Achievement and Integration of Students with and without Special Educational Needs (SEN) in the Fifth Grade

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**Abstract**

In Styria 77.3% of all students with special needs are educated in integrated classrooms. Currently, it is not known much either about the school performance nor the active class participation of these students. This study examined 230 fifth grade students – 43 with and 187 students without special educational needs (SEN). Moreover, it is important to acknowledge that the available data for this study represents the first wave of larger longitudinal study. The school performance of the students with SEN ranged one standard deviation below the level of the students without SEN. All students felt emotionally well integrated in the school settings, but the differences in the degree of social integration were evident. In fact, the students with SEN mentioned that they got along well with their classmates less frequently than the students without SEN.

**Keywords:** Special Needs, School Performance, Integration

**School performance of students with SEN in integrative and segregated settings**

The development of special needs children in integrative versus special schools is currently a

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**ДОСТИГНУВАНЕ И ИНКЛУЗИЈА НА УЧЕНИЦИТЕ СО И БЕЗ ПОСЕБНИ ОБРАЗОВНИ ПОТРЕБИ (ПОП) ВО ПЕТТО ОДДЕЛЕНИЕ**

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**Резиме**

Во Штазерска 77.3% од сите ученици со посеб- ни потреби се образовани во инклюзивни училиници. Во моментот не е многу познато ниту за успехот на овие ученици во училиштата или нивниот престој во одделенијата. Ова истражување испита 230 поетто-одделенци од кои 43 со и 187 ученици без посебни образовни потреби (ПОП). Многу е важно да се забележи дека достапните податоци од ова истражување претставуваат прв бран на поголем лонгитудинално истражување. Училишнит успех на учениците со ПОП беше рангиран за едно стандардно отстапување подолу од нивото на учениците без ПОП. Сите ученици се почувствувале емотивно добро интегрирани во училиштето, меѓутоа, различната во степенот на социјалната интеграција беше евидентна. Всушност, учениците со ПОП се изјаснија дека поретко се сложуваха добро со нивните соученици, за разлика од учениците без ПОП.

**Клучни зборови:** посебни потреби, училиштен успех, интеграција.

**Училиштен успех на учениците со ПОП во интегративни и изолирани условия**

Развојот на децата со посебни потреби во инклюзивните наспроти посебните училишта,
It is therefore not astonishing that the empirical database for this discussion is inconsistent and difficult to arrange systematically. Nonetheless, three prevailing American meta-analyses found a small or moderate effect concerning the students’ school-related and social achievement in favour of integrative schooling compared to special settings (2, 3, 4). Since 2001, the year in which the USA implemented the Act “No Child Left Behind”, more solid and extensive database has been available. In the Special Education Elementary Longitudinal Study (SEELS) (5) children with SEN between the ages of ten and seventeen (N=5400) were observed over a period of six years. Children tested within SEELS attended either a special needs school (3%), a special education classroom setting in a conventional school (52%), or an integrative schooling in a general education classroom (45%). The majority of the remaining children spent their days in both settings, i.e. segregated and integrative schooling (6). Amongst children with learning disabilities (LD) in integrative settings, 41% were taught by the general education curriculum, whereas this could only be applied to 5% of the children with LD in special settings (5). Similar differences could be found regarding the school performance. In fact, 5th grade students with LD in integrative school settings achieved results comparable to average 4th grade students (150 words per minute), whereas youths taught in special classes accomplished outcomes comparable to typical 2nd grade students (5). Moreover, the slack in the performance between students with and students without special educational needs grew wider in secondary school (7). However, the research in Europe is rare and does not reach the same scope and extend of empirical data compared to major American longitudinal studies. Nonetheless, one of the limited longitudinal studies was carried out in Norway, where ten per cent of the pupils were enrolled as special needs students. The results of this study pointed out that the students in
Social participation of students in integrative and segregated settings

Beside the school performance, social participation is a key area for the educational development of special needs children (11, 16). Major comparative study carried out in Switzerland by Haeburin et al. (11) pointed out that integrated students felt more unpopular and rated themselves as less accepted than the non-integrated students (11). Moreover, Klicpera and Gasteiger Klicpera (16) examined ten integrative forms among 175 students, of which 37 were integrated special needs children. Similarly,
испитување покажуваат негативна слика за социјалната интеграција на учениците со посебни потреби. Споредено со учениците без ПОП, тие имаат помалку пријатели, се чувствуват помалку прифатени, погрешно се третирани и покажуваат чувство на осаменост. Исто така, слични резултати се најдени во Германија (17) и Норвешка (18). Децата со ниски социјални способности и проблеми во однесувањето особено се сметаат за високо ризична група со потенцијал да постанат чудни од инклузивен и специјален аспект (19).

