for the opinions of all three

respondents groups; the effect of parents' education and occupation on their own opinions and on the opinions of their children; the effects of school subjects that teachers teach and length of their teaching service on their opinions of educational aims.

Method

Participants

The sample consisted of 294 second and third grade students of five secondary schools in Belgrade, their parents (179), and their teachers (112). Students were taken from two special schools for the gifted (in mathematics and languages), two grammar schools with regular programs (same majors: mathematics and languages) and one vocational school with both types of programs (regular and special programs in technical sciences)[1]. Parents of all students were asked to complete the questionnaire (61.6% responded). The reaction of teachers was similar (61.8% of asked teachers returned completed questionnaire). Table 1 gives the information on the sample.

Table 1: Subjects (f)

School with	Students	Parents	Teachers
regular program	101	68	50
special program	193	111	62
Total	294	179	112

Females prevailed in all three groups of respondents (57.5% of students, 59.8% of parents and 69.4% of teachers). More than 95% of students were among 17 and 18 years old. Nearly half of the students had excellent school achievement (47.2%). In similar portion, students had highly educated parents (47.9% of fathers and 37.2% of mothers with university diploma) engaged in executive, administrative, managerial and professional jobs. All teachers had university education.

[1] The main criteria for admission to schools and programs for the gifted were outstanding achievement, high scores on ability and achievement tests and success in relevant competitions.

Instrument

Urban (1985) Educational Aims Scale was administrated as a rare instrument covering the most important aims defined in the National Secondary Education Low Act (1992) and giving opportunity to compare research results with those from Germany. The scale is a list of fifteen aims, terms referring to attitudes, personal traits and abilities in cognition and thinking (independence, creativity, social adjustment, cognitive flexibility, sense of responsibility, tolerance, autonomy of thinking, diligence, ability for decision making, trustworthiness, political consciousness, orderliness, ability for peace making or settling disputes, contentment and ambition). Respondents rated educational aims on five-point Likert scale (from 1 "of none or minimal relevance" to 5 "of very high and the highest relevance") to their relevance to two ability groups of students (normal and gifted).

Procedure

Students were tested in their classroom, during regular classes. Questionnaires were distributed to parents through their children and to teachers at school meetings. Parents and teachers completed and returned questionnaires at their convenience. Respondents had to give their answers in the questionnaire referring to their own conceptions of giftedness and talent. These concepts were not defined by the researcher since they were a subject of another part of the present study investigation.

Data analysis

Factor analysis of educational aims was undertaken with the intention to find out whether they have to be treated separately or in some general way. Two factor analyses of educational aims, one for normal students and the other for gifted students, were suggested by the similarities in opinions of students, parents and teachers, but differences in reference to the estimated ability group (normal or gifted)[2].

Inter-correlations among the estimations of aims were submitted to a Principal Component Analysis (PAF) which gave results similar to those from Urban (Maksic, 1993). This time, analyses continued to reach latent factors using Oblimin criterion. Finally, two interpretable factors for the normal and

[2] It was the results of two way analyses of variance of each particular aims with two independent variables (subsample: students, parents and teachers, and referral groups: normal, gifted). Among 15 tested cases, subsample main effect was significant at $p<0.01$ level once, though refferal group main effect had the same value 11 times.

two for the gifted group emerged. These factors represented educational aims in further analyses.

The role and significance of the characteristics of respondents and their environment for their opinions on educational aims for normal and gifted students were tested by one way and two way analyses of variance.

Results and discussion

The first part of the study is related to the definition of educational aims' factors for normal and gifted students and the determination of their structures. After submitting educational aims to Principal Component Analysis, three factors for normal students and three for the gifted were extracted and rotated according to an Oblimin criterion (common variance for the normal 54.6%, and for the gifted 53.0%). There were two interpretable factors for the normal group and two for the gifted group (with correlation: for the normal r=-0.46, and for the gifted r=0.43). Structure matrices of aims for normal and gifted students are presented in Table 2 and 3.

