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Ability Grouping and Pupils' Results on the National Assessment of Knowledge

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Abstract

The first part of the article deals with the characteristics of ability grouping and its impact on pupils' learning outcomes, the importance of teaching differentiation and individualization as well as their advantages and limitations.

The second part of the article presents the results of a study that attempted to examine the organizational characteristics of ability grouping in Slovenian and Mathematics in Slovenian primary schools, call attention to the role of the socio-cultural environment when dividing pupils into levels and analyze the performance of ability-grouped pupils, on the one hand, and pupils from heterogeneous groups, on the other, on the National Assessment of Knowledge. The research comprised 1,454 ninth-grade pupils from 41 Slovenian primary schools. The study has shown that approximately three-quarters of schools implement ability education; the majority offer classes at three and the rest at two difficulty levels. Pupils' school grades and socio-cultural background play an important role in the ranking of pupils into levels. The results showed a medium-to-high grade statistical correlation between pupils' levels in Mathematics and Slovenian language, on the one hand, and their mother's and father's education and their average grades for Slovenian and Mathematics in the 7th, 8th and 9th grades, on the other hand. This result indicates that social background significantly influences pupils' learning performance. In addition, the study has shown that ability grouping can be effective only if teachers adjust both the teaching methods and learning materials to the pupils at each individual level.

Key words: *differentiation of instruction; external assessment of knowledge; Mathematics; primary school; Slovenian; socio-cultural environment.*

Introduction

Differentiation and individualization in education are typically of considerable interest to both educational experts and school policies. One of the general principles of education is the principle of fairness. According to the White Paper on Education in the Republic of Slovenia (2011), fairness in education is the core element of social justice and is closely linked with equality. Consequently, justice in education is often understood as equality of educational opportunities, which is a prerequisite for all people in modern societies based on liberal and democratic principles, to have equal opportunities and be successful in their lives. Since equality of opportunity in society strongly depends on individuals' access to education, the state striving for a just society must take various measures (e.g. through the implementation of positive discrimination policies for children from socially and culturally underprivileged environments, by providing the possibility of individualization of school system and instruction, etc.) to provide everyone with equal educational opportunities (White Paper on Education in the Republic of Slovenia, 2011, pp. 14-15). In order to enable all pupils to achieve the same standards of knowledge, it is important to take into account their effort and their individuality. Teaching requires a more tailored approach that better suits the characteristics of each individual pupil. Therefore, there is a need for learning individualization (consistent and complementary with learning differentiation) that will commit both schools and teachers to discovering, respecting and promoting pupils' individual traits. Learning and teaching, even though taking place in groups, should be as individualized and personalized as possible, i.e. adjusted to the learning needs, desires and tendencies of each pupil, so as to allow them to be independent in their work to the largest extent possible (Strmčnik, 1987). Besides individualization, Strmčnik (1987) also highlights the need for learning differentiation, which he sees mostly as a democratic organizational measure by which pupils are streamed in terms of the differences between them into temporary or permanent homogenous and heterogeneous learning groups. This should enable schools to adjust the learning objectives, content and didactic and methodological styles to implement the social and individual educational aims.

Strmčnik (1999) furthermore emphasizes that in the upper, in particular final grades of primary education, didactic and methodological differentiation alone is not enough; the educational aims and content likewise need to be differentiated and individualized. He also considers partial external differentiation (ability grouping) to be far simpler, cheaper, more reliable and easier to implement compared to the internal differentiation and individualization.

Each person's characteristics, abilities and talents need to be taken into account so as to enable optimal development in all possible areas.

Plut-Pregelj (1999) is critical of the differentiation at the level of primary schools. She sees "curriculum differentiation in comprehensive schools as an unsuccessful approach at resolving learning failures and providing a better general education". The

quality of education depends on the situation in the classroom, where the teacher plays the main role. For this reason, educating teachers and providing them with basic conditions for professional and independent work is the most important objective.

Authors such as Askew and Wiliam (1995) likewise emphasize that grouping can only be successful when the teaching methods and the teaching materials are also adjusted to the pupils. Askew and Wiliam (1995), for example, reviewed various studies and found that grouping had certain positive effects in teaching Mathematics for pupils at higher levels if the teaching material was tailored to them; however, they noted that it was not entirely clear whether pupils' progress was the result of the teaching materials or the teachers' attention.

In 1996 the Act on Primary Schools was passed. It set out that in the 1999/2000 school year Slovenian schools would start implementing 9-year primary school programmes together with differentiated teaching. According to the Act on Primary Schools, only internal or didactic differentiation is allowed in the first triad; between the last assessment period in the 4th grade and the end of the 7th grade *flexible differentiation,* also referred to as successive combination of *fundamental and grouping classes,* is allowed. For the last two years of primary education, a systemic solution that provides modified, more moderate solutions, i.e. *partly external differentiation or the setting-system* was envisioned. The main question regarding flexible differentiation and the setting system is how to divide and rank pupils into different groups. Established school systems across Europe and the USA recognize the following basic types of grouping:

- Streaming of pupils into homogeneous classes in line with their results on the standardized ability (intelligence) tests or knowledge tests. Such classes are taught at different difficulty levels in all or in the majority of subjects;
- Setting or regrouping of pupils in certain subjects. The groups are more flexible than the homogeneous classes;
- Joplin's plan, which involves grouping of pupils between classes of different grades or age;
- Within-class grouping into two or three groups, usually for reading and Mathematics classes in heterogeneous groups;
- Mixed-ability grouping where teachers only occasionally intentionally or unintentionally regroup pupils in terms of gender, interests, etc. (Žagar et al., 2003).

The most common type of grouping in Slovenian primary schools is ability grouping. The "setting" model is the nearest to ability grouping in the 8th and 9th grades. The following are the main features of ability grouping in Slovenian primary schools: it is implemented in three school subjects (Slovenian language, Foreign language and Mathematics), while in the other subjects pupils are taught in their original mixed classes; in most cases pupils are divided into three difficulty levels; they choose their original difficulty level by themselves and are allowed to transfer between levels in the course of the year; the school provides only advice on what is best for them.

This is thus a milder type of ability grouping in certain subjects that is not based on preliminary tests of pupils' abilities and knowledge. The term "setting" may thus be used only conditionally to refer to ability grouping in our 9-year primary schools (ibid).

External differentiation in the final two years of primary schools has often been criticized. The expressed criticism of external differentiation resulted in new legislation in 2006. The Act on Primary School Act Amendments (Official Gazette of the RS, No. 60/2006) and the Rules on the Implementation of Differentiation in Primary School Education (Official Gazette of the RS, No. 63/2006) were adopted, replacing the Rules on Specific Conditions for the Organization of Ability Grouping in 9-year Primary Schools. Today the teaching of Slovenian, Hungarian and Italian (the latter two in the ethnically-mixed territories), as well as of Mathematics and foreign languages in the 8th and 9th grades thus has the following organizational characteristics:

- pupils are divided into learning groups;
- they are taught simultaneously by two teachers;
- they are grouped in terms of their abilities;
- or as a combination of differentiation forms as set out earlier in this paragraph (Official Gazette of the RS, No. 63/2006), which means that, according to the law, the decision on the organization type is left to each individual school (Kalin, Valenčič Zuljan, Vogrinc, 2010, p. 146).

In case of a small number of pupils, the school implements only internal differentiation.