Во спротивно, повеќе позитивни резултати се откриени од страна на Sauer, Ide и Borchert (20) во Германија. Испитани се 516 ученици со ПУ во одделенија, 154 ученици со ПУ од инклузивни одделенија и 245 ученици без ПОП во интегрирани одделенија со помош на ФДИ инструментот развиен од страна на Haeberlin и сор. (11). Во овој случај, не е најдена разлика во социјалното и емотивното однесување помеѓу инклузивните и изолираните ученици. Социјалната интеграција според тоа е дефинирана како „сложување со соучениците и емотивна интеграција како што е пријатното чувство да се биде во училницата“. Понатаму, Rossmann, Gasteiger Klicpera, Gebhardt, Roloff и Weindl (21) испитале 56 ученици со посебни образовни потреби во посебни одделенија и 52 ученици со ПОП во интегрирани одделенија во Австралија. Дури и тука, инклузивните ученици и учениците со посебни потреби не се разликувале во однос на нивната возбуда при тестирањето и социјалната интеграција. Сепак, инклузивните ученици беа оценети како емотивно поинтегрирани во нивните училници за разлика од учениците со посебни потреби.

1. Research questions

77.3% of the students with special needs in Styria are schooled in integrated classrooms (22). In Austria, no studies that display the results on school performance and social integration in a similar educational system are available (23). At the moment, the research of the educational performance and social participation of students with special needs...
германскиот регион се заснова на пробни ис-тражувања или училиништвени инклюзивниот школствво е воведено од неодамна.

- Колку часови се образуваат децата со ПОП во инклюзивна средина?
- На кој начин се разликува успехот на учениците со и без ПОП според интелигенцијата, математиката, читањето и спе-луването? Поголеми разлики во успехот се забележени помеѓу учениците со и без ПОП во Германија и САД (7, 13). Поради овие карактеристики, многу е веројатно дека слични разлики во успехот постојат и во Австрија.
- Колку добро се инклудирани учениците со ПОП во одделенијата, во споредба со учениците без ПОП? Како учениците со или без ПОП ја дефинираат сопствената емотивна интеграција?

Метод

На крајот на академската година, осум инклюзивни одделенија и еден посебен клас од петто одделение беа набљудувани во Грац во однос на нивните академски достигнувања и социјалната интеграција. За истражувањето беа користени стандардизирани прашалници и тестови. Овие тестирања беа спроведени кај сите ученици од инклюзивните одделенија, вклучувајќи ги учениците со и без ПОП. Тестирањето беше спроведено во првите два часа од два последователни школнки денови. Во зависност од одделението, тестот одзеде од 70 до 100 минути дневно. Кога беше потребно, помошници ги помагаа учениците со ПОП според принципот еден на еден за читање и пишување. После тестирањето на групата, беше спроведен десетминутен тест за читање (со декодирање на зборови).

Примерок

Во девет училишта во Грац беа испитувани 187 ученици од петто одделение (123 момчиња и 64 девојчиња). Од нив 95 беа момчиња и 49 девојчиња без ПОП, додека 21 момче и 14 девојчиња имаа ПОП и учее во инклюзивни одделенија. Овие 35 ученици со ПОП претставуваа 39% од вкупниот број на ученици од петто одделение со ПОП во from the German regions is based on a trial studies or classrooms where integrated schooling has been recently introduced.

- How many hours are the children with SEN in integrative settings being taught?
- In which way differs the performance of the students with and without SEN regarding intelligence, mathematics, reading and spelling? Great differences were found between the students with and without SEN in the performances in Germany and USA (7, 13). Due to this circumstance, it is very likely that similar differences exist in the performances of the two groups in Austria.
- How well are the students with SEN socially integrated in their class compared to the students without SEN? How do the students with and without SEN perceive their emotional integration?

