The goal of this research was to explore the potential socialization drop that might occur during students’ transition from class teaching (i.e. having mainly one teacher) to subject teaching (i.e. having many teachers). We had two competing assumptions: 1) that the socialization drop will affect both typically developed (TD) and so called special educational needs (SEN) students, and 2) that the drop will affect SEN students more. Using a transversal approach and sociometric method, we tested these assumptions on a sample of 685 (55 SEN) elementary school children from the Republic of Srpska, grades four through nine. The results clearly supported the second assumption. While sociometric social preference for TD children did not change through the grades, SEN children social preference dropped significantly in the transitional sixth grade, never again to recover to the fourth grade level, when there was no difference between SEN and TD children. This effect was only slightly affected by the peer discipline issues nominations. Thus, when trying to design potential socialization support and intervention programs in inclusion, we should be aware of the expected transitional socialization drop.

Key words: inclusion, socialization, sociometry, elementary school

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INTRODUCTION

Inclusion of children with so called ‘special educational needs’ (SEN) into general classrooms has become a global education approach. One of its biggest expected benefits is the socialization aspect, one facet of which we aim to explore in this article.

From the beginning, inclusion has been promoting an idea of SEN children's membership in a general classroom (e.g. Neary & Halvosen, 1995). Zigmond & Baker (1996) wrote about the need for integrating SEN children into the “social fabric of their classes” (p. 32). This idea of the ‘inclusive classroom togetherness’ (e.g. Brice & Miller, 2000) has not changed to-date and it has been extended to other levels of education. For example, Hanline and Correa-Torres (2012), when commenting on the efficacy of early preschool inclusion, suggest that the socialization and communication opportunities are of critical importance “as the benefits of inclusion occur primarily if opportunities for social interactions are available” (p. 110).

However, reviews (Avramidis, 2009; Lindsay, 2007; Salend & Duhaney, 1999) suggest that socialization of SEN children in inclusion generally leads to mixed outcomes, i.e. ranging from high social rejection/low acceptance to forming and maintaining positive social relationships. The studies that find negative social outcomes usually report SEN students having a significantly lower number of friends, fewer interactions with peers, and being less accepted (e.g. Koster, Pijl, Nakken, & Van Houten, 2010). Additionally, the inclusion setting does not seem to provide any substantial self-concept benefits over special education placement, and while there are some indicators of positive social and developmental effects, no conclusion could be drawn at this point (for more details see Lindsay, 2007).

It has been pointed out that interactions of SEN students with their typically developing (TD) peers “are often assistive in nature, and tend to decline as the school year progresses” (Salend & Duhaney, 1999, p. 118) and that, on average, SEN students have fewer stable friendships than their peers (Frostad, Mjaavatn, & Pijl, 2011). Also, social integration and acceptance tend to be better in preschool inclusion (Hanline & Correa-Torres, 2012; Odom, 2000), and scarce longitudinal evidence suggests that elementary
school inclusion socialization tends to decline in upper compared to lower grades (Hall & McGregor, 2000). Specifically, Hall and McGregor (2000) pointed out that “although [SEN children] were in the classrooms, they might not have been perceived as part of the class” (p. 125) by their TD peers in the upper grades.