An important aspect of differentiation and individualization is the differentiation of content. It may be quantitative or qualitative. Quantitative differentiation of teaching content provokes the question whether all pupils should learn all subjects to the same extent. Some diversity and different options are provided with elective and extra-curricular subjects. However, teachers also have to ask themselves within their own subject to what extent their pupils are supposed to master a certain topic – whether there is also possibility for differentiation and individualization here and to what extent they may adjust the selected topic to individual pupils, their interests, talents or their slightly lower abilities. Their educational objectives will have to be formulated accordingly, in line, of course, with the required minimum standards of knowledge and basic teaching aims (Kalin, Valenčič Zuljan, Vogrinc, 2010).

In qualitative (in-depth) differentiation of learning content, the teachers have to consider the depth to which they want to teach the pupils about a particular topic and whether all pupils should reach the same depth. Since pupils differ in their abilities, gifts, talents and interests, it is unrealistic to expect all pupils to be able to achieve the same level of understanding of the learning content. The depth should be adjusted to pupils' individual abilities. This is a challenging task for teachers with a large number of pupils. At this point we want to stress again how important it is for the teacher to make a preliminary analysis and foresee the expected depth in his or her teaching plan (ibid).

The Aim of Empirical Research

Studying the impact of ability grouping on pupils' success is relatively complicated and delicate. When speaking of ability grouping, we refer to homogeneous groups of learners that have been established on the basis of criteria determined in advance (e.g. pupils' school grades, teachers' opinion, pupils' wishes, parents' desires, etc.).

In our study we were interested in the following:
– organization of ability grouping in Mathematics and Slovenian in 9th grades in the participating primary schools;
– the role of socio-cultural environment when dividing pupils into levels;
– pupils' results in ability and heterogeneous groups.

Research Methodology

The study is based on the descriptive and causal non-experimental method of empirical educational research.

The sample comprised 1,454 participants - 9th grade pupils from 41 Slovenian primary schools from both urban and rural areas. There were schools from each of the 12 statistical regions of the Republic of Slovenia included in the sample. The sample was relatively balanced in terms of gender: 54% of the respondents were girls and 46% were boys.

The data about the 7th, 8th and 9th grade pupils' final grades for Slovenian and Mathematics, and pupils' results on the National Assessment of Knowledge in Mathematics and Slovenian was acquired from the National Examination Centre of the Republic of Slovenia. A questionnaire administered to pupils was used to obtain information about the organization of ability grouping for individual schools and the socio-cultural environment indicator. The students' socio-cultural environment indicator included data about their parents' education, material conditions at home, i.e. information about whether pupils have their own desk at home, their own room, a quiet place to study, a computer to use for school, access to the Internet, books and magazines to help them with school work, dictionaries, literary works, works of art (e.g. pictures), DVDs or video players, digital cameras or video cameras, their own MP3 player as well as the data about whether they attend out-of-school activities: local foreign language courses, language courses abroad, music school, dance school, computer courses, fine arts activities, chess club, the Scouts, etc. (Žakelj, Ivanuš-Grmek, 2010).

The results are presented in tables and graphs. Basic descriptive statistics, Pearson's correlation coefficient and the classical test theory reliability analysis (Guttman-Cronbach's α coefficient) were applied in data analysis.

Results and Interpretation

Organization of Ability Grouping in Schools

The pupils were asked if they had had ability grouping in Mathematics and Slovenian language, and if tasks were in accordance with their level.

Each school decides on its own how its teaching will be organized. If they decide on ability grouping in Mathematics and Slovenian classes the pupils are divided into two or three levels of difficulty depending on their grades and other indicators (e.g. their parents' preferences or the preferences of the pupils themselves). The most successful pupils are placed in Level 3, the less successful in Level 2 or Level 1. If a school does not implement ability grouping, classes take place in one heterogeneous group of pupils regardless of their results in those subjects. As can be seen from the table below, Slovenian classes at the same school may be organized in a different way than those in Mathematics.

Table 1. *Number (f) and structural percentages (f %) of pupils according to the organization of classes in Slovenian and Mathematics in the 9th grade*

Organization of classes	Slovenian		Mathematics	
	f	f%	f	f%
Ability grouping at two levels	39	2.70	48	3.33
Ability grouping at three levels	1,068	73.96	1,130	78.25
Heterogeneous groups	273	18.91	220	15.23
Two teachers in the classroom	54	3.74	38	2.63
Other	10	0.69	8	0.55
Total	1,444	100.00	1,444	100.00

The results indicate that the *majority of schools* participating in the study *implemented ability grouping,* i.e. 76.66% of pupils in Slovenian and 81.58 % of pupils in Mathematics classes were included in learning differentiation. Ability grouping at three levels of difficulty was the prevalent type of differentiation, since 73.96 % of pupils in Slovenian and 78.25 % in Mathematics participated in it. Ability grouping at two levels of difficulty was less common: 2.70 % of pupils in Slovenian and 3.33% of pupils in Mathematics classes participated in it. The results also showed ability grouping to be more common in Mathematics at the participating schools.

Table 2. *Number (f) and structural percentages (f%) of pupils according to the grouping of pupils in Slovenian and Mathematics classes*

Difficulty level	Slovenian		Mathematics	
	f	f%	f	f%
Level 1	158	13.01	231	18.15
Level 2	617	50.82	622	48.86
Level 3	439	36.16	420	32.99
Total	1,214	100.00	1273	100.00

The structure of pupils in terms of levels was as follows:

– in Slovenian, 13.01 % of pupils were included in Level 1, 50.82 % in Level 2 and 36.16 % in Level 3;
– in Mathematics, 18.15 % of pupils were included in Level 1, 48.86 % in Level 2 and 32.99 % of pupils in the most difficult Level 3.

The Role of Socio-Cultural Environment in Group Level Placement of Pupils

The socio-cultural environment indicator in our study comprises parents' education, their material situation at home as well as pupil's active participation in out-of-school activities (Žakelj, Ivanuš-Grmek, 2011, p. 13).

Figure 1 shows the distribution of pupils across levels in Mathematics and Slovenian with respect to the socio-cultural environment indicator.

