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Perceived Autonomy Levels among Elementary School Students and Their Teachers

Abstract

Many authors have spoken against controlling environments and in favour of autonomous ones. In order to estimate perceived autonomy levels in the classroom, we decided to compare teachers' perceptions with students' ones, gaining a more accurate idea of the autonomy levels present in the classroom. The study participants (231 students, 18 teachers) provided data which showed how the teachers' perceptions differ from the students' ones in all cases, generally the teachers rating autonomy levels higher than the students. We also found indicators of differences present among teachers of the same subject areas as well as in terms of the students' gender, school and age.

Keywords: *self-determination, autonomy, elementary school, teacher, student*

Introduction

Ryan and Deci (2000) have recognized the importance of extrinsic motivation, which classical authors, such as deCharms, often regarded as an impoverished and weak form of motivation. Self-determination theory, however, introduces a variety of motivation types within extrinsic motivation, ranging from weak to proactive. Extrinsically motivated individuals can, therefore, perform activities with resentment and disinterest or willingly, by accepting the value of an activity. This aspect of self-determination theory comes in very handy when working in environments where extrinsic motivation is the predominant type of motivation, e.g., knowing how to successfully motivate students is a helpful tool for any teacher.

As emphasized in self-determination theory, it is the interpersonal context that can encourage either autonomy supportive or controlling environment (Black & Deci, 2000). Transposing this into the educational environment, we can conclude that teachers and parents can critically influence the degree to which students are autonomous and controlled. Students are often not intrinsically motivated for all tasks and it is vital to get them extrinsically motivated without the use of force or threats. Ryan and Deci (2000) have described this as internalization and integration of values and behavioural regulations. The degree of internalization is related to the fulfilment of the need for competence and autonomy as well as the sense of relatedness – the feeling of belonging to a group will catalyse the acceptance of group values and regulations (Vansteenkiste, Lens & Deci, 2006; Ryan & Deci, 2000). In the classroom context, this would mean that relatedness to the teacher is crucial in the student's acceptance of school-related norms.

Many authors suggest that autonomous teachers allow more self-initiative on the part of students leading to stronger extrinsic motivation, higher academic achievement and positive general well-being (for an overview, cf. Vansteenkiste et al., 2006; Niemec et al., 2006; Deci, Schwartz, Sheinman and Ryan, 1981). Therefore, an autonomous teacher, while still delivering necessary knowledge, manages to understand the student's point of view, encourages the student to search for answers and minimizes pressure and demand. Controlling behaviours, on the contrary, have been linked to learning problems and emotional disorders (Grolnick, Kurowski, Dunlap & Hevey, 2000), weak conceptual learning (Benware & Deci, 1984) and lower academic achievement (Grolnick & Ryan, 1987). Numerous studies examining the benefits of autonomy support can only provide us with perceived autonomy levels from either students', teachers' or raters' perspective – and research has shown that either of those viewpoints can bring about different perceived autonomy levels (Stroet, Opdenakker and Minnaert, 2013). Instead of gaining information from either students or teachers, we attempted at compiling data from a group of students and their particular teacher. We did so in several different classes, based on the subject area, asking the students what levels of autonomy they were experiencing and, at the same time, asking the teacher what levels of autonomy he/she was allowing.

The presented study

Our study focused on elementary school students' and teachers' perceived autonomy support. We explored to what degree students experienced autonomy

support from their teachers at different points of their elementary school education and in different subject areas. Thus, we covered perceived autonomy support from opposite standpoints. Juxtaposing the students' and teachers' perceptions offers a more complete insight into autonomy support, enabling us to objectively assess the extent of autonomy present in classrooms. We were interested in acquiring data on how students assessed autonomy levels with regard to particular teachers and, in return, how those same teachers evaluated their autonomy support offered in their subject areas.

The specific research questions in the study were the following:

(1) To what extent do the students' perceptions coincide with or differ from the teachers' assessment of autonomy support in particular subject areas?

(2) How does perceived autonomy support differ depending on the students' gender and age?

(3) What are the overall levels of autonomy support among the students and teachers?