Regarding the desirable social outcomes of inclusion, it is important to emphasize that they should not only be limited to better acceptance/lesser rejection of SEN students, as some benefits for TD students, such as the increased tolerance, should also be expected and encouraged (Salend & Duhaney, 1999). Unfortunately, due to usually lower social competence skills of SEN children (Avramidis, 2009; Terpstra & Tamura, 2008), and also because of the tendency of TD students to interact with classroom peers similar to themselves (which increases the probability of excluding SEN peers), without active facilitation, meaningful interactions are unlikely to occur (Terpstra & Tamura, 2008). TD children may perceive SEN children as playing mates, but communication and behavioral issues and limitations make it difficult to maintain friendships (Lee, Yoo, & Bak, 2003). It should also be noted that there is a growing body of evidence suggesting that forced education and age segregated classrooms that usually limit the free play opportunities are highly unoptimal social environments that „add to the forces that work against the development of cooperation, compassion, and nurturance at school“ (Gray, 2013, p. 76). The key point here is that the extensive and appropriate support is highly needed in order to have any real chance for obtaining the desirable social outcomes in inclusion, i.e. that is not something that ‘naturally happens’. Thus, both SEN and TD children most likely require ‘training’ and continued support if longer lasting mutual socialization is to occur. „Clearly, friendships cannot be engineered but helping children find creative ways to form them should be at the top of every school’s agenda“ (Avramidis, 2009, p. 15). There are many guidelines and proposed techniques for social skills training, support and facilitation in inclusion (e.g. Hanline & Correa-Torres, 2012; Odom, 2000; Salend & Duhaney, 1999; Terpstra & Tamura, 2008). While their details are out of the scope of this article, it should be pointed out that many of the generic social skills training protocols do not seem to be effective and appropriate for all SEN students (see e.g. Frederickson & Furnham, 2004). It stands to reason that designing and implementing
appropriate protocols requires highly trained staff, which adds to the costs of already high financial requirements for the implementation of inclusion (Kavale & Mostert; 2003; UNICEF, 2012).

The research context and problem: A case of educational system of the Republic of Srpska

The abovementioned high resource requirements of inclusion are especially problematic for the educational systems of financially less developed countries (Subotić, 2014, in press). We can use an example of the Republic of Srpska, an entity of Bosnia and Herzegovina. General teachers in the Republic of Srpska received practically no formal training for working with SEN children. The same is true for the expert school associates (pedagogists and psychologists). Furthermore, potentially beneficial co-teaching approach (Scruggs, Mastropieri, & McDuffie, 2007) is not implemented, and no systematic student socialization-supporting programs are in place. Given these circumstances, it does not surprise that a recent evaluation of the inclusion reform (Subotić, 2014) revealed that SEN students were less socially accepted and more rejected than their TD peers, with the degree of rejection being stronger than the degree of lack of acceptance (a majority of these statistical effects were of a moderate intensity). SEN students also showed significantly poorer school achievement and more discipline problems than TD students. Finally, the SEN students without the official categorizations showed the worst results on several socialization and discipline variables, i.e., they had even worse scores than the officially categorized students.

It has been suggested (Subotić, in press) that the problem of SEN children’s education logically cannot be solved in the existing forced education paradigm (Gray, 2013) and that the core restructuring of the educational philosophy is needed before we can obtain a satisfactory long-term solution. In the meanwhile, it was suggested (Subotić, in press) that it is probably best to focus research efforts on identifying and answering grounded, practical questions, to at least try and ‘minimize the harm’. In this research, we decided to follow that ‘grounded problem oriented’ line of reasoning. Specifically, a mentioned evaluation of inclusion reform in the Republic of Srpska (Subotić, 2014), while revealing the degree to
which SEN children were rejected/not accepted by their TD peers, did not take into account possible effect changes as a function of grades/years of education. Several expert school associates informally commented on this fact, stating anecdotal evidence that there seems to be an apparent drop in socialization affecting students in a turbulent and demanding period of transition between the fifth and the sixth grade. In the Republic of Srpska’s school system, from grades one through five, students are taught in the so-called class teaching, where one teacher teaches most of the subjects in the same classroom. From grade six and upwards, students undergo the so-called subject teaching, where each subject is taught by a separate specialized teacher, with classrooms being subject specific. All of the commenting expert associates agreed that this transition is distressful for all the students, which is in line with the research findings suggesting that various school related transitional periods “have the potential to create anxiety, tiredness, discomfort and bewilderment” (Travers et al, 2010, p. 49). The disagreement arose regarding the degree to which this potentially affects socialization in particular and whether there are differences between SEN and TD students. Several of the expert associates claimed that both SEN and TD children are affected by this transition roughly equally, while others were of an opinion that SEN children and their social outcomes are affected more (or that they are the only ones affected), with the remark that the latter might be partially due to an increase in discipline issues (see Mand, 2007; Travers et al, 2010).

