SENSE OF COHERENCE AND SOCIAL COMPARISON IN THE CLASSROOM: THE COMPARATIVE STUDY ON STUDENTS WITH AND WITHOUT DYSLEXIA

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Abstract
Regardless of the age, people are prone to engage in social comparison. Apart from the informative value of social comparison for the self, the need for comparison-based information arises particularly in threatening situations (Vohs, Heatherton, 2004), stress (Buunk, 2011), or under novelty and uncertainty conditions. We argue that students with dyslexia in the classroom are vulnerable to most of the circumstances triggering social comparison process. Namely, due to educational difficulties caused by dyslexia, they experience high level of stress in school setting and are deeply anxious about their academic performance (Alexander-Passe, 2007). Considering the educational difficulties of youngsters with dyslexia, it is surprising that until now it has been the gap in research on the direction or function of social comparison in the classroom made by adolescents facing dyslexia.

This study aims at capturing social comparison in the classroom undertaken by students with dyslexia controlling for their sense of coherence as potential factor contributing to the evaluation of own abilities compared to others. In details, we measured how students with and without dyslexia evaluate their abilities as compared to other students in the classroom. Additionally, we embedded social comparison of the abilities within two temporal orientations. Namely, we measured how students with and without dyslexia evaluated their current abilities and their expectations regarding future abilities.

Since the upward social comparison is considered as beneficial for the self-esteem and psychosocial adaptation (Marsh, Parker, 1984), we aimed at searching for the factor that could strengthen the perception of their abilities (both current and future) by students with dyslexia. We focused on the sense of coherence (SOC) hypothesizing its positive contribution to the evaluation of current and future abilities made by the students in the classroom.

Data were collected from 116 students with developmental dyslexia and 160 students without developmental dyslexia (Mean age = 14.35; SD=1.10) for students without dyslexia. Social Comparison Scale (SCS, Rutkowska, Gosk, Dominiak-Kochanek, 2018) was used to measure the evaluation of current and future abilities as compared to other in the classroom. SCS consists of two subscales serving to measure respectively evaluation of current abilities and future abilities. Participants were asked to rate (from 1 - much worse to 5 - much better), how they evaluate their skills to learn new things as compared to others in the classroom now and in the future. To measure sense of coherence, a short version of SOC questionnaire was used based on Antonovsky's SOC concept.

The results showed that the evaluation of the current and future abilities as compared to others in the classroom was lower in students with dyslexia than youth without dyslexia. Further, SOC was an insignificant predictor of the way students with dyslexia evaluated their current abilities but positively contributed to the evaluation of their future abilities made through the social comparison. It suggests that in spite of the existing difficulties in reading and writing, which hamper their positive evaluation of the current abilities as compared to others, students characterized by high SOC and dyslexia aspire to self-improvement in the future.

Keywords: social comparison, sense of coherence, dyslexia.

1 INTRODUCTION
Dyslexia can be considered from the perspective of the educational problem, as the student's difficulties in reading and writing, but also from the psychosocial functioning of people with this disorder, where it is analyzed how difficulties in reading and writing translate into the student's functioning. As research shows [1], young people think that this problem is particularly evident at an earlier educational stage, because it is then when the emphasis is placed on reading and writing. Teachers evaluate first of all the technique with which the student reads, the level of understanding of the read text, and the quality of the handwriting. Fluent reading is expected and desirable - as is the
global, reading comprehension and careful, shapely, so-called, neat handwriting. Due to the difficulties typical for dyslexia, the student, despite the significantly greater contribution of work compared to his or her peers without this disorder, has problems with fluent reading, reading without comprehension persists for a long time as well, he or she also has a problem with clear and shapely handwriting [2], and this often results in lower grades. Therefore, a dyslexic student from an early age has been placed in a difficult psychological situation.

Although, at higher stages of education, the teacher's assessment concerns other aspects, and no longer is the method of reading and writing graded but rather the quantity and accuracy of memorized material, the correct processes of reading and writing are fundamental in knowledge acquisition. Both mentioned processes are significant to the quality of student's preparation for classes. In the case of a student with dyslexia at the higher stages of education, reading and writing difficulties still persist, and the problem of the slower pace of these processes is also becoming more evident.