Method

Participants

A total of 231 students (53.7% male) from Slovenian elementary schools in the Posavje region participated in the study. Using convenience sampling, we selected participants from two elementary schools, each having only one generation of Year 4, Year 6 and Year 8 students. The participants were divided into three age groups according to their year of schooling, namely 35 students attending Year 4 (54.2% male), 99 students attending Year 6 (54.5% male) and 97 students attending Year 8 (52.6% male). Year 4 students assessed their class teacher (one teacher, who teaches the majority of subjects), while Year 6 and Year 8 students assessed their Mathematics, English and Art teachers.

At the same time, our study focused on the teachers' assessment of the autonomy they allow in the classroom. Selected participants were either class teachers in Year 4, or those teaching Mathematics, English and Art in Year 6 and Year 8. The study included data compiled from 18 teachers, among whom there were 10 Class teachers, 2 Mathematics teachers, 4 English teachers and 2 Art teachers. Their age ranged from 25 to 52 (M = 36.6; SD = 8.36), while their working experience ranged from 1 to 31 years (M = 11.50; SD = 9.41). Among all the teachers there were 17 females and one male. Six teachers were rated by their students, while the remaining teachers only provided their self-reports.

Procedure

The participating students completed the questionnaires after compulsory school lessons. The participating teachers completed the questionnaires in their own time. Six teachers were instructed to complete the questionnaires with regard to a particular class (who, in return, were rating the teacher), while the remaining teachers rated their general levels of autonomy. The data was collected in March, 2013.

Measures

The original short form 6-item Learning Climate Questionnaire (LCQ) was adapted into a 7-item questionnaire by adding another item from the original 15-item Learning Climate Questionnaire (LCQ). These open access question-naires were developed by Edward L. Deci and Richard M. Ryan and are available at the Self-Determination Theory website. The questionnaires are used in specific learning settings when we are enquiring about the autonomy support of a par-ticular teacher or instructor. The questionnaire was adapted into Slovenian for the purposes of this study. The adapted LCQ items were presented in two variants, each measuring the students' or the teachers' perceived autonomy support. The participants rated the items on a 5-point Likert scale. Alpha reliability for all the students showed high overall internal consistency ($\alpha = 0.93$). Alpha reliabilities for the subgroups in our data were: Year 4 (0.73), English (0.90), Mathematics (0.95), Art (0.75) and the teachers' subscale (0.63).

Results

The research aimed at establishing the perceived autonomy levels in the class-room. The data collected in our survey is first presented according to particular teachers and their students, observing the general perceived autonomy levels for the teachers and students respectively. We continue to analyse the results accord-ing to the students' gender and age in order to establish significant differences and answer the research questions.

Perceived autonomy support with Year 4 students and their teachers

In general, class teacher 1 has shown perceived autonomy levels higher than her students. We can notice that the variable with the highest mean difference is "Encouraging students to ask questions", which the students clearly perceived as less present in comparison to their teacher. The variable both the teacher and

Table 1. Means and standard deviations for class teachers and their students

Item	Class Teacher 1 perceived autonomy support		Students' perceived autonomy support (n = 23)[a]		Difference between groups (ΔM)	Class Teacher 2 perceived autonomy support		Students' perceived autonomy support (n = 12)[b]		Difference between groups (ΔM)
	M	SD	M	SD	(ΔM)	M	SD	M	SD	(ΔM)
Offering choice	4.00	–	4.04	0.88	0.04	4.00	–	4.50	0.52	0.50
Having understanding for students	4.00	–	3.57	1.27	0.43	5.00	–	4.75	0.62	0.25
Conveying confidence in students' work	4.00	–	4.30	0.88	0.30	4.00	–	4.58	0.70	0.58
Encouraging students to ask questions	4.00	–	3.43	0.79	0.57	4.00	–	4.25	0.75	0.25
Listening to how students would like to do things	4.00	–	4.30	0.97	0.30	4.00	–	4.50	0.91	0.50
Trying to see how students understand things before suggesting a new way	4.00	–	3.78	1.35	0.22	5.00	–	4.50	0.67	0.50
Making sure students understand course goals	5.00	–	4.74	0.69	0.26	4.00	–	4.83	0.39	0.83
OVERALL	4.14	0.38	4.02	0.46	0.12	4.29	0.49	4.56	0.18	0.36