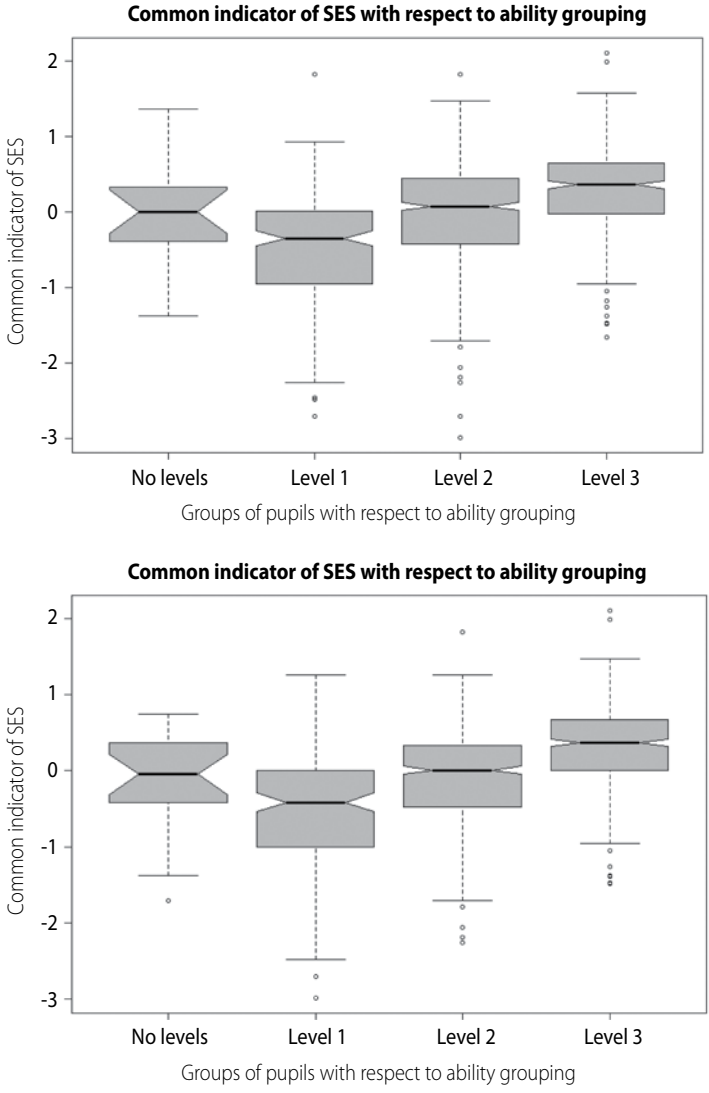


Figure 1. *Common socio-cultural environment indicator with respect to the pupils' level in Mathematics (top diagram) and in Slovenian (bottom diagram).*

Pupils with a higher socio-cultural environment indicator were at a higher level in both Slovenian and Mathematics.

Table 3. *Statistical significance levels (p) and correlation coefficients (r_{xy} between pupils' levels in Mathematics and Slovenian and the variables)*

Variables	Slovenian		Mathematics	
	r_{xy}	p	r_{xy}	p
Mother's education	0.259533	0.00	0.257321	0.00
Father's education	0.200323	0.00	0.23081	0.00
Books	0.247126	0.00	0.264997	0.00
Dictionaries	0.222993	0.00	0.226448	0.00
Literary works	0.292219	0.00	0.253052	0.00
Slo7	0.652656	0.00	0.542496	0.00
Slo8	0.662646	0.00	0.580645	0.00
Slo9	0.610646	0.00	0.580698	0.00
Mat7	0.583143	0.00	0.687664	0.00
Mat8	0.584742	0.00	0.692701	0.00
Mat9	0.571781	0.00	0.669362	0.00
Desired secondary school	0.563183	0.00	0.555856	0.00

A correlation between pupils' levels in Mathematics and Slovenian classes and the variables in the table above indicate the following:

- The statistical correlation between the pupils' level in Slovenian and Mathematics, on the one hand, and parents' education, the number of books, dictionaries and literary works in the family, on the other, was low because correlation coefficients ranged from 0.20 to 0.29.
- Pupils' level in Slovenian and Mathematics classes and their average grade in the 7^{th}, 8^{th}, and 9^{th} grades showed a medium positive correlation that occasionally bordered on high positive statistical correlation. Correlation coefficients ranged from 0.54 to 0.69.
- Pupils' level in Slovenian and Mathematics classes and the desired secondary school enrolment showed a medium positive statistical correlation. The correlation coefficient for both Slovenian and Mathematics was 0.56.

The results of an evaluation study (Žagar et al., 2003) have shown that social background had the greatest influence on pupils' performance. It was even more important than the abilities they demonstrated on the tests upon school enrolment. However, social background did not have an influence on learning performance in heterogeneous groups. Other authors (e.g. Boaler, 1997; Aylett, 2000) have found that pupils' social background (lower social status) does have an impact on the ranking of pupils into a particular (lower) level group.

We can conclude that socio-cultural environment factors play an important role in the development and school performance of each individual. Education, creativity and social context are intertwined and form a wide array of factors that influence

an individual's performance in school and his/her professional status. On average, children from a socio-culturally advantaged environment achieve better school results and get a better education. They also reach a higher level of formal education than children from socio-culturally disadvantaged environments (Pergar-Kuščer, 2003). According to the author, various data indicate important differences between children of different social background in terms of their performance at school and their later education and training (ibid).

Pupils' Performance in Level Groups

Schools also monitor the efficiency and quality of the education system with the National Assessment of Knowledge test, an external-type of knowledge testing. Its main feature is that all pupils have to solve the same or comparable tasks, that the tests are administered in the same way and that the examinations are, at least to some extent, metrically verified (Bucik, 2001). The denomination and the aims of external knowledge testing, which the Republic of Slovenia introduced for primary school graduates in 1990/91, have changed many times since then. At present, the National Assessment of Knowledge (hereinafter NAK) is in place; however, it only has an informative and formative function, not a selective one. This means that it is not only result-oriented; instead, we are also interested in the extent and quality of pupils' knowledge as well as in the education process and the approaches to learning and teaching (Žakelj, Ivanuš-Grmek, 2010).

Table 4. *Pupils' results on the NAK in Slovenian and Mathematics classes with respect to level*

Difficulty level	Subject	n	Arithmetic mean $\bar{X}$ 9. r	Standard deviations	Arithmetic mean $\bar{X}$ NPZ	Standard deviations
Level 1	SLO	153	2.32	0.61	42.52	13.11
	MAT	231	2.22	0.48	28.51	14.12
Level 2	SLO	599	3.24	0.79	58.06	13.72
	MAT	622	3.12	0.83	48.25	17.24
Level 3	SLO	423	4.37	0.68	74.67	12.05
	MAT	420	4.37	0.73	74.09	16.37
No levels	SLO	230	3.68	1.17	64.94	19.71
	MAT	194	3.60	1.12	55.9	28.28

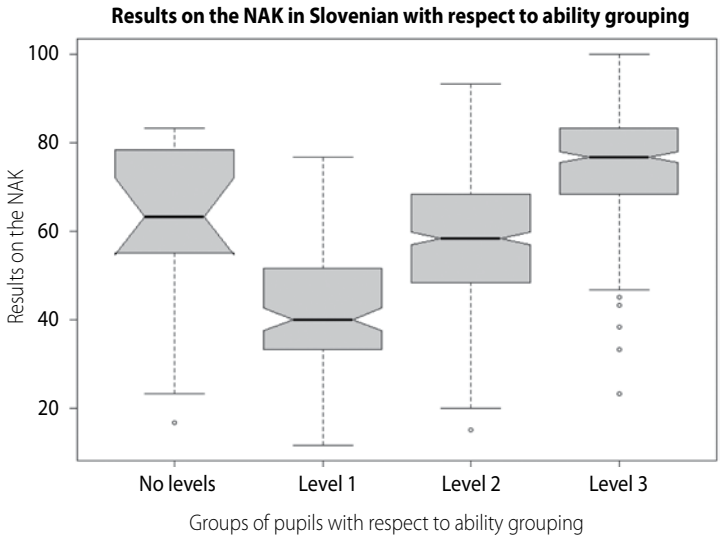
Legend: $\bar{X}$ 9. r –average 9th grade pupils' results in Slovenian and Mathematics classes, $\bar{X}$ NPZ - pupils' average results on the NAK in Slovenian and Mathematics.

The best results in Slovenian on the NAK were achieved by pupils from Level 3 and the lowest by pupils from Level 1. Average results in Slovenian on the NAK for pupils from heterogeneous groups were lower than average results of pupils attending Level 3 and higher than the results of Level 2 pupils. The average final grades in Slovenian achieved by 9th grade pupils from heterogeneous groups were slightly lower than average final grades of pupils from Level 3 and higher than average grades of Level 2 pupils (table 4). $\bar{X}$

In Slovenian, the differences in average results on the NAK between different levels were slightly less manifest than in Mathematics. The best results in 9th grade Mathematics were achieved by Level 3 pupils and the lowest by those from Level 1. Average results on the NAK in Mathematics for pupils from heterogeneous groups were lower than average results of pupils from Level 3 and higher than results of Level 2 pupils. The average final grades of 9th grade pupils in Mathematics from heterogeneous groups were slightly lower than average final grades of pupils from Level 3 groups and higher than average grades of Level 2 pupils (table 4).