Both the difficulty at the early stages of education regarding the process of learning to read and write as well as at the higher stages with the speed of performing certain activities and their effectiveness, often put a student with dyslexia in a more difficult psychological situation compared to a peer without this disorder. Awareness of their limitations translates into the level of forming psychological characteristic. Previous research carried out in the group of adolescents with dyslexia showed that their self-esteem, aspirations, and quality of life are often lower compared to adolescents without this disorder [3], [4]. Students with dyslexia have a negative self-image and demonstrate a greater sense of dissatisfaction with themselves [5]. They assess their possibility of achieving success in life as low [4]. It was also shown that people with dyslexia remember more failures compared to people without this disorder [6].

Frequent experience of educational failures by dyslexic students [7] as well as the awareness that despite a considerable work contribution, the effect will not be satisfactory anyway, result that students with dyslexia do not expect school success and when it happens, they explain it in terms of chance or luck rather than the ability and effort put into the task. Taking into account the psychological situation of a student with dyslexia, the question arises how a dyslexic student perceives his or her abilities, and whether the perception is similar or different compared to students without this disorder.

1.1 Social comparison in the classroom

Comparison with others is so natural and automatic that Festinger who established the foundation of social comparison theory, defined this process in terms of “a drive to evaluate the opinions and abilities” [8]. People are preoccupied with comparison due to multiple motives such as self-evaluation, self-improvement and self-enhancement [9]. Self-evaluation relies on learning about the self through comparing to others who share similar attributes. Two aspects are at the core of people’s interest while searching for comparison-based information. These are opinions and abilities. Comparison of abilities proceeds whenever an individual considers whether the outcome obtained by him or her is better, same or worse than others. Unlike, the comparison of opinions is accompanied by considering whether and to what extent feelings and thoughts about a certain phenomenon differ from what other people think of feel about it. Gibbons and Buunk [9] accurately illustrated the differences between comparison of abilities and opinions by saying that people who are engaged in the former, ask themselves the question “How am I doing?” while those who are preoccupied with the latter, focused on the question "What should I think or feel?". Although in both cases, the whole process is subjective in nature, abilities are basically manifested through performance and sometimes the objective criteria of evaluation of abilities may exist. Festinger [8] claimed that under such condition the proneness to evaluate abilities through social comparison decrease but it is still hard to believe that students resign from comparing their grades only because a teacher straightforwardly formulates performance standards.

The comparison of abilities is at the core of this paper. We assumed that students with dyslexia may run the process of comparison in a field of school abilities on a regular basis. Previous research showed that social comparisons are prompted particularly by specific situations such as uncertainty [8], stress situations [10], novelty and threatening circumstances [11]. Due to reading and writing difficulties of students with dyslexia, it is highly plausible that their school setting may be the source of situational factors mentioned as those responsible for activating the comparison process in the classroom. The proneness to compare with others with regard to abilities is additionally strengthen by self-enhancement motive which may be another important mechanism in case of students with dyslexia. Self-enhancement relies on using comparison with others in a way facilitating to enhance self-esteem or self-concept [9], particularly while facing the failure. This motive of social comparison
leads usually to downward comparison which is supposed to be beneficial for improving the mood in short-term exclusively. Instead, self-improvement motive of social comparison is perceived as responsible for positive shift with regard to future performance in long-term. This is because a person driven by upward comparison may be keen on brushing up the performance standards. Indeed, previous research showed that students who compared their grades with the peers who did well at school, finally improved their academic achievement [12]. However, it is still the open question what is the direction of comparison made by students with dyslexia with regard to school abilities and how much it differs from students without dyslexia.