[a] Intraclass Correlation Coefficient showed 61.5% of absolute agreement.
[b] Intraclass Correlation Coefficient showed 77.3% of absolute agreement.

the students agreed on mostly is "Offering choice". None of the variables yielded a statistical difference. Interestingly, class teacher 2 rated her autonomy levels lower than the students. Means comparison for particular variables shows the greatest difference for the last variable, "Making sure students understand goals", while analysis of the students' perceptions alone shows greatest standard deviation for the variable "Listening to how the students would like to do things". The items with the lowest means difference are "Having understanding for students" and "Encouraging students to ask questions". A significant difference was found only in the case of the variable "Offering choice" (χ^2 = 13.000, df = 2, p = .002), which the students assessed higher than the teacher.

Perceived autonomy support in English lessons

Table 2 shows a noticeable means difference while comparing means for all the 7 items for English teacher 1 and her students. The means comparison for particular variables shows the greatest difference for the variable "Encouraging students to ask questions". Both the teacher's and her students' answers coincide mostly for the variable "Having understanding for students". Significant difference was not found in any of the items. English teacher 2 also estimated the autonomy in her class higher than her students. Observing particular items, we can notice the highest means difference in two variables: "Conveying confidence in students' work" and "Encouraging students to ask questions ".The lowest means difference can be observed for the variable "Offering choice", however none of the items yielded statistical difference.

Perceived autonomy support in Mathematics lessons

Table 3 shows that Mathematic teacher 1 perceived autonomy levels in her classroom higher than the students. Looking at the means difference for particular variables we can notice that the teacher and her students disagreed mostly in the case of the variable "Trying to see how students understand things before suggesting a new way", and agreed mostly on the last variable, "Making sure students understand course goals". Mathematics teacher 2 estimated his general autonomy levels slightly higher than his students. The means for particular items differ mostly for the variable "Encouraging students to ask questions". As is the case with Mathematics teacher 1, here too both the teacher and the students agreed mostly on the last variable, "Making sure students understand course goals". None of the items was statistically different, though.

Table 2. Means and standard deviations for English teachers and their students

Item	English teacher 1 perceived autonomy support		Students' perceived autonomy support (n=38)[a]		Difference between groups	English Teacher 2 perceived autonomy support		Students' perceived autonomy support (n=27)[b]		Difference between groups
	M	SD	M	SD	(ΔM)	M	SD	M	SD	(ΔM)
Offering choice	5.00	–	2.74	1.13	2.26	4.00	–	2.78	0.97	1.22
Having understanding for students	4.00	–	2.79	1.30	1.21	5.00	–	2.52	1.16	2.48
Conveying confidence in students' work	5.00	–	3.03	1.20	1.97	5.00	–	2.30	1.30	2.70
Encouraging students to ask questions	5.00	–	2.13	1.17	2.87	5.00	–	2.30	0.95	2.70
Listening to how students would like to do things	5.00	–	2.95	1.36	2.05	4.00	–	2.07	1.00	1.93
Trying to see how students understand things before suggesting a new way	5.00	–	3.00	1.23	2.00	4.00	–	2.11	1.05	1.89
Making sure students understand course goals	5.00	–	3.26	1.35	1.74	5.00	–	2.59	0.97	2.41
OVERALL	4.86	0.38	2.84	0.36	2.02	4.57	0.54	2.38	0.25	2.19

[a] Intraclass Correlation Coefficient showed 88.2% of absolute agreement.
[b] Intraclass Correlation Coefficient showed 90.1% of absolute agreement.