Table 2: Educational aims for normal students
Structure matrix (Oblimin rotation, Kaiser normalization)

Educational aims	Factor 1	Factor 2	Factor 3
Diligence	*.76469*	-.39201	
Trustworthiness	*.72917*	-.39356	
Sense of responsibility	*.72879*	-.49038	
Ability for peace making	*.67657*		.32681
Tolerance	*.67112*	-.35852	
Ambition	*.65427*	-.46423	
Orderliness	*.65368*		.43038
Contentment	*.53236*	-.47508	
Creativity	.41720	*-.79475*	
Autonomy of thinking	.51132	*-.75940*	
Ability for decision making	.57329	*-.74153*	
Independence	.30170	*-.72197*	
Cognitive flexibility	.32743	*-.63984*	
Political consciousness			.77388
Social adjustment		-.41198	.55996

Table 3: Educational aims for gifted students
Structure matrix (Oblimin rotation, Kaiser normalization)

Educational aims	Factor 1	Factor 2	Factor 3
Creativity	*.78115*		
Autonomy of thinking	*.78033*	.32139	
Ability for decision making	*.72899*	.46316	
Independence	*.71607*		
Cognitive flexibility	*.59877*		.34205
Contentment	*.55471*	.45443	
Ambition	*.54953*	.51246	
Diligence	.45139	*.76748*	
Orderliness		*.74116*	
Trustworthiness	.42580	*.70305*	
Sense of responsibility	.52537	*.69246*	
Ability for peace making		*.65328*	.44629
Tolerance	.35198	*.60129*	
Social adjustment	.33857	*.47633*	.36774
Political consciousness			.75546

It is visible from Table 2 and 3 that majority of aims included in the first factor for normal students were contained in second factor for gifted students. The second factor for the normal was in the same way similar to the first factor for the gifted. Factors could be named by the respective first aims which had the highest loading: "Diligence" and "Creativity" for normal students, and "Creativity" and "Diligence" for gifted students. Along with diligence aim, "Diligence" factor embraced responsibility, ability for peace making, tolerance and orderliness. Besides creativity, "Creativity" factor included autonomy of thinking, ability for decision making, independence and cognitive flexibility.

The remaining aims, ambition and contentment, entered into the first factor for both groups making them definitely different: ambition and contentment were connected with diligence for normal students, but with creativity for gifted students. It was concluded that diligence (associated with contentment and ambition) was more important than creativity in the education of normal students. On the contrary, in the education of gifted students, creativity (followed by ambition and contentment) had higher value than diligence.

The main differences between educational aims' factors for normal and gifted students confirm different expectations from education of normal and gifted students. Students, parents and teachers recognized development of

creativity (fluency, flexibility, originality) as a crucial need of gifted students, and it is a very promising orientation of our respondents. Characteristics, such as cognitive flexibility, autonomy of thinking, ability for decision making and independence, represent elements of, or preconditions for appearance and development of giftedness, gifted behavior and gifted performance and products.

The finding concerning expectation from normal students, to learn more diligence, is also acceptable and easily explicable. That kind of request could be based on the fact that many average ability people have to work, hard and long, or at least more than highly able, on their tasks to attain high achievement. Even if high success is not achieved, students' diligence is a very valued quality, not only as a component of a particular behavior (confirming readiness to complete school tasks), but as a personality trait. Implicit idea here is that diligence can in some extent compensate for smaller ability. Diligence is desirable quality of adults too, introducing persistence and other mature reactions of individual. For indicated premises, diligence could be supported as an important aim of the education.

It is obvious that students, parents and teachers are aware of a vital significance of creativity in gifted education. The role of diligence in education of normal students is also very well known. Different participation of ambition and contentment in educational factors' structures for normal and gifted categories of students confirms the differences between expectations of their education. Normal students have to express their ambition and to experience contentment in developing diligence, and gifted students in developing creativity. In the case of normal students it means that their achievement motive and positive emotions ought to come together with diligence in the process of acquiring knowledge. In the case of the gifted, readiness to make efforts, achievement of recognition and satisfaction should be developed in coalescence with creativity.