2 METHODOLOGY

2.1 Current Study

This study focused on the meaningful aspect of the self, built upon the comparison with others. More precisely, subjective appraisal of abilities were measured in youngsters with and without developmental dyslexia who were asked to evaluate their current and future performance with regard to school grades as compared to other pupils in the classroom. Thus, two temporal orientation of the comparisons were employed, embedded in the evaluation of abilities mandatory to achieve the success in school setting. The cross-sectional designed of the study enabled to find out if and to what extent so-called comparative evaluation represented by the way youngsters viewed their current and future school abilities as compared to others distinguishes adolescents with dyslexia from those without it. Comparative evaluation is defined as the appraisal of the abilities in a certain area made by an individual by comparing his or her capacity to other people in this area. We focused on comparative evaluation of the current (CCE-current comparative evaluation) and future abilities (FCE-future comparative evaluation) in youngsters with dyslexia because the way an individual rates his or her capability in some area compared to others, is an important factor contributing to the performance level (Blanton, Kuypers, 1999). Thus, comparative evaluation may be the source of protective factor boosting the grades when its level is perceived as higher than average and may push the performance down when its level is evaluated lower than average. We hypothesized that due to educational difficulties experienced by students with dyslexia, their comparative evaluation of both current and future school abilities (CCE and FCE) will be lower compared with students without dyslexia (hypothesis 1). The perception of the future self in terms of less capable than other students is drawn upon the conviction that students with dyslexia predict future achievements to a large extent by considering current school outcomes. If so, the next fundamental step should require to search for the factors strengthening the comparative evaluation of current and future abilities. The current study addressed this issue since the sense of coherence (SOC) was taken into account as the potential factor that may positively contribute to CCF and FCE (hypothesis 2).

To sum, one can state that two sorts of comparisons were conducted in this study. The first sort of comparison of relatively objective nature stem simply from the cross-sectional design of the study enabled to compare students with and without dyslexia with regard to CCE, FCE and SOC. The second sort of comparison has entirely a subjective character relying on capturing the way participants with and without dyslexia evaluate their current and future school abilities by comparing self to others in the classroom.

2.2 Methods

Participants. 276 students participated in this study, including 116 students with developmental dyslexia and 160 students without dyslexia. In line with the requirements of cross-sectional study, the age of participants in both samples was comparable covering early and middle adolescence and ranging from 12 to 18 years old. Namely, the mean age of participants with dyslexia was M= 14.30 (SD=1.113) while the mean age of students without dyslexia was M=14.47 (SD=1.067). Participants with dyslexia were asked to indicate it by themselves as long as they were officially diagnosed as having writing and reading difficulties.

Current and future comparative evaluation. CCE and FCC are two separate subscales derived from Social Comparison Scale (SCS), elaborated for the purpose of this study (Rutkowska, Gosk, Dominiak-Kochanek, 2016). Both subscales consist of 5 items to measure the evaluation of current and future school abilities as compared to other in the classroom. More precisely, CCF subscale contains the questions about grades, school requirements and school abilities which a participant is supposed to evaluate, comparing their own level of the above aspects with others in the classroom.
An example item from this scale is ‘Compared to other students in your classroom, your grade point average is.’. Participants responded to the items using the 5-point scale (1-much lower, 2-slightly lower, 3-same, 4-slightly higher, 5-much higher). FCC subscale contains items concerning the plausibility of succeeding in the future by graduating from the university or finding a good job. Similarly, participants used again the same 5-point scale rating the their chance for success as compared to others in the classroom. The psychometric properties of both subscales of SCS are satisfied ranging from $\alpha = .84$ for CCE to $\alpha = .85$ for FCC.

**Sense of coherence.** A short version of well-known SOC questionnaire was used based on Antonovsky's SOC concept (Polish adaptation: M. Zwoliński, I. Jelonkiewicz, K. Kosińska-Deć, [13]). SOC consists of 13 items covering three SOC components i.e. comprehensibility, manageability and meaningfulness. A sample item is ‘Do you have the feeling that you’re being treated unfairly?’. Participants are asked to rate on a 5-point scale how much they agree with the statement. The reliability of SOC in this study assessed by Cronbach alpha is $\alpha=0.84$.

### 3 RESULTS

#### 3.1 Descriptive statistics

To verify hypothesis 1, potential differences for each of the measures in both group of students with and without developmental dyslexia were examined with an univariate analysis of variance model (ANOVA). Table 1 presents the means and standard deviations of each measure in both groups of students – with and without developmental dyslexia.