Table 3. Means and standard deviations for Mathematics teachers and their students

Item	Mathematics teacher 1 perceived autonomy support		Students' perceived autonomy support (n = 39)[a]		Difference between groups	Mathematics teacher 2 perceived autonomy support		Students' perceived autonomy support (n = 27)[b]		Difference between groups
	M	SD	M	SD	(ΔM)	M	SD	M	SD	(ΔM)
Offering choice	4.00	–	3.72	1.30	0.28	4.00	–	4.30	0.87	0.30
Having understanding for students	4.00	–	3.85	1.41	0.15	5.00	–	4.67	0.48	0.33
Conveying confidence in students' work	4.00	–	3.67	1.32	0.33	4.00	–	4.52	0.64	0.52
Encouraging students to ask questions	4.00	–	3.41	1.43	0.59	5.00	–	4.04	0.98	0.96
Listening to how students would like to do things	5.00	–	4.00	1.47	1.00	4.00	–	4.26	0.98	0.26
Trying to see how students understand things before suggesting a new way	5.00	–	3.90	1.43	1.10	4.00	–	4.26	0.81	0.26
Making sure students understand course goals	4.00	–	4.08	1.31	0.08	5.00	–	4.78	0.51	0.22
OVERALL	4.29	0.49	3.80	0.23	0.49	4.43	0.53	4.40	0.26	0.03

[a] Intraclass Correlation Coefficient showed 95.6% of absolute agreement.
[b] Intraclass Correlation Coefficient showed 81.6% of absolute agreement.

Perceived autonomy support in Art lessons

According to the responses of Art teacher 1 and her students (Table 4), general autonomy levels were again higher for the teacher. Analysing particular items, we can notice the greatest means difference for the variable "Encouraging students to ask questions" and lowest for the variable "Trying to see how students understand things before suggesting a new way". The results are similar for Art teacher 2 and her students, where we can see that the general autonomy perceptions of the teacher were higher than the students' ones. The means difference for individual items is most noticeable for the variable "Having understanding for students", while the scores for "Encouraging students to ask questions" were exactly the same. No significant difference was found in any of the items.

General levels of perceived autonomy support

The teachers estimated their own autonomy support higher (M = 4.46, SD = 0.17) than the students (M = 3.70, SD = 0.24). Comparing particular variables between groups, we can notice the highest means difference for the variable "Encouraging students to ask questions" (ΔM = 1.37), which was scored higher by the teachers. The means difference was lowest for the variable "Offering choice" (ΔM = 0.54). We found four variables where the differences between the teachers' and the students' perceptions were significant: "Having understanding for students" (χ^2 = 9.645, df = 4, p = .047), "Conveying confidence in students' work" (χ^2 = 10.437, df = 4, p = .034), "Encouraging students to ask questions" (χ^2 = 11.522, df = 4, p = .021) and "Trying to see how students understand things before suggesting a new way" (χ^2 = 11.620, df = 4, p = .020). The intraclass correlation coefficient for the group of teachers showed 59.6% of absolute agreement, whereas the intraclass correlation coefficient for the group of students showed 92.1% of absolute agreement.

Perceived autonomy support according to the students' gender and age (grade)

According to our data, gender induced differences were slight, with the girls' rating perceived autonomy levels higher (M = 3.75, SD = 0.17) than the boys' (M = 3.67, SD = 0.31). The means difference was greatest for the variable "Encouraging students to ask questions" (ΔM = 0.39) and lowest for the variable "Conveying confidence in students' work" (ΔM = 0.01). An independent-samples t-test was conducted to compare the perceived autonomy levels of the boys and girls. The variable "Encouraging students to ask questions" yielded a significant difference in scores for the boys and girls, t (229) = -2.23, p = .027. The intraclass correlation coefficient for the group of teachers showed 91.4% of absolute agreement, whereas