Method

At the end of the academic year, eight integrative classes and one special class from 5th grade were surveyed in Graz, in terms of their academic performance and social integration. The survey used standardized questionnaires and tests. These tests were conducted with all students in integrative forms, including students with and without SEN. The testing was conducted in the first two hours of two consecutive school days. Depending on the class, the test took between 70 and 100 minutes. When it was deemed as necessary, assistants supported the SEN students with reading and writing on a one-to-one basis. After the group test followed a ten-minute individual test in reading (word-decoding).

Sample

187 fifth grade children (123 boys, 64 girls) from nine schools in Graz were investigated. Of these, 95 boys and 49 girls were without SEN, while 21 boys and 14 girls had SEN and studied in integrative classrooms. These 35 SEN students represented 39% of the total number of fifth grade students with SEN in the integrative classrooms in Graz (24). The
The following psychometric tests were used: CFT20R, ELFE, SLRT II, HSP, ERT & FDI. The Culture Fair Intelligence Test CFT20-R (25) is a language-free intelligence test that measures the basic fluid intelligence of children between the ages of 8.5 and 19 years. The fluid intelligence can be described as the capacity to think logically and solve problems and it was identified by Cattell as one of the factors of the general intelligence. In this context, the average number of pupils per class was 23 students, in which four to six students with SEN were integrated. Two students with SEN in the integrative classrooms could not communicate due to severe impairment (intellectual disability); these individuals had incomplete results. One girl and seven boys with SEN attended a special education school. This is the only special school in Graz for SEN students (except the one for students with severe disabilities). The majority of students (28) were diagnosed with a learning disability, two students had Asperger Autism and five students were diagnosed with intellectual disabilities.

The migration background in these urban schools was frequent. 49.3% of the children without SEN reported that they were not born in Austria. 60% of the students with SEN in integrative classrooms and 75% of the students with SEN in the special school had immigrant origins. The sample corresponded to the socio-demographic descriptions of students with SEN from other studies (14, 23). The students with SEN had various types of SEN and were taught by different curricula. Two students with autism were educated by the regular school curriculum (RC). The remaining 35 students with Learning Disability were educated by the general special school curriculum (GSS). Five students with intellectual disability were taught by the curriculum for severely and multiply disabled pupils (SMD). All five students with intellectual disability were schooled in integrative settings, whereas all eight students in special schools were diagnosed with LD.

### Instruments

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интеллигенција. На овој начин лицата со слабо познавање на германскиот јазик не се оштетени при испитувањето. Понатаму, овој тест може да се користи и како групен тест (со сигурност претестисани од \( rtt = 0.80 \)).

Тестот за разбирање при читање за учениците од прво до шесто одделение ELFE 1-6 (26) го мереше разбирањето при читање. Со тоа може да бидат утврдени основните стратегии за читање како и способноста да се разберат речените и текстовите. Беше доказана сигурноста во двата поттеста (Cronbach \( \alpha = 0.92; \alpha = 0.97 \)).

Од салзуборшкиот тест за читање и пишување SLRT II (27) беше користена само првата минута од поттестот за читање. Овој тест се состои од тест за индивидуално читање кој особено ја испитува брзната на декодирање на зборовите (\( \alpha = 0.90 \)) и псевдозборовите (\( \alpha = 0.98 \)).

Хамбуршкиот тест за тестирање на пишувањето HSP 1-9 (28) ги испитува стратегиите на пишување на учениците од прво до деветто одделение. Бројот на точни графеми понатаму се користи како необработен резултат (\( \alpha = 0.92 \)).

Тестот по математика беше малку прифатен за ова истражување. Од таа причина, критериумот за психометриски квалитет на примерокот беше прецизiran. Тестот за сметање на Eggenberger ERT 4+ (29) ги мери аритметичките вештини на децата од четврто до петто одделение. Според овој тест, беше изградена скалата на броеви (\( \alpha = 0.87 \)) и основната аритметика (собирање (\( \alpha = 0.77 \)), одземање (\( \alpha = 0.83 \)), множење (\( \alpha = 0.83 \)) и делење (\( \alpha = 0.90 \)).