The Span of Pupils' Achievements in Levels

The dispersion of results in Figure 2 might suggest that ability grouping in both Slovenian and Mathematics classes is more suitable for better pupils, since the average results of the highest difficulty levels on the NAK were higher than the results of pupils from heterogeneous groups; i.e. the best pupils from the highest level outperformed the best pupils from the heterogeneous groups. The picture is less clear in the case of pupils with lower grades (Figure 2). Although some Level 1 pupils performed very well (comparable to the pupils from Level 3), we cannot draw any general conclusion on the basis of individual results. We could conclude that those pupils benefited from ability grouping and that it helped them develop their abilities; however, it is also possible that on the basis of their abilities they could have been placed into a higher level group in the first place. Caution is thus needed when making any generalizations.



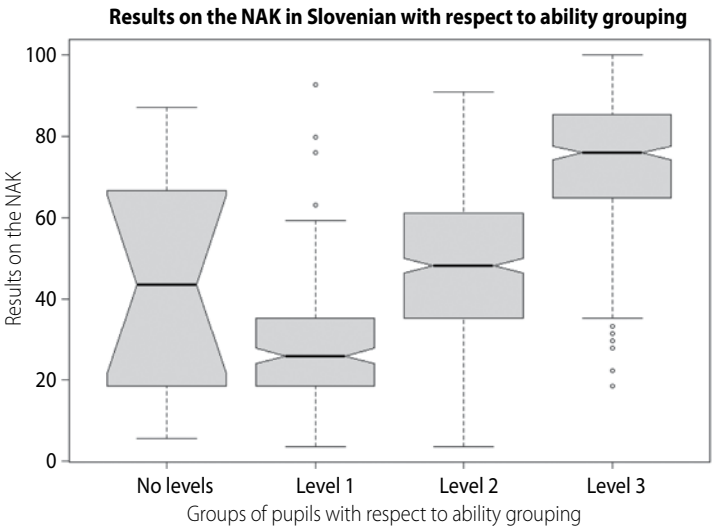


Figure 2. *Pupils' performance on the NAK in Slovenian and Mathematics classes with respect to level*

Linchevski (1995), the author of four longitudinal studies on the results in Mathematics and ability grouping of pupils in Israel, had come to similar conclusions. In one of his studies, he found that grouping pupils into different ability-based groups had no impact on their results in Mathematics in ten out of twelve schools. In another study, he compared pupils' results and grades in ability-based groups with those of the pupils from heterogeneous groups. His study showed that pupils with lesser abilities performed considerably worse in ability-based groups than pupils with the same abilities in heterogeneous classes. Linchevski (ibid) thinks that less able pupils in heterogeneous classes achieve better results on tests because their teachers as well as they themselves have greater expectations.

One of the more resonant meta-analytical studies was that of Slavin from 1987, which showed the effectiveness of levels in individual subjects only if teaching methods and teaching materials were adapted to pupils' needs. Dividing pupils into levels without adequate adjustments is ineffective regardless of the teaching subject (Slavin, 1990).

We can conclude that we should not expect positive effects from ability grouping in terms of pupils' results unless the teachers use adequate teaching materials. In addition, it is necessary to point out that much criticism of ability grouping in the higher grades of primary schools refers to the effectiveness of the "streaming" model (dividing pupils into ability-based levels) and less to the "setting" model.

Besides these results, it is also necessary to mention the motivational and emotional-personality aspect of learning because another study (Čagran, Ivanuš-Grmek, Štemberger, 2009; Štemberger, Ivanuš-Grmek, Čagran, 2009) has indicated external differentiation to be linked to the motivation and emotional-personality aspect of education.

The results of this particular study (Štemberger, Ivanuš-Grmek, Čagran, 2009) warn us that Level 1 comprises pupils with less motivation for learning, and that their motivation depends mostly on external incentives. In addition, we must bear in mind that working conditions for teachers differ considerably from one level to another with respect to pupils' motivation. Differences between pupils have to be taken into account in the preparation as well as during the implementation of classes. In Level 1 pupils the teachers must primarily develop an interest for school and school work; in the case of Level 3 pupils, they have to develop, encourage and maintain the existing motivation. They have to make sure that pupils see work as a challenge, and they need to strengthen their inner motivation.

Results of an evaluation study (Žagar et al., 2003) also showed greater motivation in pupils from top difficulty levels, whereas medium and lower level groups did not differ from one another in this respect. Learning motivation decreased significantly in the last two years of primary school (ibid).

Research (Čagran, Ivanuš-Grmek, Štemberger, 2009) also gives a warning that pupils attending classes at different levels of difficulty were statistically significantly different in the following dimensions of emotional and personal aspect of learning: tolerance to failure, feeling of success, resistance to stress and emotional and personal aspects of the area as a whole.

Conclusions

The results of our study into pupils' performance across individual levels suggest that ability grouping is a more appropriate method for better pupils and less so for the less able ones. A medium to high positive statistical correlation between the pupils' level in Slovenian and Mathematics classes, the father's and mother's education and the average grades in Slovenian and Mathematics in the 7th, 8th and 9th grades further corroborated our thesis. Level 1 usually comprises pupils who perform less well and at the same time come from families with less encouraging socio-cultural backgrounds. The results of other studies (Štemberger, Ivanuš-Grmek, Čagran, 2009) have also shown that pupils in Level 1 had lower motivation for learning, and their motivation mostly depended on encouragement from the outside. Linchevski (1995) thinks that less capable pupils in heterogeneous classes perform better on tests because both they themselves and their teachers have higher expectations for them. The results of our study and of others (Slavin, 1987; Linchevski, 1995) suggest that no consistent, reliable results exist about the positive or negative effects of dividing pupils into ability groups. At the same time, some authors (Slavin, 1987; Linchevski, 1995) agree that ability grouping is more effective if teachers adjust both their teaching methods and their learning materials to the pupils in individual levels.

In conclusion, we could say that the type of approach to teaching and learning in school and pupils' socio-cultural background by themselves do not super-determine their performance in school. If knowledge is considered within a wider context, we

cannot avoid the interpretation that knowledge is influenced not only by the school and teaching quality but also other variables ranging from the quality of pupils' lives, and the encouragement or discouragement inherent in their environments (Malačič et al., 2005; Pergar-Kuščer, 2003;Serpell, 1993; Toličič, Zorman, 1977; Žakelj, Ivanuš-Grmek, 2011; Žakelj et al., 2009;) to the individual intellectual abilities (Marjanovič Umek et al., 2006). Education, social context and the issue of creativity intertwine and form a wide array of factors that influence an individuals' performance at school and later their professional status.

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Grupiranje učenika prema sposobnostima i uspjeh učenika na državnoj maturi

Sažetak

Prvi dio članka opisuje značajke grupiranja učenika prema sposobnostima i učinak grupiranja na ishode učenja, važnost diferencijacije i individualizacije nastave, kao i njihove prednosti i ograničenja.