The general distressfulness of the class to subject teaching transition is not in question here. However, whether or not it measurably affects socialization in inclusion and whether or not SEN and TD students are affected equally is unknown. The literature to date offers virtually no information in this regard. We know that some socialization decline as a function of time is to be expected (Hall & McGregor, 2000; Hanline & Correa-Torres, 2012; Odom, 2000), but we know practically nothing about its intensity or pattern in this particular context (i.e. will it be linear, or the drop at the transition will be stronger). This is unfortunate, as it might have potentially strong implications regarding the possible implementation of socialization-promoting strategies and interventions.
The goal of the research

The specific goal of this research is to determine if the proposed decline in socialization at the transition from class to subject teaching exists and if the decline pattern is the same for SEN and TD students. Additionally, we are also interested in testing if the pattern is affected by the discipline issues and whether it changes by the end of elementary school.

The research hypotheses

Given the scarcity of the data on this particular issue, the general research expectations are grounded, i.e. based on the practical observations. Specifically, we expect to detect a class to subject teaching socialization decline. From there on, two competing assumptions exist:

The socialization decline will affect both SEN and TD students the same.

1. TD students will be affected less or not at all, while SEN students will suffer a sharp decline between the fifth and the sixth grade.

In either case, we have no specific assumption regarding the potential trend afterwards, i.e. up to the ninth grade. It is plausible that the decline could continue, or that some recovery could be detected in both or in either group of students.

Furthermore, we would expect that socialization change as a function of grades/years of school is at least slightly affected by the behavioral/discipline issues.

METHOD

Sample

The sample comprised 685 elementary school students from grades four through nine, as shown in Table 1. Grades lower than fourth were not included due to practical and administrative reasons.

In SEN group 28 students had official categorization and 27 had a recommendation for categorization, but not the actual/formal categorization.
While gender was balanced for the whole sample (347 males, 338 females), it was not balanced for the SEN group, where only 15 out of 55 students were females. However, this does not represent any deliberate sampling bias, but is rather an actuality of the current SEN students’ gender distributions in the school system of the Republic of Srpska. Also, the uneven number of classes and students in each grade represents the actual number of available classes with SEN students in the included schools. The schools themselves, however, were targeted deliberately, from various regions of the Republic of Srpska. The criteria for research inclusion assumed the existence of the complete expert school associates team (pedagogist and psychologist), at least a multi-year school-level inclusion experience, and a willingness to participate in the research – which several schools did not want for various reasons. Thus, the sample is not random, but it arguably does represent a comprehensive selection of schools with higher than average experience with the inclusion practices in the Republic of Srpska. Further details about schools are omitted as a part of research permission clause.

<table>
<thead>
<tr>
<th>Student SEN status</th>
<th>Grades</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4th</td>
<td>5th</td>
</tr>
<tr>
<td>Typically developing</td>
<td>110</td>
<td>145</td>
</tr>
<tr>
<td>Have special educational needs</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>156</td>
</tr>
<tr>
<td>Number of Classes</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

Note that we relied on the same dataset used in the recent evaluation of the inclusion in the Republic of Srpska (Subotić, 2014), as this article is inspired by that evaluation’s lack of addressing a specific research question, which is being answered here.

**Variables and procedure**

Data gathering was conducted in 2011/2012 and 2012/2013 school years during regular classes, via paper-pan questionnaires. Students were asked to provide sociometric nominations for socialization (i.e. “Which of your classroom peers would you like/dislike to hang out with the most?”) and discipline issues (i.e. “Which of your classroom peers make the most discipline issues in the classroom?”). For each of these questions, up to three
nominations were allowed, but students were not required to give all three. The first nomination was valued as three points, second as two, and third as one. We combined positive and negative nominations for socialization into a single variable, called ‘social preference’ (SP, see Maassen, Steenbeek, & van Geert, 2004), which is calculated by subtracting negative from positive nominations. Both SP and discipline issues were standardized at the individual classroom level. Note that because the students were not required to give the maximal number of nominations on all questions, and answers were standardized only on classroom level, if there in fact was a manifest socialization fluctuation (e.g. decrease) between grades, then grade-level differences in total SP scores would manifest.