The second part of the study was devoted to the examination of characteristics of respondents and their environment related to their opinions on educational aims' factors.

Students', parents' and teachers' opinion on educational aims for normal and gifted students. Opinions of students, parents and teachers on educational aims' factors showed that they had very similar ideas about what different categories of students had to learn and develop at school (see Table 4). The only significant differences emerged on the second factor for the gifted: parents said that gifted students should acquire "Diligence" more than students themselves were convinced ($F=7.71$, $p=.0005$).

Students, parents and teachers had similar demands on the education for normal and gifted students. There is high accordance in expectations of all relevant parts and in education included individuals about what they ask from the education. Parents ask for more diligence in the case of the gifted than their children, probably because parents are more aware than youngsters that creativity should be supported with hard work to reach creative products. In that sense, diligence, as a trait of personality or behavior, will supply more

information, broader knowledge, giving more opportunities to redefine problems and find new solutions.

Table 4: Means, Standard Deviations, and F values on educational aims factors for three respondent groups

Educational aims factors	Students N=585		Parents N=179		Teachers N=112		F	Signifi-cance
	M	S.D.	M	S.D.	M	S.D.		D.F.(2,582)
NORFAC 1	30.19	5.42	31.19	5.48	31.31	5.42	2.47	.0652
NORFAC 2	23.73	3.02	24.12	3.07	24.13	2.98	1.21	.3000
GIFFAC 1	30.32	4.22	30.67	3.87	30.97	4.19	1.11	.3278
GIFFAC 2	26.80	4.75	28.60	4.78	27.20	5.38	7.71	.0005

Note: NORFAC 1 = Diligence for normal students
NORFAC 2 = Creativity for normal students
GIFFAC 1 = Creativity for gifted students
GIFFAC 2 = Diligence for gifted students

The type of school program. The type of school program represented environment variable of the highest interest in all three respondent groups. Students', parents' and teachers' opinions were tested in relation to the type of programs they were included or interested in. It was proposed that respondents' experience with a particular programs (regular or special) had significant influence on their opinions on educational aims for normal and gifted students. Obtained results confirmed proposed relations.

The role of the type of school program students attended was examined in relation with the type of school they attended (mathematical, linguistic, politechnical), and their sex. The type of school and program interaction effect was significant once, concerning second factor in education of normal students (F=3.29, p=.039). Students from regular programs, compared with students from special programs, thought that normal students had to develop more "Creativity." At the same time, students of mathematics thought that normal students had to develop more "Creativity" than students of linguistics believed. Students of linguistics thought more frequently than students of technical that normal students had to develop "Creativity" at school. All other differences emerged due to the main effect of type of school program and sex.

Students from regular programs had higher demands for all students than their peers from special programs (see Table 5). Normal students should learn more "Diligence" (F=20.76, p=.000) and "Creativity" (F=12.18, p=.001), and

gifted should learn more "Diligence" (F=17.20, p=.000). The type of school programs the students attended did not have significant effect on their opinions concerning "Creativity" for the gifted (F=0.04, p=.845). Whatever programs students attended they found "Creativity" equally important (very important) in education of the gifted.

Table 5: Means and F values of educational aims' factors for male and female students from regular and special programs

Educational aims' factors	Type of program	Students Male M	Students Female M	Type of program & sex main effect (F)		Signifi-cance	Type of program & sex interaction effect (F)	Significance D.F:(1,290)
NORFAC 1	Regular	30.56	33.43	Program	20.76	.000	1.99	.160
	Special	28.54	29.60	Sex	9.42	.002		
NORFAC 2	Regular	23.67	12.18	Program	12.18	.001	0.00	.957
	Special	22.44	23.95	Sex	18.27	.000		
GIFFAC 1	Regular	28.84	31.70	Program	0.04	.845	2.71	.101
	Special	29.59	30.75	Sex	15.36	.000		
GIFFAC 2	Regular	27.36	29.27	Program	17.20	.000	2.89	.090
	Special	25.96	25.94	Sex	2.75	.098		

Similar to their children, parents of students from regular programs expressed higher requests from normal students than parents of students from special programs did (for normal students: "Diligence" – F=8.95, p=.003, "Creativity" – F=9.57, p=.002; for gifted students: "Creativity" – F=3.42, p=.066, "Diligence" – F=3.55, p=.061).