Drugi dio članka prikazuje rezultate istraživanja kojim su se pokušale ispitati organizacijske značajke grupiranja prema sposobnostima u Slovenskom jeziku i Matematici u slovenskim osnovnim školama, skrenuti pozornost na ulogu društveno-kulturnog okruženja na podjelu učenika prema sposobnostima i analizirati uspjeh na državnoj maturi učenika grupiranih prema sposobnostima s jedne strane i učenika iz heterogenih skupina s druge strane. Istraživanjem je obuhvaćeno 1,454 učenika devetih razreda iz 41 slovenske osnovne škole. Rezultati su pokazali da se u otprilike tri četvrtine škola provodi obrazovanje prema sposobnostima; većina škola nudi nastavu diferenciranu prema tri, a ostale prema dvije razine težine. Ocjene učenika i društveno-kulturno okruženje imaju značajnu ulogu u rangiranju učenika prema razinama. Rezultati su pokazali srednju do visoku statističku korelaciju između učeničkih razina u Matematici i Slovenskom jeziku s jedne strane te obrazovanja njihovih majki i očeva kao i njihove prosječne ocjene iz Slovenskog jezika i Matematike u 7., 8. i 9. razredu s druge strane. Dobiveni rezultati pokazuju da društveno okruženje značajno utječe na uspješnost učenja kod učenika. Osim toga, istraživanje je pokazalo da grupiranje prema sposobnostima može biti djelotvorno samo ako učitelji usklade metode poučavanja i učenja, kao i materijale prema svakoj individualnoj razini učenika.

Ključne riječi: *diferencijacija nastave, vanjsko vrednovanje znanja, Matematika, osnovna škola, Slovenski jezik, društveno-kulturno okruženje.*

Uvod

Diferencijacija i individualizacija u obrazovanju obično su od velikog značaja, kako stručnjacima u području obrazovanja, tako i kod određivanja školske politike. Jedno

od općih načela obrazovanja je načelo pravednosti. Prema Bijeloj knjizi o odgoju i obrazovanju u Republici Sloveniji (2011), pravednost u obrazovanju temeljni je element socijalne pravde te je usko povezan s jednakošću. Slijedom toga, pravednost u obrazovanju često se shvaća kao jednakost obrazovnih mogućnosti, što je preduvjet da bi svi ljudi u modernom društvu utemeljenom na liberalnim i demokratskim načelima imali jednake mogućnosti i postigli uspjeh u životu. Budući da ostvarivanje jednakih mogućnosti u društvu uvelike ovisi o pristupu pojedinca obrazovanju, svaka država koja teži pravednom društvu mora poduzeti različite mjere (primjerice, provedbom pozitivne diskriminacijske politike prema djeci iz socijalno i kulturno siromašnih sredina, omogućavanjem individualizacije školskoga sustava i poučavanja i sl.) s ciljem pružanja jednakih obrazovnih mogućnosti svima (Bijela knjiga o odgoju i obrazovanju u Republici Sloveniji (2011, str. 14-15). Kako bi se svim učenicima omogućilo postizanje istih standarda znanja, važno je uzeti u obzir njihov trud i njihovu individualnost. Nastava zahtijeva pristup koji je prilagođeniji i bolje odgovara osobinama svakog pojedinog učenika. Stoga je potrebna individualizacija učenja (dosljedna i komplementarna s diferencijacijom učenja) da bi se potaklo i škole i nastavnike na otkrivanje, poštivanje i promicanje učeničkih individualnih osobina. Učenje i poučavanje, iako se odvija u grupama, treba u najvećoj mogućoj mjeri biti individualizirano i personalizirano, odnosno prilagođeno obrazovnim potrebama, željama i sklonostima svakog učenika, kako bi im se omogućilo da u najvećoj mogućoj mjeri budu samostalni u svom radu (Strmčnik, 1987). Osim individualizacije, Strmčnik (1987) također ističe potrebu diferencijacije učenja, koju on uglavnom vidi kao demokratsku organizacijsku mjeru pomoću koje se učenici grupiraju prema međusobnim razlikama u privremene ili trajne homogene i heterogene skupine. Ovime bi škole dobile mogućnost prilagoditi ciljeve učenja, sadržaj i didaktičko-metodičke stilove pri provedbi društvenih i individualnih obrazovnih ciljeva.

Strmčnik (1999) nadalje ističe da u višim, posebno završnim razredima osnovne škole, didaktičko-metodičke diferencijacije same po sebi nisu dovoljne; potrebno je također diferencirati i individualizirati obrazovne ciljeve i nastavne sadržaje. On također smatra da je djelomičnu vanjsku diferencijaciju (grupiranje prema sposobnostima) daleko jednostavnije, jeftinije, pouzdanije i lakše provesti nego unutarnju diferencijaciju i individualizaciju.

Potrebno je uzeti u obzir osobine, sposobnosti i talente svakog pojedinca te im time omogućiti optimalan razvoj u svim mogućim područjima.

Plut-Pregelj (1999) kritizira diferencijaciju u osnovnim školama. Ona smatra diferencijaciju kurikula u srednjim školama neuspješnim pristupom rješavanju neuspjeha u učenju i pružanju boljeg općeg obrazovanja. Kvaliteta obrazovanja ovisi o situaciji u razredu, gdje učitelj ima ključnu ulogu. Stoga je edukacija i omogućavanje osnovnih uvjeta za profesionalan i samostalan rad od izuzetne važnosti za svakoga nastavnika.

Autori kao što su Askew i Wiliam (1995) također naglašavaju da grupiranje može biti uspješno samo ako su nastavne metode i nastavni materijali prilagođeni učenicima.

Askew i Wiliam (1995) su, primjerice, proučili brojna istraživanja i utvrdili da je grupiranje imalo određene pozitivne učinke iz Matematike kod učenika na višim razinama, ako im je nastavni materijal bio prilagođen. Međutim, istaknuli su kako nije bilo posve jasno je li do napretka učenika došlo zbog nastavnih materijala ili pozornosti koja im je posvećena od strane nastavnika.

Zakon o osnovnim školama donesen je 1996. U njemu je naznačeno da će od 1999./2000. školske godine slovenske škole početi provoditi 9-godišnje osnovnoškolske programe kao i diferencijaciju nastave. Prema Zakonu o osnovnim školama, u prva tri razreda dopuštena je samo unutarnja ili didaktička diferencijacija dok je između zadnjeg polugodišta u 4. razredu i na kraju 7. razreda dopuštena *fleksibilna diferencijacija*, koja se također naziva i uzastopnom kombinacijom *temeljnih i grupiranih razreda*. Za posljednja dva razreda osnovne škole, predviđeno je sustavno rješenje koje omogućuje modificirana, umjerenija rješenja, odnosno *djelomičnu vanjsku diferencijaciju ili 'setting' sustav grupiranja*. Osnovni problem vezan uz fleksibilnu diferencijaciju i *'setting'* sustav grupiranja je kako podijeliti i rangirati učenike u različite skupine. Uspostavljeni školski sustavi u Europi i SAD-u priznaju sljedeće osnovne vrste grupiranja:

Raspoređivanje učenika u homogene razredne odjele u skladu s njihovim rezultatima na standardiziranim testovima sposobnosti (inteligencije) ili testovima znanja (*eng. streaming)*. U takvim razrednim odjelima nastava se izvodi na različitim razinama težine u svim ili u većini predmeta;

- Raspoređivanje učenika u skupine ili njihovo pregrupiranje prema pojedinim predmetima (*eng. setting)*. Skupine organizirane na ovaj način fleksibilnije su nego homogeni nastavni odjeli;
- Joplinov plan, koji uključuje grupiranje učenika iz različitih razreda (2., 3., …) i različite dobi u iste skupine;
- Grupiranje unutar heterogenih nastavnih odjela u dvije ili tri skupine, najčešće za čitanje i nastavu Matematike;
- Grupiranje u nastavne odjele mješovitih sposobnosti gdje nastavnici samo povremeno namjerno ili nenamjerno pregrupiraju učenike prema spolu, interesima i sl. (Žagar i sur., 2003).