**Statistical analyses and limitations**

Our main interest was to determine the differences in sociometric SP scores, as a function of SEN status (i.e. having/not having SEN) and school grades (i.e. years of education), for which analysis of variance (ANOVA) was an appropriate statistical method. Then we wanted to see how the effects change when peer evaluated discipline problems were taken into consideration, for which purpose we added this variable as a covariate in the analysis.

We were interested in testing a few additional problem questions, however, there were some statistical and methodological limitations related to these variables. Specifically, the frequency of female SEN students was low, i.e. there was only one female SEN student per grade for 6th and 7th grade/year and only three per 4th, 5th, and 8th. This prevented us from testing possible gender differences.

Furthermore, we were also interested in exploring the status of children that did not have official categorization or recommendation, but for whatever reasons showed extremely poor school achievement (see Subotić, 2014). However, treating those children as a unique group or adding them to the SEN group, in this case, led to severe violations of the distribution and variance assumptions. While this could have been solved with certain non-parametric approaches (but it could not be solved via variable transformations), none of the applicable alternative analyses provided a
possibility of testing the interaction effect, which was crucial here, thus we were unable to address this question any further in this paper, and such low achieving (but not categorized or categorization-recommended) children were tentatively included in the TD group. We justify this solution with the fact that these students appeared to be somewhere between TD children and children from the other two SEN types/groups (categorization and recommendation for categorization) in the measured variables, but there were no statistical problems when they were treated as TD children (and removing them from the analyses did not offer any additional benefits over grouping them with TD children). Note, however, that these students could legitimately be viewed as SEN children (Subotić, 2014) and their statistical treatment here is strictly pragmatic.

Regarding the SEN group itself, we opted to group together both the children with the official categorizations and those with only the recommendations for categorization to achieve a higher statistical power, after we preliminary established that these groups of students did not differ significantly on the variables of interest.

RESULTS

ANOV A effect sizes were judged by the eta-squared ($\eta^2$) statistic, which is calculated as: $\eta^2 = \frac{SS_{factor}}{SS_{total}}$, where $SS_{factor}$ is the variance attributable to the individual factor and $SS_{total}$ is the total variance (Pierce, Block, & Aguinis, 2004). Cohen (1988) has suggested $\eta^2$ values of 0.01, 0.09, and 0.25 as cutoffs for small, medium, and large effect sizes respectively.

Differences in sociometric social preference

Sociometric SP scores were subjected to a two-way ANOVA having two levels of student SEN status (has SEN and doesn’t have SEN, i.e. TD, with the former including students with either categorizations or recommendations for categorizations) and six grades (years of education) levels (grades four through nine) as factors. The main effect of grade factor did not reach statistical significance, but it did pass a cutoff value for a small effect size: $F(5, 673)=2.01, p=0.08, \eta^2=0.013$. The main effect of special needs status
was statistically significant and of medium effect size, showing a trend of larger SP scores in the TD group: F(1, 673)=80.4, p<0.001, η²=0.10. There was also a statistically significant two-way interaction of SEN status with grades and it was of a smaller effect size: F(5, 673)=3.14, p=0.008, η²=0.02. The interaction is shown in Figure 1.

![Figure 1](image)

Figure 1 – The change of sociometric social preference as a function of the interaction of SEN status (i.e. SEN vs TD) with grades/years of education