Скалата на броеви го тестираше разбирањето на линијата на броеви и позицијата на броеви, а основната аритметика ја тестираше способноста за собирање, одземање, множење и делење. Со математическото тестирање може да се добие необработен резултат од 0 до 5 (скала на броеви) и необработен резултат од 0 до 20 (скала на основна аритметика).

Прашалникот FDI 4-6 (11) го мери степенот на социјална интеграција (на пр.: „Jaс сум многу задоволен од моите соученици“) и емоционална интеграција (на пр.: „Jaс сакам да одам на училиште“). Прашалникот беше употребуван во швајцарско истражување на ученици од петто и шесто одделение (\( \alpha = 0.89; \alpha = 0.93 \)). Понатаму, од учителите беше побараано да го проценат бројот на часовите на way, the individuals with low language proficiency are not disadvantaged by the testing tasks. Furthermore, it is applicable as a group test (re-test reliability: \( rtt = 0.80 \)).

The Reading Comprehension Test for First to Sixth Graders ELFE 1-6 (26) measures the reading comprehension. In doing so, can be determined basic reading strategies as well as the ability to understand sentences and texts. The reliability was proven for both sub-tests (Cronbach \( \alpha = 0.92; \alpha = 0.97 \)).

From the Salzburg Reading and Writing test SLRT II (27) was used only the first minute of the reading subtest. This test constitutes an individual reading test that specifically examines the speed of decoding words (\( \alpha = 0.90 \)) and pseudo-words (\( \alpha = 0.98 \)). The Hamburg-writing-test HSP 1-9 (28) examines the writing strategies of students from first to ninth grade. The number of correct graphemes will be used as a raw score (\( \alpha = 0.92 \)).

The math test was slightly accepted for this study. For this reason, the psychometric quality criteria of the sample were specified. The Eggenberger calculation test ERT 4+ (29) measures the arithmetic skills of children from fourth to fifth grade. According with this test, was constructed the scale of Numbers (\( \alpha = 0.87 \)) and Basic Arithmetic (\( \alpha = 0.77 \)), Subtraction (\( \alpha = 0.83 \)), Multiplication (\( \alpha = 0.83 \)) and Division (\( \alpha = 0.90 \)).

The scale Numbers verified the understanding of number lines and position of numbers and the scale Basic Arithmetic tested the calculation ability in adding, subtracting, multiplying and dividing. In the mathematic testing raw scores from 0 to 5 (in the Numbers scale) and a row score from 0 to 20 (in the Basic Arithmetic scale) could be achieved.

The FDI questionnaire 4-6 (11) measures the degree of social integration (e.g. “I’m very happy with my classmates”) and emotional integration (e.g. “I like going to school”). The questionnaire was tested in the Swiss survey of students from fifth and sixth grade (\( \alpha = 0.89; \alpha = 0.93 \)). Additionally, the teachers
инклузивното образование и да го определат статусот на ПОП.

3. Резултати

Часови во инклузивното образование

Бројот на часовите во инклузивното образование е застапен според наставната програма (30,31). Времетраењето на инклузивното образование е изразено по ученик во училишни часови. Описот во проценти не е користен, билејки бројот на училишни часови неделно е различен. Понатаму, бројот на часови на инклузивното образование за учениците со ПОП варира од 15 до 30 часови неделно (M = 22.6, SD = 4.5). РНП - учениците беа едуцирани M = 25 неделно во инклузивни училини. Големината на поддршката надвор од училишта за РНП - учениците просечно беше еден час неделно. Учениците според ОПНП-образовниот план одржувале просечно по M = 22.55 часови неделно во инклузивни услови и M = 4.41 часови неделно во изолирани услови. Учениците кои го следеа РНП - наставникот план посетуваа M = 17.5 часови во инклузивни услови и M = 4.5 часови неделно во изолирани услови. Во просек, еден наставник од интегрирани паралелки одржуваше M = 22.5 (SD = 0.52) часови неделно во инклузивните училини.