Najčešći oblik grupiranja koji se primjenjuje u slovenskim osnovnim školama je grupiranje prema sposobnostima. *'Setting'* model najbliži je grupiranju prema sposobnostima u 8. i 9. razredima. Glavne su značajke grupiranja prema sposobnostima u slovenskim osnovnim školama sljedeće: provodi se u tri školska predmeta (Slovenskom jeziku, Stranom jeziku i Matematici), dok u ostalim školskim predmetima učenici uče u izvornim mješovitim razredima; u većini slučajeva učenici su podijeljeni u tri razine težine; oni sami izabiru svoju razinu težine i dopušten im je prijelaz između razina u tijeku godine; škola samo savjetuje učenike o tome što je najbolje za njih. To je, dakle blaža vrsta grupiranja prema sposobnostima u određenim nastavnim predmetima koja se ne temelji na preliminarnim testovima učeničkih sposobnosti i znanja. Izraz

"'*setting*' može se stoga koristiti samo uvjetno kada se odnosi na grupiranje prema sposobnostima u slovenskim 9-godišnjim osnovnim školama (ibid).

Vanjska diferencijacija u posljednja dva razreda osnovne škole često je bila kritizirana. Izražena kritika vanjske diferencijacije rezultirala je donošenjem novih zakona u 2006. godini. Doneseni su Zakon o izmjenama i dopunama Zakona o osnovnoj školi (Službeni glasnik Republike Slovenije, broj 60/2006) i Pravilnik o provedbi diferencijacije u osnovnim školama (Službeni glasnik Republike Slovenije, broj 63/2006), čime je zamijenjen Pravilnik o specifičnim uvjetima za organizaciju grupiranja prema sposobnostima u 9-godišnjim osnovnim školama. Tako danas nastava Slovenskog, Mađarskog i Talijanskog jezika (potonja dva u etnički miješanim područjima), kao i Matematike i Stranih jezika u 8. i 9. razredu ima sljedeće organizacijske osobine:

– učenici su podijeljeni u skupine za učenje;
– poučavaju ih istovremeno dva nastavnika;
– učenici su grupirani prema njihovim sposobnostima;
– ili se primjenjuje kombinacija oblika diferencijacije navedenih u prethodnim stavkama ovog odlomka (Službeni glasnik Republike Slovenije, broj 63/2006), što znači da zakon prepušta odluku o obliku organiziranja učenika u skupine svakoj pojedinoj školi (Kalin, Valenčić Zuljan, Vogrinc, 2010, str. 146).

U slučaju malog broja učenika, škola provodi samo unutarnju diferencijaciju.

Diferencijacija sadržaja je važan aspekt diferencijacije i individualizacije, a može biti kvantitativna i kvalitativna. Kvantitativnim diferenciranjem nastavnog sadržaja postavlja se pitanje trebaju li svi učenici učiti sve predmete u istom opsegu. Određena doza različitosti i različite mogućnosti pružaju se kroz izborne i izvannastavne predmete. Međutim, nastavnici se također moraju zapitati u kojoj bi mjeri njihovi učenici u sklopu njihovog nastavnog predmeta trebali svladati određenu temu - mogu li i ovdje diferencirati i individualizirati nastavu i koliko mogu prilagoditi odabranu temu pojedinim učenicima, njihovim interesima, talentima ili nešto nižim sposobnostima nekih učenika. Njihovi obrazovni ciljevi morat će se formulirati u skladu s tim ali i s potrebnim minimalnim standardima znanja i osnovnim nastavnim ciljevima (Kalin, Valenčić Zuljan, Vogrinc, 2010).

U kvalitativnoj (dubinskoj) diferencijaciji sadržaja učenja, nastavnici moraju razmisliti do koje razine žele da učenici uđu u određenu temu i trebaju li svi učenici dostići istu razinu. Budući da se učenici razlikuju prema svojim sposobnostima, darovima, talentima i interesima, nerealno je očekivati da svi učenici mogu postići istu razinu razumijevanja sadržaja učenja. Razinu treba prilagoditi individualnim sposobnostima svakog učenika. Stoga ovakav način rada predstavlja značajan izazov za učitelje s velikim brojem učenika. Ovdje želimo još jednom naglasiti koliko je važno da svaki nastavnik napravi preliminarnu analizu i predvidi očekivanu razinu u svom nastavnom planu (ibid).

Cilj empirijskog istraživanja

Proučavanje učinka grupiranja prema sposobnostima na uspjeh učenika relativno je složen i osjetljiv postupak. Kada govorimo o grupiranju prema sposobnostima, mislimo na homogene grupe učenika koje su određene temeljem prethodno definiranih kriterija (npr., razred, mišljenje nastavnika, želje učenika, želje roditelja, itd.).

– U našem smo istraživanju željeli provjeriti sljedeće:
– organizaciju grupiranja prema sposobnostima u Matematici i Slovenskom jeziku u 9. razredima osnovnih škola koje su sudjelovale u istraživanju;
– ulogu društveno-kulturnog okruženja prilikom podjele učenika prema razinama;
– učeničke rezultate u skupinama određenima prema sposobnostima i heterogenim skupinama.

Metodologija

Istraživanje se temelji na deskriptivnoj i uzročno-neeksperimentalnoj metodi empirijskog istraživanja obrazovanja.

Uzorak se sastojao od 1.454 učenika 9. razreda iz 41 osnovne škole smještene u urbanim i ruralnim područjima Republike Slovenije. Uzete su škole iz svake od 12 statističkih regija Republike Slovenije bile su uključene u uzorak. S obzirom na spol, uzorak je relativno uravnotežen: 54% ispitanika bile su djevojke, a 46% bili su dječaci.

Podatci o završnim ocjenama učenika na kraju 7., 8. i 9. razreda iz Slovenskog jezika i Matematike i učenički rezultati na državnoj maturi iz Matematike i Slovenskog jezika dobiveni su od Nacionalnog ispitnog centra Republike Slovenije. Podatci o načinu grupiranja učenika prema sposobnostima u pojedinim školama i pokazatelji društveno-kulturnog okruženja dobiveni su pomoću upitnika za učenike. Indikator društveno-kulturnog okruženja učenika uključuje podatke o stupnju obrazovanja roditelja, materijalnim uvjetima kod kuće, tj. podatke o tome ima li učenik svoj stol kod kuće, svoju sobu, mirno mjesto za učenje, računalo koje koristi za školu, pristup Internetu, knjige i časopise koji mu/joj pomažu u rješavanju zadataka vezanih uz školu, rječnike, književna djela, umjetnička djela (npr. slike), DVD ili video playere, digitalne kamere ili video kamere, vlastiti MP3 player; kao i podatke o tome pohađa li izvanškolske aktivnosti: tečajeve stranih jezika, tečajeve jezika u inozemstvu, glazbenu školu, školu plesa, računalne tečajeve, likovne aktivnosti, šahovski klub, izviđače i sl. (Žakelj, Ivanuš Grmek, 2010).

Rezultati su prikazani u tablicama i grafikonima. Primijenili smo osnovne postupke deskriptivne statistike, Pearsonov koeficijent korelacije i klasičnu teoriju pouzdanosti (Guttman-Cronbachov α koeficijent).