Table 4. Means and standard deviations for Art teachers and their students

Item	Art teacher 1 perceived autonomy support		Students' perceived autonomy support (n = 38)[a]		Difference between groups	Art teacher 2 perceived autonomy support		Students' perceived autonomy support (n = 27)[b]		Difference between groups
	M	SD	M	SD	(ΔM)	M	SD	M	SD	(ΔM)
Offering choice	4.00	–	4.50	0.76	0.50	4.00	–	4.26	0.81	0.26
Having understanding for students	4.00	–	4.58	0.68	0.58	5.00	–	3.96	0.80	1.04
Conveying confidence in students' work	5.00	–	4.29	1.04	0.71	4.00	–	3.93	0.73	0.07
Encouraging students to ask questions	5.00	–	3.13	1.34	1.87	4.00	–	4.00	1.04	0.00
Listening to how students would like to do things	5.00	–	4.34	1.07	0.66	4.00	–	4.07	0.96	0.07
Trying to see how students understand things before suggesting a new way	4.00	–	4.32	1.02	0.32	5.00	–	4.04	1.09	0.96
Making sure students understand course goals	5.00	–	4.26	0.92	0.74	4.00	–	4.11	0.97	0.11
OVERALL	4.57	0.53	4.20	0.49	0.37	4.29	0.49	4.05	0.11	0.24

[a] Intraclass Correlation Coefficient showed 50.7% of absolute agreement.
[b] Intraclass Correlation Coefficient showed 91.0% of absolute agreement.

the intraclass correlation coefficient for the group of students showed 93.2% of absolute agreement.

Age-based analysis suggests that the perceived autonomy support seems to be dropping with age. A one-way ANOVA was conducted to compare the effect of age on the perceived autonomy support. There was a significant effect of age on the perceived autonomy support for the following variables: "Offering choice" [$F_{(2, 228)}$, p = .003], "Conveying confidence in students' work" [$F_{(2, 228)}$, p = .002], "Encouraging students to ask questions" [$F_{(2, 228)}$, p = .000], "Listening to how students would like to do things" [$F_{(2, 228)}$, p = .001] and "Making sure students understand course goals" [$F_{(2, 228)}$, p = .000]. Tukey post-hoc comparisons of the three groups indicated that the Year 4 students (M = 4.20, SD = 0.80) showed significantly higher ratings than the Year 8 students (M = 3.64, SD = 1.21) for the variable "Offering choice" (p = .043); the Year 4 students (M = 4.40, SD = 0.81) showed significantly higher ratings than Year 6 (M = 3.76, SD = 1.29) for the variable "Conveying confidence in students' work" (p = .024) and the Year 8 students (M = 3.49, SD = 1.31) for the variable "Conveying confidence in students' work" (p = .001); the Year 4 students (M = 3.71, SD = 0.86) showed significantly higher ratings than the Year 8 students (M = 3.06, SD = 1.22) for the variable "Encouraging students to ask questions" (p = .034); the Year 4 students (M = 4.37, SD = 0.94) showed significantly higher ratings than the Year 8 students (M = 3.40, SD = 1.37) for the variable "Listening to how students would like to do things" (p = .001); the Year 4 students (M = 4.77, SD = 0.60) showed significantly higher ratings than the Year 6 (M = 4.05, SD = 1.25) for variable "Making sure students understand course goals" (p = .006) and the Year 8 students (M = 3.65, SD = 1.24) for the variable "Making sure students understand course goals" (p = .000). These results suggest that the perceived autonomy support lowers with growing age.

Discussion

The research aimed at establishing perceived autonomy support levels in Slovenian elementary schools in the Posavje region. To do so, we examined students' and teachers' perceived autonomy support levels. Evidently, the teachers' perceptions did not match the students' in any teaching area since they either over- or underestimated autonomy support the students reported. A quite extreme example can be found in the English lessons data, where the teachers' ratings were roughly doubled, signalling that the two teachers have an extremely distorted idea of the