<table>
<thead>
<tr>
<th>Variable</th>
<th>With dyslexia</th>
<th>Without dyslexia</th>
<th>$F$</th>
<th>$p$</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>SD</td>
<td>$M$</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>CCE</td>
<td>3.09</td>
<td>0.69</td>
<td>3.33</td>
<td>0.69</td>
<td>8.05</td>
</tr>
<tr>
<td>FCE</td>
<td>3.14</td>
<td>0.75</td>
<td>3.42</td>
<td>0.68</td>
<td>10.97</td>
</tr>
<tr>
<td>SOC</td>
<td>39.76</td>
<td>7.82</td>
<td>40.80</td>
<td>7.14</td>
<td>1.30</td>
</tr>
</tbody>
</table>

SOC – sense of coherence; CCE – current comparative evaluation; FCE – future comparative evaluation

ANOVA revealed a significant main effect of group for CCE $F(1,274) = 8.05, p = 0.005$ and FCE $F(1,274) = 10.97, p = 0.001$. Students without dyslexia scored higher then student with developmental dyslexia on current comparative evaluation as well as future comparative evaluation. No significant main effect of group was found for sense of coherence.

#### 3.2 The role of SOC in CCE and FCC level

Further step consists of verifying hypothesis 2. To do so, SOC was entered into linear regression as a predictor of CCE for both student groups with and without developmental dyslexia separately.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>$B$</th>
<th>$SE B$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$\Delta R^2$</th>
<th>$F$ change (df)</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC</td>
<td>With dyslexia</td>
<td>0.12</td>
<td>0.008</td>
<td>0.14</td>
<td>1.50</td>
<td>0.02</td>
<td>2.25 (1,112)</td>
<td>n.s</td>
</tr>
<tr>
<td></td>
<td>Without dyslexia</td>
<td>0.28</td>
<td>0.070</td>
<td>0.29</td>
<td>3.88</td>
<td>0.08</td>
<td>14.95 (1,158)*</td>
<td>0.001</td>
</tr>
</tbody>
</table>

*$p < 0.001$; SOC – sense of coherence
Sense of coherence was found to positively contribute to CCE but only in students group without dyslexia $\Delta R^2 = 0.08$, $\Delta F (1,158) = 14.95$, $\beta = 0.29$, $t = 3.88$, $p < 0.001$ while in case of students with dyslexia SOC turned to be insignificant. Similarly, the contribution of SOC to FCE was evaluated separately for group with and without dyslexia. The results are presented in Table 3.

Table 3. Regression analyses summary for dependent variable predicting future comparative evaluation (FCE)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>B</th>
<th>SE B</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$\Delta R^2$</th>
<th>$F$ change (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC</td>
<td>With dyslexia</td>
<td>0.30</td>
<td>0.009</td>
<td>0.31</td>
<td>3.51</td>
<td>0.09</td>
<td>12.33 (1,112)*</td>
<td>0.001</td>
</tr>
<tr>
<td>SOC</td>
<td>Without dyslexia</td>
<td>0.30</td>
<td>0.007</td>
<td>0.32</td>
<td>4.24</td>
<td>0.10</td>
<td>17.94 (1,158)**</td>
<td>0.000</td>
</tr>
</tbody>
</table>

*p < 0.005, **p < 0.001; SOC – sense of coherence

When we regressed future abilities onto the sense of coherence a slightly different picture emerged. Sense of coherence predicted FCE positively and significantly in both groups of student – with developmental dyslexia $\Delta R^2 = 0.09$, $\Delta F (1,112) = 12.33$, $\beta = 0.31$, $t = 3.51$, $p < 0.001$ and without dyslexia $\Delta R^2 = 0.10$, $\Delta F (1,158) = 17.94$, $\beta = 0.32$, $t = 4.24$, $p < 0.001$.

4 CONCLUSIONS

In this study, two hypotheses were tested. The first hypothesis assumed that due to educational difficulties experienced by students with dyslexia, their comparative evaluation of both current and future school abilities (CCE and FCE) will be lower compared to students without dyslexia. The results confirmed this hypothesis. The students with dyslexia have a lower level of both CCE - current comparative evaluation and FCE - future comparative evaluation, compared to students without this disorder. The obtained result may stem from three complementary premises.