The type of school program had a significant effect on teachers' opinions on educational aims, too. Teachers enrolled in regular programs insisted more on developing "Creativity" of normal students than teachers from special programs (F=4.38, p=.039).

On the whole, the type of school program had the most powerful effect on students' opinions, less on parents' opinions and the smallest on teachers' opinions on educational aims for normal and gifted students. However, all respondent groups asked for more creativity in the education of normal students, probably because their need to develop creativity was neglected in regular programs. Other findings could be interpreted in the same way. Students, parents and teachers were, perhaps, less satisfied with services in regular than in special programs.

Students' and parents' sex. An impressive effect on students' opinions on aims had their sex (see Table 5). Females expressed higher expectations than

males. Females students believed that normal and gifted students ought to learn more, to accomplish all proposed aims in greater portion than male did (for normal students: "Diligence" – F=9.42, p=.000, "Creativity" – F=18.27, p=.000; for gifted students: "Creativity" – F=15.36, p=.000, "Diligence" – F=2.75, p=.098). It was very difficult to say where sex differences came from. Plausible hypothesis is that females are more sensitive, react more emotionally, even exaggerate in their demands from the education, whereas males' answers are outcomes of their more realistic attitude.

In the group of parents, there were not significant effects of the sex. Mothers and fathers had similar opinions on aims of normal and gifted education (see Table 6).

Table 6: Means, Standard Deviations, and F values on educational aims' factors for students' fathers and mothers

Educational aims' factors	Fathers N=63		Mothers N=107		F	Significance D.F:(1,168)
	M	S.D.	M	S.D.		
NORFAC 1	31.32	6.02	31.17	5.23	0.03	.8654
NORFAC 2	24.22	3.03	24.04	3.15	0.14	.7085
GIFFAC 1	30.67	4.10	30.62	3.76	0.01	.9358
GIFFAC 2	28.51	5.10	28.75	4.66	0.10	.7547

Educational and occupational level of parents. Parents' education and occupation did not play a significant role in students' opinions concerning the education of normal and gifted students, except in one case. Students whose mothers had higher education stressed more "Creativity" in education of the gifted than students whose mothers had lower education (F=3.86, p=.022). There was a tendency in the same way for the effect of mothers' occupation (F=2.61, p=.075).

There were no significant effects of parental education and occupation on their opinions on aims.

Teachers' sex, type of school subject they teach and length of their teaching service. Teachers' sex and type of school subject they tought did not make a significant effect on their opinions on aims. The only two significant differences in teachers' opinions were connected with the length of their teaching service. Teachers with shorter teaching service insisted more than others on "Creativity" for normal students (F=6.93, p=.0097), as well as for gifted students (F=4.33, p=.040). The fact that younger teachers appreciated creativity very much could be described as an encouragement, indicating more enthusiasm in their work with children now and promising more creative school setting in the future. The question is how to improve the status of creativity among older teachers. More serious question is how to keep higher

status of creativity in opinion of younger teachers. Teachers' willingness to work on creativity should be supported during their teaching service as long as possible.

Conclusions and implications

Different school treatment of normal and gifted students is recommended because of differences in their educational needs. Consequently, different aims of the education for the gifted and the rest of students were proposed and confirmed in some researches. Presented study of students', parents' and teachers' opinions on educational aims did confirm significant differences in respondents' concepts of the education of normal and gifted students. Respondents thought that students had to accomplish many traditional aims (such as diligence, responsibility, orderliness), as well as new aims (like creativity, autonomy of thinking, ability for decision making and independence). More traditional aims represented by "Diligence" were estimated as more important for normal students, though aims encompassed by "Creativity" had higher relevance for gifted students. Obtained data are similar to those from German research (Urban, 1985).