Успех и социјална инклузија на учениците со и без ПОП

Со цел да се споредат резултатите, просечните резултати од тестирањето се прикажани во табелата 1. Бидејки вреднувањето на индивидуалните тестови варираше, сите добиени резултати беа претворени во z-резултати, како што е прикажано на слика 1. За таа цел, беа користени нормализирани резултати. Разликата помеѓу учениците со ПОП и без ПОП беше тестирана со помош на двонасочниот t-тест.

were asked to estimate the hours of integrative schooling and to name the status of the SEN.

3. Results

Hours in integrative education

The numbers of hours in the integrative education are represented according to the curriculum (30, 31). The amount of integrative schooling is given per pupil in school hours. A description in percentage is not useful since the number of school hours per week was various. Furthermore, the number of hours of integrative schooling for students with SEN varied from 15 to 30 hours per week (M = 22.6, SD = 4.5). RC students were schooled M = 25 hours per week in integrative classrooms. The amount of support outside the classroom for RC students was on average one hour per week. Students in the GSS curriculum had an average of M = 22.55 hours per week in integrative settings and M = 4.41 hours per week in segregated settings. Students following the SMH curriculum also had M = 17.5 hours in integrative settings and M = 4.5 hours per week in segregated settings. On average, one integration teacher allocated M = 22.5 (SD = 0.52) hours per week in an integrative classroom.

Performance and social integration of students with and without SEN

In order to compare the results, averages of the scales were shown in Table 1. Since the scaling of the individual tests varied widely, all raw test scores were transformed into z-scores, as shown in Figure 1. For this purpose, the normalized scores were used. The difference between the students with SEN and without SEN was tested using the two tailed t-test.
Слика 1: Средна вредност од индивидуалните тестирања на учениците трансформирана во z скала

Кога станува збор за флуидната интелигенција и успехот на училиште, учениците без ПОП постигнаа редовни резултати, за разлика од онисо ПОП кои беа рангирани едно стандардно отстапување пониско.

Табела 1: Средно и стандартно отстапување кај учениците во резултатите од тестирањето и прашалниците

<table>
<thead>
<tr>
<th>Ученици без ПОП/ Students without SEN</th>
<th>Ученици со ПОП/ Students with SEN</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Флуидна интелигенција/Fluid Intelligence</td>
<td>93.84</td>
<td>11.97</td>
<td>76.38</td>
<td>16.32</td>
</tr>
<tr>
<td>Броеви (математика)/Numbers (Math)</td>
<td>4.13</td>
<td>1.43</td>
<td>1.74</td>
<td>1.75</td>
</tr>
<tr>
<td>Основна аритметика (математика)/Basic Arithmetic (Math)</td>
<td>8.82</td>
<td>3.27</td>
<td>3.02</td>
<td>3.42</td>
</tr>
<tr>
<td>Соодветни графеми (спелување)/Matched Graphemes (Spelling)</td>
<td>50.21</td>
<td>11.15</td>
<td>38.49</td>
<td>10.79</td>
</tr>
<tr>
<td>Читање со разбирање/Reading Comprehension set</td>
<td>46.18</td>
<td>10.74</td>
<td>33.56</td>
<td>11.76</td>
</tr>
<tr>
<td>Разбирање на текстот при читање/Reading Comprehension text</td>
<td>46.72</td>
<td>10.38</td>
<td>33.21</td>
<td>7.98</td>
</tr>
<tr>
<td>Декодирање на зборовите/Word Decoding</td>
<td>48.43</td>
<td>28.89</td>
<td>18.46</td>
<td>19.26</td>
</tr>
<tr>
<td>Декодирање на псевдозборовите/Pseudoword Decoding</td>
<td>47.25</td>
<td>29.18</td>
<td>25.91</td>
<td>26.44</td>
</tr>
<tr>
<td>Социјална интеграција/Social Integration</td>
<td>3.72</td>
<td>0.68</td>
<td>3.37</td>
<td>0.68</td>
</tr>
<tr>
<td>Емоционална интеграција/Emotional Integration</td>
<td>2.85</td>
<td>1.01</td>
<td>2.99</td>
<td>0.99</td>
</tr>
</tbody>
</table>

(Значајноста беше мерена со двонасочен t-тест/Significance was measured by a two tailed t-test)

На двете математички скали, учениците без ПОП постигнаа значително повисок резул-

Figure 1: Means of individual tests of the students transformed into z-scale

In terms of fluid intelligence and school performance, the students without SEN achieved regular scores whereas those with SEN were positioned one standard deviation below.