The SP for TD students remained roughly the same through the different grades, with post hoc test confirming that there, in fact, were no significant differences. SEN students’ SP showed a general, but an uneven decline trend. Specifically, only in the 4th grade SEN and TD social preferences did not differ significantly (p=0.34), while the differences in the remaining grades were significant (i.e. for grades five through nine p values were 0.006, <0.001, 0.007, <0.001, and <0.001 respectively). However, the difference was the largest in the 6th grade after which it decreased in the 7th grade and increased again through 8th and 9th grade. It should be noted that post hoc tests suggested that, in SEN group, there were no significantly different pairs of grade differences in grades six through nine, with statistically significant differences being: 4th grade > 6th grade (p=0.002), 4th grade > 8th grade (p=0.01), 4th grade > 9th grade (p=0.02), and 5th grade > 6th grade (p=0.01). In other words, even though the decline in SP for SEN students was the largest in the 6th grade and there was a slight trend of ‘recovery’ after that, the trend itself is of a too small magnitude to be clearly
distinguished from the values measured in the grades five and six, thus it is unclear how much of the ‘recovery’ actually happens. It is clear, though, that after a big drop in the 6th grade, the social preference never goes back to the 4th grade levels.

**Possible impact of the students’ discipline issues**

Additionally, we tested the assumption that the possible change in peer perception of classroom discipline issues is related to the drop in SP. Thus, we included peer discipline issues nominations as a covariate, with the rest of the variables being the same as in the first analysis. The discipline issues nominations proved to be in a statistically significant inverse relationship of a moderate intensity with SP: $F(1, 672)=150, p<0.001, \eta^2=0.17$. The inclusion of the covariate did reduce the effect size of the already established main effect of SEN status from medium ($\eta^2=0.10$) to small effect size: $F(1, 672)=45.2, p<0.001, \eta^2=0.05$ and it also slightly reduced the effect size ($\eta^2=0.02$) of the interaction of SEN with grades (but it still remained in the same, i.e. small effect size range): $F(5, 672)=2.47, p=0.03, \eta^2=0.014$. Thus, at least some of the changes in SP attributable to the SEN status and SEN and grade interaction is also influenced by the perceived discipline issues, but this is more pronounced for the SEN status effect.

**DISCUSSION**

Our results confirmed that there, in fact, is a socialization decline that happens between the fifth and the sixth grade, but it affects SEN students only. Sociometric SP for TD children remains roughly a straight line through the grades, while SEN children SP dropped significantly at the sixth grade, and while there was a non-linear fluctuation from there, the SP never again approached the fourth grade level, when there was no difference between SEN and TD children. This means that the ratio of positive to negative nominations for TD children does not really change on a grade to grade basis, while SEN children receive more negative/less positive nominations on average in comparison to TD children (see also Subotić, 2014) in every grade except fourth, but the gap additionally
increases (and never recovers) when the class to subject teaching transition happens. Also, this transitional decline trend is slightly affected by the peer-perceived discipline problems, but it could not be fully explained by that. In fact, a general, non-grade dependant difference in SP between SEN and TD students is impacted by discipline issues more. Note that this might also be due to a halo effect (see Subotić, 2014).

Why precisely does this grade-transition drop occurs is unknown at this point, and can only be speculated. One possibility is that although in the Republic of Srpska there are no formal programs aimed at facilitating the SEN to TD peer socialization, having almost always present single teacher allows for achieving more familiarized classroom climate, especially if that teacher is sensitive and skilled in early childhood peer socialization dynamics. A teacher is arguably being perceived as a surrogate parent, with enough ‘authority’ to help the children to be ‘nice to each other’. When that single teacher is replaced in the sixth grade with many (i.e. 13) teachers, who only spend a fraction of time with students (i.e. up to four school classes per week), that dynamic is broken, and never again reestablished, as there is no new constantly present adult figure to continue the role. Hypothetically, this could be mitigated by implementing a co-teaching model (Scruggs et al., 2007), with one non-rotating special co-educator who would perhaps remain with the students throughout most of the week, and serve as a replacement figure to the no longer present class teacher. From the research standpoint, the next step should obviously be to survey the teachers, and compare the experiences and spontaneous socialization-promoting activities of class and subject teachers.