Rezultati i interpretacija

Organizacija grupiranja prema sposobnostima u školama

Učenicima je postavljeno pitanje jesu li bili grupirani prema sposobnostima iz Matematike i Slovenskog jezika i jesu li im aktivnosti bile u skladu s odabranom razinom.

Svaka škola samostalno odlučuje kako će nastava biti organizirana. Ukoliko neka škola donese odluku da će učenici biti grupirani prema sposobnostima, u Matematici i Slovenskom jeziku učenici se dijele u dvije ili tri razine težine, ovisno o njihovim ocjenama i drugim pokazateljima (npr., željama roditelja ili željama samih učenika). Najuspješniji učenici raspoređeni su na 3. razinu, a manje uspješni na 2. ili 1. razinu. Ako škola ne provodi grupiranje prema sposobnostima, nastava se odvija u jednoj heterogenoj skupini učenika bez obzira na njihove rezultate u navedenim predmetima. Kao što se može vidjeti iz tablice 1., nastava Slovenskog jezika u istoj školi može se organizirati na drugačiji način od nastave Matematike.

Tablica 1.

Rezultati pokazuju da većina škola koje su sudjelovale u istraživanju provodi grupiranje prema sposobnostima, tj. u diferencirano učenje bilo je uključeno 76,66% učenika iz Slovenskog jezika i 81,58% učenika iz Matematike. Grupiranje prema sposobnostima u tri razine težine najrasprostranjeniji je oblik diferencijacije budući da je u njemu sudjelovalo 73,96% učenika iz Slovenskog jezika i 78,25% iz Matematike. Grupiranje prema sposobnostima u dvije razine težine bilo je rjeđe: u njemu je sudjelovalo 2,70% učenika iz Slovenskog jezika i 3,33% učenika iz Matematike. Rezultati također pokazuju da je grupiranje prema sposobnostima u školama koje su sudjelovale u istraživanju bilo češće iz Matematike.

Tablica 2.

Struktura učenika prema razinama bila je sljedeća:
– na nastavi Slovenskog jezika 13,01% učenika uključeno je u 1. razinu, 50,82% u 2. razinu i 36,16% u 3. razinu;
– na nastavi Matematike 18,15% učenika uključeno je u 1. razinu, 48,86% u 2. razinu i 32,99% ispitanika u najtežu 3. razinu.

Uloga društveno-kulturnog okruženja u rangiranju učenika u skupine

Pokazatelj društveno-kulturnog okruženja u našem istraživanju obuhvaća stupanj obrazovanja roditelja, njihovu materijalnu situaciju kod kuće, kao i učenikovo aktivno sudjelovanje u izvanškolskim aktivnostima (Žakelj, Ivanuš Grmek, 2011, str. 13).

Slika 1. prikazuje raspodjelu učenika prema razinama na nastavi Matematike i Slovenskog jezika s obzirom na pokazatelje društveno-kulturnog okruženja.

Slika 1.

Učenici s višim pokazateljem društveno-kulturnog okruženja na višoj su razini kako u Slovenskom jeziku tako i u Matematici.

Tablica 3.

Korelacija između učeničkih razina u Matematici i Slovenskom jeziku i odabranih varijabli prikazana je u tablici i pokazuje sljedeće:

– Statistička korelacija između učenikove razine u Slovenskom jeziku i Matematici, s jedne strane, i naobrazbe roditelja, broja knjiga, rječnika i književnih djela u obitelji, s druge strane, niska je jer su koeficijenti korelacije u rasponu 0,20-0,29.
– Razina učenika u Slovenskom jeziku i Matematici i prosječna ocjena učenika u 7., 8., i 9. razredu pokazuju srednju pozitivnu korelaciju koja mjestimice graniči s visokom pozitivnom statističkom korelacijom. Koeficijenti korelacije su u rasponu 0,54-0,69.
– Razina učenika u Slovenskom jeziku i Matematici pokazuje srednju pozitivnu statističku korelaciju s upisom u željeno srednjoškolsko usmjerenje. Koeficijent korelacije za Slovenski jezik i Matematiku je 0,56.

Rezultati evaluacijskog istraživanja (Žagar i sur., 2003) pokazali su da je društveno porijeklo imalo najveći utjecaj na uspjeh učenika. Pokazalo se čak i važnijim od sposobnosti koje su pokazali na testovima prilikom upisa u školu. Međutim, društveno porijeklo nije imalo utjecaj na uspjeh učenika u heterogenim skupinama. Drugi su autori (npr. Boaler, 1997; Aylett, 2000) otkrili da društveno porijeklo učenika (niži društveni status) utječe na rangiranje učenika u skupine određene (niže) razine.

Možemo zaključiti da čimbenici društveno-kulturnog okruženja igraju važnu ulogu u razvoju i školskom uspjehu svakog pojedinca. Obrazovanje, kreativnost i društveni kontekst isprepliću se i tvore široku lepezu čimbenika koji utječu na uspješnost pojedinca u školi i njegov profesionalni status. U prosjeku, djeca iz povlaštenog društveno-kulturnog okruženja postižu bolje rezultate u školi i dobivaju bolje obrazovanje. Oni također postižu višu razinu formalnog obrazovanja od djece iz ugroženih društveno-kulturnih sredina (Pergar-Kuščer, 2003). Autorica drži da različiti podatci pokazuju značajne razlike između djece različitog društvenog podrijetla s obzirom na njihov uspjeh u školi i kasnije obrazovanje i osposobljavanje (ibid).

Uspjeh učenika s obzirom na razinu skupine

Škole također prate učinkovitost i kvalitetu obrazovnog sustava pomoću državne mature, odnosno oblika vanjskog vrednovanja znanja. Njegova je glavna značajka da svi učenici moraju riješiti iste ili slične zadatke, da se testiranje provodi na isti način i da su testovi, barem u određenoj mjeri, metrički verificirani (Bucik, 2001). Određenje i ciljevi vanjskog vrednovanja znanja koje je Republika Slovenija uvela 1990./91. za učenike završnih razreda osnovne škole promijenili su se nekoliko puta od tada. Trenutačno, državna matura (u nastavku DM) se i dalje provodi, međutim sada ima samo informativnu i formativnu, a ne selektivnu funkciju. To znači da nije samo orijentirana na rezultate već i na opseg i kvalitetu znanja učenika, kao i na obrazovni proces i pristupe učenju i poučavanju (Žakelj, Ivanuš Grmek, 2010).

Tablica 4.

Najbolje rezultate iz Slovenskog jezika na DM postigli su učenici grupirani u 3. razinu a najniže učenici iz 1. razine. Prosječni rezultati iz Slovenskog na DM učenika

iz heterogene skupine bili su niži od prosječnih rezultata učenika 3. razine ali viši od rezultata učenika 2. razine. Prosječne konačne ocjene iz Slovenskog jezika učenika 9. razreda iz heterogene skupine bile su nešto niže od prosječnih ocjena učenika završnih razreda iz 3. razine, a više od prosječnih ocjena učenika 2. razine (tablica 4.).

U Slovenskom jeziku razlike u prosječnim rezultatima na DM između različitih razina bile su nešto manje nego razlike u Matematici. Najbolje su rezultate u 9. razredu iz Matematike ostvarili učenici 3. razine a najniže oni iz 1. razine. Prosječni rezultati na DM iz Matematike za učenike iz heterogenih skupina bili su niži od prosječnih rezultata učenika iz 3. razine i viši od rezultata učenika 2. razine. Prosječne završne ocjene učenika 9. razreda heterogenih skupina iz Matematike bile su nešto niže od prosječnih završnih ocjena učenika 3. razine i više od prosječnih ocjena učenika 2. razine (tablica 4.).