autonomy support they offer in the classroom. Generally, we can notice a repeated emergence of the differences being greatest for the variable "Encouraging students to ask questions". The variable itself is a very straightforward behaviour which supports autonomy and is also easily detected by the students. Lack of it suggests that the teachers seem to be failing at offering autonomy support even by the use of less complex methods, as encouraging more questions on the part of the students. The differences were lowest for several variables which the students may not easily detect as autonomy supporting behaviours ("Making sure students understand course goals", "Trying to see how students understand things") and therefore do not find them as important in their classes. However, the variables "Offering choice" and "Having understanding for students" are fairly explicit behaviours and having the students and teachers rate them at similar levels points to a certain praiseworthy concordance. Reasons for such trends may be found in using the teachers' self-report as a means of measuring autonomy support. While examining the teachers' own assessment, we are aware that self-report is an extremely biased and subjective matter. Instead of assessing their actual work, the teachers might be assessing the behaviour they feel they should be showing in the classroom, leading to an unrealistic image of the autonomy support offered in the classroom. Apart from the fact that the differences might stem from bias in self-reports, having some teachers assessed higher/lower by the students can also result from an individual teacher's work or even their popularity among students.

In terms of gender and age differences, our data revealed that the girls perceived autonomy support higher, but we should mention that the difference was only slight and non-significant for the majority of behaviours. It was also evident that the perceived autonomy support dropped with age. Much has been said about the effects of growing age on lowering students' motivation for schoolwork (Stroet, Opdenakker & Minnaert, 2013), which may be showing in our data as well.

Due to the small sample size, the results of our study cannot be generalized. In spite of the limitations, we can still draw from the results of our research and suppose that, considering that almost all the teachers rated their autonomy levels higher than their students, perhaps a better knowledge of the concept of autonomy in the classroom might be required among the teachers in Slovenian elementary schools. Particularly when taking into account the fact that we measured autonomy support in four different subject areas. Previous research revealed that teachers trained in autonomy-supportive behaviours displayed significantly more autonomy support in their classroom than non-trained teachers (Reeve, Jang, Carrell, Jeon & Barch, 2004). Therefore, further research might focus on finding

out how equipped teachers are with autonomy supportive teaching methods and whether they find self-determination theory a relevant concept in their classrooms. In practical pedagogy, our results suggest that in spite of much research speaking in favour of boosting autonomy, teachers still seem to be unaware of the importance of self-regulated motivation in students and this should become a part of teacher education courses.

References

Benware, C. & Deci, E.L. (1984). The quality of learning with an active versus passive motivational set. *American Educational Research Journal, 21*, 755–766.

Black, A.E. & Deci, E.L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education, 84*, 740–756.

Deci, E.L., Schwartz, A.J., Sheinman, L., & Ryan, R.M. (1981). An instrument to assess adults' orientations toward control versus autonomy with children: Reflections on intrinsic motivation and perceived competence. *Journal of Educational Psychology, 73,* 642– 650.

Griner, D. (August, 2012). *Student Autonomy: A Case Study of Intrinsic Motivation in the Art Classroom*. Retrieved from http://contentdm.lib.byu.edu/cdm/ref/collection/ETD/id/3415

Grolnick, W.S. & Ryan, R.M. (1987). Autonomy in children's learning: An experimental and individual difference investigation. *Journal of Personality and Social Psychology, 52*, 890–898.

Grolnick, W.S., Kurowski, C.O., Dunlap, K.G. & Hevey, C. (2000). Parental resources and the transition to Junior High. *Journal of Research on Adolescence, 10*, 465–488.

Niemec, C.P., Lynch, M.F., Vansteenkiste, M., Bernstein, J., Deci, E.L. & Ryan, R.M. (2006). The antecedents and consequences of autonomous self-regulation for college: A self-determination theory perspective on socialization. *Journal of Adolescence, 29*, 761–755.

Reeve, J., Jang, H., Carrell, D., Jeon, S. & Barch, J. (2004). Enhancing students' engagement by increasing teachers' autonomy support. *Motivation and Emotion, 28,* 147-169.

Ryan, R.M. & Deci, E.L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25,* 54–67.

Stroet, K., Opdenakker, M.K. & Minnaert, A. (2013). Effects of need supportive teaching on early adolescents' motivation and engagement: A review of the literature. *Educational Research Review, 9*, 65–87.

Vansteenkiste, M., Lens, W. & Deci, E.L. (2006). Intrinsic versus extrinsic goal contents in self-determination theory: Another look at the quality of academic motivation. *Educational Psychologist, 41*, 19–31.