Another possibility is that better SP scores of SEN children in lower grades are somewhat artificial, or even ‘forced’, and without someone (i.e. class teacher) to constantly initiate and facilitate the interactions, they tend to ‘die off’, especially since with the beginning of subject teaching the amount of school work drastically increases. On one hand, this means that TD students have less room to maintain ‘less important’ social interactions, especially in the transition-adjustment period. On the other hand, and especially without a proper support, this puts even more strain on SEN students, possibly causing them to act out more often. Their acting out then reinforces the TD students’ view of social interactions with SEN peers as being ‘a distraction’. This assumption is consistent with our finding that the
obtained effects are at least slightly influenced by peer-perceived discipline issues and in line with the general observations that behavioral problems are the major school social relations obstacle, both in special and integrated classrooms (Mand, 2007; Travers et al, 2010). Alternatively, it might be that in the absence of any systematic socialization support programs, class teachers are simply unable to lay down a proper socialization foundation for students in inclusion on their own, and as soon as they are not with the students anymore, previous (weak) socialization structure collapses.

Finally, it should also be kept in mind that transition to subject teaching also coincides with a time in the young persons’ lives when a lot of developmental and transitional changes start to happen (see e.g. Bergese, 2008; Goswami, 2011). It is plausible that the developmental gap in social and communication domains between TD and SEN children (Lee et al., 2003; Terpstra & Tamura, 2008) increases in this period, with gender possibly being a moderator, due to the differences in the expected developmental curves between boys and girls (Bergese, 2008; Goswami, 2011).

None of the previous tentative explanations might act in an isolated fashion, which makes it even harder to design additional studies. But more studies are obviously necessary before we can act in a sufficiently informed manner. For now, our results revealed that in addition to already detected generally lower acceptance/higher rejection of SEN students in the school system of Republic of Srpska (Subotić, 2014), when trying to design potential socialization support and intervention programs, we ought to take into consideration the observed transitional drop as well. Given that this study was transversal (i.e. different students were observed in different grades), it is obvious that longitudinal designs (i.e. following the same students as they transition through the grades) are also needed. While comprehensive longitudinal studies would take a lot of time, expanding on what we observed in this study, simply following the same students through the narrow period of class to subject teaching transition might be sufficient to yield enough data to test the majority of facets of the tentative explanations that we have provided here. Note that there is yet to be determined if the analogous transitional drop occurs in the eight-grade school systems, which exists in many countries of the region (as opposed to the nine-grade system in the Republic of Srpska).
CONCLUSION

This study dealt with an insufficiently studied issue of socialization changes in inclusion from lower to upper elementary school grades (years of education). The results clearly demonstrated that there is a decrease in socialization that affects only SEN students in the period of transition from having mainly one teacher (i.e. class teaching) to having many teachers (i.e. subject teaching). This decrease ought to be taken into consideration when designing and employing potential socialization support strategies in inclusion.

REFERENCES


Sažetak

Cilj rada bilo je ispitivanje mogućeg umanjenja u socijalizaciji na prelazu iz razredne (nastava sa uglavnom jednim učiteljem) u predmetnu nastavu (nastava sa više nastavnika). Postojale su dvije konkurentne hipoteze: 1) umanjenje socijalizacije dogodiće se i učenicima neomećenog razvoja (NR) i djeci sa posebnim obrazovnim potrebama (DPP) i 2) umanjenje će više pogoditi DPP. Na osnovu transverzalnog pristupa i sociometrijskog metoda, testirali smo ovu pretpostavku na uzorku od 685 (55 DPP) učenika iz osnovnih škola u Republici Srpskoj, od četvrtog do devetog razreda. Rezultati su jasno potvrdili drugu pretpostavku. Dijete sociometrijska socijalna preferencija djece NR nije mijenjala kroz razrede, socijalna preferencija DPP se značajno umanjila tokom tranzitnog šestog razreda i nikada više nije dostigla nivo iz četvrtog razreda, kada nije bilo razlike između NR i DPP. Ovaj efekat je bio samo blago zahvaćen vršničkim nominacijama u vezi sa disciplinskim problemima. Stoga, prilikom pokušaja osmišljavanja bilo kakvih intervencionih i programa podrške socijalizaciji u inkluziji, potrebno je u obzir uzeti i ovo tranziciono umanjenje socijalizacije.

Ključne reči: inkluzija, socializacija, sociometrija, osnovna škola