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Teacher Leadership within the Learning Co-creation with Students: School Administration Attitudes

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Abstract

Teacher leadership cannot be implemented without support from the school administration. This implies the need to identify preconditions that are related to the school administration support for teacher leadership and the implementation of it through learning co-creation with students. The aim of this study was to reveal the attitudes of the school administration towards teacher leadership in the context of learning co-creation with students. An Exploratory Factor Analysis with Varimax rotation was performed to determine whether the statements of the research tool based on the results could be assigned to the scales they contain according to the primary logic of the school administration leadership and learning co-creation model. The research findings manifested the following preconditions for school administration to support the teacher leadership within the learning co-creation between teachers and students: fostering teacher authority, trusting teacher competence, maintenance of mutual respect, maintenance of positive socio-emotional climate, and encouraging teachers to take responsibility students' learning.

Keywords: learning co-creation, school administration, school potential, student, teacher leadership, exploratory factor analysis

1. Introduction

Teacher leadership in empirical literature is defined differently and it shows that there is a rather limited consensus on how to define this concept. The lack of consonance exists due to the notion that teacher leadership is an umbrella term that covers a variety of teacher roles and characteristics that teachers assume in their daily practices at school. Whether a teacher-leader is leading formally or informally, s/he influences and contributes to improving teaching and learning, while performing various roles (Uribe-Flórez et al., 2015).

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Scholars provide research-based evidence on conditions that enhance teacher-leadership at school: maintenance of respect to teachers and mutual respect at school (Miller et al., 2008), supporting teacher authority at school (Esmaeili et al., 2015), trusting teacher competence (Nguyen et al., 2020), maintenance of positive socio-emotional climate in school (Cherkowski, 2018; Cheng et al., 2021), encouraging teachers to take responsibility for the quality of student learning (Consenza, 2015; Tschannen-Moran, Gareis, 2015), school potential to support teacher leadership (Henderson, 2008; Wiczorek, Lear, 2018), leadership values (Frost, 2008; Killion et al., 2016; Suhaila et al., 2018), leadership skills (Harrison, Killion, 2007; DeHart, 2011; Angelle, DeHart, 2016), school culture (Yusof et al., 2016; Turan, Bektas, 2013; Morris et al., 2019), school improvement (Moore-Steward, Whitney, 2000; Murphy, 2005; Smylie et al., 2005), working with others (York-Barr, Duke, 2004), leadership initiatives (Katzenmyere, Moller, 2001), teacher-student learning co-creation (Bergmark, Westman, 2014; Bovill et al., 2016; Bovill, 2019a, Bovill, 2019b; Potkin, 2019; Resh, 2019).

Teachers through leadership develop teaching and learning by modelling inclusion practices (Barry, 2013) with their students in classrooms (York-Barr, Duke, 2004). Thus, teacher leadership is connected to their self-confidence (Shimmer, 2014) and self-awareness (Von Dohlen, Karvonen, 2018) within the class and school, and it increases their commitment towards improving learning. And here the learning co-creation emerges as the purpose and/or context of teacher leadership within interactions with students in a classroom and beyond (Könings et al., 2020). Thus, teacher leadership as an influence on student learning and learning co-creation as a collaboration and partnership between teacher and students are interrelated factors and/or processes (Mora-Ruano et al., 2019).

Given these aspects, it becomes apparent that teacher leadership cannot be implemented without support from the school administration. This implies the need to identify preconditions that are related to the school administration support for teacher leadership and the implementation of it through carrying out of learning co-creation with students. Consequently, if the school administration supports teacher leadership, it also enhances teaching and learning (Gigante, Firestone, 2007). In this context, a research question arises that is relevant to the study: “What preconditions reflect the school administration support for teacher leadership within the learning co-creation between teachers and students?”

The aim of this study was to reveal the attitudes of the school administration towards teacher leadership in the context of learning co-creation with students.

Relationship between teacher leadership and learning co-creation with students at school

The term teacher leadership refers to that set of skills demonstrated by teachers who continue to teach students but also have an influence that within their own classrooms and beyond by engaging others in complex work. It entails mobilizing and energizing others with the goal of improving the school's performance of its critical responsibilities related to teaching and learning (Danielson, 2006) through co-creation.

Teacher leadership is the process by which teachers work collaboratively with the school community members to improve teaching practices that enrich the learning environment and lead to higher achieving classrooms. Teacher leaders may stay in the classroom where they feel they can make the greatest impact (Consenza, 2015). Teacher leadership is not necessarily about power, but about teachers extending their presence beyond the classroom by seeking additional challenges and growth opportunities, and sharing best practices, working with students (Stein, 2020) within the learning co-creation. Teacher leadership divides the work of teaching into four categories – collaborating, advocating, modelling, and providing resources (Cheung et al., 2018).