Raspon školskog uspjeha učenika prema razinama

Prema disperziji rezultata prikazanih na slici 2. moglo bi se zaključiti da grupiranje prema sposobnostima kako u Slovenskom jeziku tako i u Matematici više pogoduje boljim učenicima, jer su prosječni rezultati najviših razina težine na DM viši od rezultata učenika iz heterogenih skupina, odnosno, najbolji učenici iz najviše razine nadmašili su najbolje učenike iz heterogenih skupina. Situacija je nešto manje jasna u slučaju učenika nižih razina (slika 2.). Iako su neki učenici 1. razine postigli vrlo dobar uspjeh (u usporedbi s učenicima iz 3. razine), temeljem pojedinačnih rezultata ne možemo generalizirati. Mogli bismo zaključiti da su ti učenici imali koristi od grupiranja prema sposobnostima i da im je pomoglo da razviju svoje sposobnosti, međutim, također je moguće da su već od početka trebali biti u skupini više razine. Stoga je važno biti oprezan prilikom bilo kakve generalizacije.

Slika 2.

Linchevski (1995), autor četiri longitudinalne studije o rezultatima iz Matematike i grupiranju učenika prema sposobnosti u Izraelu, došao je do sličnih zaključaka. U jednoj od studija, utvrdio je da grupiranje učenika u različite skupine temeljene na učeničkim sposobnostima u deset od dvanaest škola nije imalo utjecaja na njihove rezultate u Matematici. U drugom istraživanju, on je usporedio rezultate i ocjene učenika raspoređenih u skupine temeljene na učeničkim sposobnostima s rezultatima učenika iz heterogenih skupina. Njegovo je istraživanje pokazalo da su rezultati učenika nižih sposobnosti značajno lošiji u skupinama učenika s istim sposobnostima nego u heterogenim skupinama. Linchevski (ibid) smatra da učenici nižih sposobnosti u heterogenim razredima postižu bolje rezultate na testovima, jer njihovi nastavnici, kao i oni sami imaju veća očekivanja.

Jedna od rezonantnijih meta-analitičkih studija bila je ona Slavina iz 1987. koja je pokazala da su podjele prema razinama učinkovite u pojedinim predmetima samo ako su nastavne metode i nastavni materijali prilagođeni učeničkim potrebama. Podjela učenika prema razinama bez adekvatne prilagodbe neučinkovita je bez obzira na nastavni predmet (Slavin, 1990).

Možemo zaključiti da ne treba očekivati pozitivne učinke grupiranja učenika prema sposobnostima na učeničke rezultate ako nastavnici ne koriste primjerene nastavne materijale. Osim toga, potrebno je naglasiti da se brojne kritike na grupiranje prema sposobnostima u višim razredima osnovne škole uglavnom odnose na djelotvornost '*streaming*' modela (podijela učenika prema sposobnostima), a manje na '*setting*' model.

Osim ovih rezultata, važno je spomenuti i motivacijski i emocionalno-osobni aspekt učenja, jer je jedno istraživanje (Štemberger, Ivanuš Grmek, Čagran, 2009; Čagran, Ivanuš Grmek, Štemberger, 2009) pokazalo povezanost vanjske diferencijacije s motivacijom i emocionalno-osobnim vidom obrazovanja.

Rezultati ovog istraživanja (posebice Štemberger, Ivanuš Grmek, Čagran, 2009) upozoravaju da 1. razina obuhvaća učenike s nižom motivacijom za učenje, a da njihova motivacija najviše ovisi o vanjskim poticajima. Osim toga, moramo imati na umu da se radni uvjeti za nastavnike znatno razlikuju od jedne do druge razine s obzirom na motivaciju učenika. Razlike među učenicima moraju se uzeti u obzir u pripremi, kao i tijekom provedbe nastave. Kod učenika na 1. razini učitelji moraju prvenstveno razvijati interes za školu i školski rad, dok kod učenika na 3. razini moraju razvijati, poticati i zadržati postojeću motivaciju. Oni moraju osigurati da učenici doživljavaju rad kao izazov, čime jačaju svoju unutarnju motivaciju.

Rezultati evaluacijskog istraživanja (Žagar i sur., 2003) također su pokazali veću motivaciju kod učenika na najvišoj razini težine, dok se na srednjoj i donjoj razini skupine nisu razlikovale. Motivacija za učenje značajno se smanjuje u posljednje dvije godine osnovne škole (ibid).

Istraživanje (Čagran, Ivanuš Grmek, Štemberger, 2009) također upozorava da se učenici koji pohađaju nastavu na različitim razinama težine statistički značajno razlikuju u sljedećim dimenzijama emocionalno-osobnog aspekta učenja: tolerancija prema neuspjehu, osjećaj uspjeha, otpornost prema stresu i emocionalno-osobni aspekt u cijelosti.

Zaključci

Rezultati našeg istraživanja uspjeha učenika s obzirom na grupiranje prema sposobnostima sugeriraju da je ovaj princip grupiranja prikladniji za bolje učenike nego za one manje sposobne. Srednja do visoka pozitivna statistička korelacija između razine učenika u Slovenskom jeziku i Matematici, obrazovanja oca i majke i prosječne ocjene iz Slovenskog jezika i Matematike u 7., 8. i 9. razredu dodatno potvrđuje našu hipotezu. U 1. su razini obično učenici čiji je uspjeh slabiji, a u isto vrijeme dolaze iz obitelji nižeg društveno-kulturnog statusa. Rezultati ostalih studija (Štemberger, Ivanuš Grmek, Čagran, 2009) također su pokazali da učenici 1. razine imaju nižu motivaciju za učenje, a njihova motivacija uglavnom ovisi o poticajima izvana. Linchevski (1995) smatra da manje sposobni učenici u heterogenim razredima postižu bolje rezultate na testovima, jer i oni sami ali i njihovi učitelji imaju veća očekivanja. Rezultati našega, ali i drugih istraživanja (Slavin, 1987; Linchevski, 1995) pokazuju da ne postoje dosljedni,

pouzdani rezultati o pozitivnim ili negativnim učincima podijele učenika u skupine prema sposobnostima. Istodobno, neki se autori (Slavin, 1987; Linchevski, 1995) slažu da je grupiranje učenika prema sposobnostima učinkovitije ako učitelji prilagode svoje nastavne metode i svoje nastavne materijale učenicima na pojedinim razinama.

Zaključno, možemo reći da vrsta pristupa poučavanju i učenju u školi i društveno-kulturno okruženje učenika samo po sebi ne može najtočnije odrediti njihov uspjeh u školi. Ako se znanje promatra u širem kontekstu, ne možemo izbjeći tumačenje prema kojemu na znanje utječu ne samo kvalitete škole i nastave, već i neki drugi čimbenici - od kvalitete života učenika, ohrabrenja ili obeshrabrenja koje im pruža sredina (Malačič i sur., 2005; Pergar-Kuščer, 2003; Serpell, 1993; Toličič, Zorman, 1977; Žakelj, Ivanuš Grmek, 2011; Žakelj i sur., 2009) do individualnih intelektualnih sposobnosti (Marjanović Umek i sur., 2006). Obrazovanje, društveni kontekst i pitanje kreativnosti isprepliću se i tvore široku lepezu čimbenika koji utječu na školski uspjeh pojedinaca, a kasnije i njihov profesionalni status.