Table 1: Mean and standard deviation of the students’ results from the tests and questionnaires

On both mathematical scales, the students without SEN achieved a significant higher
With regards to the number of hours in integrative schooling, it was discovered that RC and GSS students were schooled the most in integrative classes. On the contrary, SMH students spent less time in integrative classes. This result is similar to Schiller et al. (5) conclusions and can be supported by the fact that lessons for students with SEN are negotiated between the head masters and the parents. Hence, students with SMH have fewer lessons. These lessons are negotiated for each student individually, and the determined total hours are allocated differently in various subjects.

The difference between regular students and students with SEN in regards to fluid intelligence and academic achievement corresponded to other investigations (11, 13). Even regarding the school performance, the results were similar to the American longitudinal studies (7). This implies that in maths, regular students were able to move onto new subjects by the fifth grade, whereas students with SEN still had great difficulties with basic arithmetic, especially multiplication.

Discussion

With regards to the number of hours in integrative schooling, it was discovered that RC and GSS students were schooled the most in integrative classes. On the contrary, SMH students spent less time in integrative classes. This result is similar to Schiller et al. (5) conclusions and can be supported by the fact that lessons for students with SEN are negotiated between the head masters and the parents. Hence, students with SMH have fewer lessons. These lessons are negotiated for each student individually, and the determined total hours are allocated differently in various subjects.

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Заклучок

Во заклучокот, резултатите покажаа дека инклузивните одделенија се карактеризираат со голема хетерогеност. Моментално постојат голем број часови кои поддржуваат индивидуални училишни групи. Значајно е да се спомене дека на инклузивното образование се управуваше со недостигаат инклузивни методи на предавање, посебно развени за учители. Се управуваше недостауваат заедничка наставна програма, образовни програми и материјали кои би овозможиле профитабилно образование без оглед на разликите во успехот по математика и германски јазик.

За да се развие инклузивната училишна услови во вистинска инклузија, потребно е сите учители во одделението да се чувствуваат удобно и прифатено. Резултатите од ова истражување се управуваат далеку од оваа цел. Во полето на социјалната интеграција, резултатите покажаа дека постојат значителна разлика помеѓу учениците со и без ПОП. Вредно е да се спомене дека редовните ученици се непоштувани и по своите соученици. Во рамките на емоционалната интеграција, оваа разлика не се појави. Овој резултат се разликува од резултатите на Sauer и сор. (20), кои не најдоа никаква разлика помеѓу овие групи во Германија, но е слично со истражувањата на Klicpera & Gasteiger-Klicpera (16) и Huber (17) кои укажаа дека учениците со ПОП беа дел од групата на непопуларни ученици со помалку пријатели во интегративните училини.

Од оваа причина, социјалната интеграција треба да биде поцентрална кога учителот ги подготвува часовите. Состаноците и дискусиите кои промовираат разбиране за недос татокот и попреченоста кај учениците во од-

Conclusion

In Conclusion, the results show that integrated classes are characterized through a great heterogeneity. Currently, there are plenty of lessons, which support individual student groups. Nevertheless, it is worth mentioning that inclusive teaching still lacks inclusive teaching methods, specifically developed for team-teaching. Common curricula, learning programs and materials that enable a profitable coeducation are still missing, despite of the differences in the achievement in mathematics and German language.

In order to develop the integration from school setting into real inclusion, it requires for all students in the class to feel comfortable and accepted. The results of the study are still away from this aim.

In the field of social integration, the results showed that a significant difference exists between students with and without SEN. It is worth noticing that regular students mentioned that they more frequently get along well with their classmates. Within the range of emotional integration, this difference did not appear. This result differs from the results by Sauer et al. (20), who did not find a difference between these groups in Germany, but it is similar to the research position of Klicpera & Gasteiger-Klicpera (16) and Huber (17), who both pointed out that the students with SEN were part of the unpopular student groups with fewer friends in the integrative classroom.

For this reason, social integration should be more central when the teachers are preparing the lessons. Meetings and discussions which promote understanding for impairment and
делицието се сметаат за позитивни и коопериативни методи за предавање, како што е „групната сложувалка“.

References