It seems that differences among expectations from normal and gifted education are greater in present investigation. Ambition and contentment are combined differently with diligence and creativity for two investigated groups of learners. Task commitment and intrinsic motivation could be developed with diligence in the case of normal students. Personal interests and satisfaction are going with creativity in the case of gifted students. Particular aim has more chance to be accomplished on a higher level becoming a part of adequate and suitable demands.

Some of respondents' characteristics had significant effect on their opinions on educational aims for normal and gifted students. Students', parents' and teachers' opinions on aims were significantly influenced by experience respondents had with regular and special programs. Respondents connected with regular programs had higher demands from all students, especially from normal students. Probably students, parents and teachers included in regular programs are not satisfied with the present situation at ordinary schools and are looking for better schools and education in general. People from special schools and programs may be simply better supplied.

The sex had significant effect on the demands of youngsters, but did not affected demands of adult respondents. It happened that educational and occupational level of parents had some influence of students' opinions, but not on their own opinions. Among characteristics of teachers that were investigated, only duration of their teaching service was found to be of importance for their opinions. The effect of students' sex to their opinions on educational aims

should be examined further as well as the characteristics of teachers which are relevant for their opinions.

Planning of adequate school treatment has to respect demands of students apart from the information on their abilities, aptitudes and capacities. Differences in expectations from the education of normal and gifted students have to be recognized and included in designing school setting. For example, acceptance of specific combination of educational aims could make them more achievable. Otherwise, misunderstanding will start from the beginning. Taking into consideration the effects of characteristics of persons involved in education might improve educational provision for all students.

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KAKO ŠKOLOVATI DAROVITE UČENIKE

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U ovom radu ispitivana su mišljenja učenika, roditelja i nastavnika o ciljevima obrazovanja običnih i darovitih učenika sa ciljem da se utvrdi koje karakteristike i veštine daroviti učenici treba da nauče i razviju u toku svog školovanja. Učenici, roditelji i nastavnici rangirali su petnaest vaspitno-obrazovnih ciljeva preuzetnih od Urbana (Urban, 1985) prema značaju koji imaju za obične i darovite učenike. Faktorska analiza dala je po dva interpretabilna faktora ciljeva za grupu običnih i grupu darovitih učenika. Dalja analiza bila je posvećena pitanju koje karakteristike ispitanika značajno razlikuju njihovo mišljenje o ciljevima koji su predstavljeni faktorima. Ispitan je efekat vrste škole (matematička, jezička, tehnička) i tipa školskog programa (običan, poseban za darovite); pola; obrazovanja i zanimanja roditelja; školskog predmeta i dužina nastavničke službe. Dobijeni podaci sugerisali su plodne ideje za zakonsku regulativu, školsku praksu i nastavnike koji rade sa darovitim učenicima.

Ključne reči: daroviti učenici, vaspitno-obrazovni ciljevi, vrsta škole, školski proram.

КАКИМ СПОСОБОМ ОБУЧАТЬ ДАРОВИТЫХ УЧЕНИКОВ

Славица Максич

В настоящей работе проведены испытания мнний учеников, родителей и учителей (преподатвателей) о целях образования обыкоповенных и даровитых учеников, чтобы утвердить какие характеристики и умения даровитые ученики должны выучить и развивать в течение своего обучания. Ученики, родители и преподаватели рангировали пятнадцать воспитательно-образовательных целей, принятых от Урбана (Урбан, 1985-ый год), по отношению к значению которые они имеют для обыкновенных и даровитых учеников. Факторный анализ отдал по двух выяснительных факторов целей – для группы обыкновенных и группы даровитых учеников. Дальнейший анализ был посвяйен вопросу – какие характеристики испытуемых значительно различаают их мнение о целях представленных факторами. Проведено испытание эффекта вида школы (математическая,

языческая, техническая), типа учебной программы (обыкновенная, отдельная для даровитых); потом пола., образования и профессии родителей; школьного предмета и длины службы преподавателей. Полученные данные внушали плодородные идеи для законодательных регламнтов, школьной практики и преподавателей работающих с даровитыми учениками.

Ключевые слова: даровитые ученики, воспитательно-образовательные цели, вид школы, учебная программа.