Firstly, students with dyslexia, due to the difficulties in reading and writing that accompany them from the very beginning of school education, often receive lower grades compared to their peers [4], [14]. The grades are significant for students as well as their parents and teachers, because in fact the school grade is an important determinant of the student's achievement. The confirmation of this statement is an example of a conversation, when asking the teacher about the child's education, the answer the parent receives is: Look at the grades. When lower grades occur frequently and persist for a long time, which unfortunately happens in the case of a student with dyslexia due to the long-term nature of the disorder, then the student begins to assess his or her both present and future abilities lower.

The lower CCE and FCE score in this study can also be seen as an expression of the high awareness of students with dyslexia with regard to both their difficulties and their actual capabilities/abilities. Dyslexia is diagnosed in people representing intellectual norm; therefore, the respondents are aware that they are learning much more than their classmates without this disorder, and the effects - received grades, are not adequate to their work contribution. In addition, they are becoming increasingly aware that dyslexia is not only an educational problem (or a school problem), but a problem that concerns various aspects of life. Students - adolescent respondents who participate in social life, perceive that many tasks required from adults are related to reading and writing (e.g. writing emails, reading instructions, passing a driving test). As a consequence, their perception of the future, like the present, is lower than in the group of students without this disorder. The above argument is partly supported by the results of Taylor and Walter's (2003) [15] showing that people with dyslexia were less likely to choose professions related to science/calculations, management and finances i.e. occupations based on working with written word, numerical processing under considerable time pressure when compared to their peers without dyslexia.

Thirdly, the student's social perception of dyslexia may be meaningful for the lower assessment of his or her abilities. Since student with dyslexia is often perceived by a teacher as someone of lower
abilities[3] [16], he or she may easily enter the role" of a weak student in line with the concept of "looking glass self" by Charles Cooley.

The second hypothesis assumes that the sense of coherence (SOC) will act as a positive predictor of CCF and FCE. This hypothesis was partially confirmed, because CCE was not related to SOC in the group of people with dyslexia. Probably the respondents, being students, combine their abilities with the grades that are given by the teacher. They cease to feel that the grades depend on their work contribution (there is no sense of connection: more effort - higher grades). As a consequence, regardless of the time devoted to learning, the resources being mobilized, the situation does not change and the grades are still poor. As the researchers emphasize [17], the pressure of time, which takes place during examinations, may prevent a person with dyslexia from presenting real knowledge, and ultimately translate into a lower grade from the exam. Due to the above-mentioned feeling of the obtained grades being more connected with the teacher, and to a lesser extent with the student's own contribution, it can be stated that this is one of the factors of the lack of connection between SOC and CCE.

Unlike, in students without this disorder - SOC was a predictor of CCE. Due to the nature of their experiences, they have a greater sense of control over the grades, which means they assign a superior role to their motivation and own effort as factors determining the level of their school achievements.

The results of the study also confirmed the relationship between SOC and FCE - future comparative evaluation. In the case of FCE, in both groups SOC was related to its level. In adulthood, there will be no school grades, which is why the student with dyslexia probably has a greater sense of relationship between the level of the sense of coherence and the perception of the future. The adolescent has a growing sense of control over success in life as one that depends on his motivation. He can always choose the kind of career path where reading will not be as important, which is why he feels he can predict his future situation to a greater extent.

5 FUTURE STUDIES

Situating themselves lower in social comparisons probably acts as a demotivating factor to a student with dyslexia – with regard to his actions and achieved results; therefore, recognizing the factors conditioning the lower level of CCE and FCE may be an important next step in changing the psychological effects of dyslexia. In the future, it would be worthwhile to design studies aimed at identifying the crucial factors shaping adequate perception of one's capabilities.

From the point of view of the above results, it would also be worth to design studies on whether the mechanism of "entering the role" – one of a loser, is common among students with dyslexia, and if yes, how strong it is.

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REFERENCES