Descriptions of teacher leadership – both theoretical and empirical – are united by a key concept – the influence (York-Barr, Duke, 2004; Fairman, Mackenzie, 2015). However, the influence is not in itself an autonomous concept in teacher leadership practices. It is implemented in harmony with other concepts such as through mobilising, energising (Wilson, 2016), stimulating intellectually (Bolkan et al., 2011), expertise, engagement (Killion et al., 2016), collaboration, sharing best practices (Angelle, DeHart, 2016), taking action, role modelling (professional dispositions, positive character, mentoring students) (Consenza, 2015), implementing formal roles (traditionally appointed roles) (Rahim et al., 2020), transforming (Carrion, 2015), being a servant (Crippen, Willows, 2019), being authentic

(Bezzina, Bufalino, 2019), being persuasive (Killion et al., 2016), being purposive (Hunzicker, 2017), confronting obstacles (Johnson, Donaldson, 2007), and etc.

Thus, the teacher leader as an individual and expert, influences students as individuals and learners who strive to their learning outcomes (Carrion, 2015; Hunzicker, 2017). Thus, both parties – a teacher and students – are participants and actors of learning community within the school as multi-layered organisational structure and community (Bolkan et al., 2011; Wilson, 2016) and both sides are a part of the school mission of teaching and learning (Wieczorek, Lear, 2018). That means that concepts of interacting, togetherness, collaboration, cooperation, and partnership become crucial. These are key concepts in the co-creation of learning between the teacher leader and students in a classroom and beyond (Bovill, 2019).

Learning co-creation is “a collaborative, reciprocal process through which all participants have the opportunity to contribute equally, although not necessarily in the same ways, to curricular or pedagogical conceptualisation, decision making, implementation, investigation, or analysis” (Cook-Sather et al., 2014: 6-7). In learning co-creation students are partners with the teacher, learning and teaching are co-created through student engagement. This refers to a broad range of activities teachers as leaders in the profession and education, and schools as educational organisations, employ to motivate and interest students, as well as the time and effort students give to meaningful learning activities (Bovill, 2019b). This partnership in learning and teaching as the space in between student engagement and partnership, suggests a meaningful collaboration between teachers and students, where they are becoming more active participants in the learning and constructing understanding with each other (Ribes-Ginera et al., 2016). In learning co-creation implementation variables, such as communicative participation and satisfaction, interact (Cook-Sather, 2014). Leadership allows the teacher to connect with students in a significant co-creative way. Thus, teacher leadership within the learning co-creation with students at school means the teacher’s influence on students’ learning through partnership, cooperation, collaboration, collegiality, equality, and meaningful teaching and learning activities. The sources of meaning, most essential in the teaching and learning experiences, draw from the teacher’s yearning for connection with students. The teacher’s leadership can give meaning to students (Heifitz, Linsky, 2002).

2. Methodology

Sample

The data were collected between January 10, 2020, and June 30, 2020. The school administration staff involved in the study were selected using targeted and convenient selection sampling method(s). The total of 217 invitations to participate in research were sent by email to the targeted schools in the three largest cities (A – to 65 schools, B – to 30 schools, C – to 113 schools) of Lithuania. The questionnaires were completed in full by 137 respondents – administrative staff of schools:

- Age. Most respondents (24,8 %) were in 51-55 age group, 20,4 % in age from 56 to 60 years old, 17,5 % of participants were in age group from 41 to 45 years old, 15,3% in a group from 46 to 50 years old, and 13,9 % – in the group from 61 to 65 years old. In the age group under 25 years old the sample was represented by 1 person (0,7 %). There were no participants in the age group from 26 to 30 years old. The age group from 31 to 35 years old included 2,9 % (4) participants and 3,6 % (5) respondents represented the age group from 36 to 40 years old. In the group over 66 years old there were 1 employee (s) (0,7 %).

- Gender. The study participants’ distribution according to gender was the following: 21 (15,3 %) men and 116 (84,7 %) women.

- School type. The participants of the study represented various school types: gymnasiums (68,6 %), general schools (17,5 %), progymnasiums (7,3 %), primary schools (4,4 %), secondary schools (1,5%) and multifunctional centres (0,7 %).

- Employment status in the school administration. 50,4 % of the sample participants are school heads/principals, 49,6 % are deputy principals for education.

- Level of education. 24,1 % (33) of participants acquired a bachelor's degree, 74,5 % (102) of participants were with master's degree, and 2,5 % (2) participants were with PhD's. In addition, 96,4 % (132) of employees had pedagogical qualification and 3,6 % (5) participants had non-pedagogical education; all participants were educated at universities.

- Administrative work experience at school. Participants' administrative work experience varied from several months to 41 years, with an average of 16,4 years. (Standard deviation 8,9).

Methods

The software package SPSS 21.0 program was used to calculate internal consistency reliability coefficients (Cronbach's α) and perform Exploratory Factor Analysis.

Exploratory factor analysis: Assumes that any indicator or variable may be associated with any factor. This factor analysis is not based on any prior theory (Shapiro et al., 2002). Exploratory factor analysis is a statistical technique that is used to reduce data to a smaller set of summary variables and to explore the underlying theoretical structure of the phenomena. It is used to identify the structure of the relationship between the variable and the respondent. Exploratory factor analysis was performed by using the R-type factor analysis, when factors were calculated from the correlation matrix (Fabrigar et al., 1999).

Assumptions (conditions) for using exploratory factor analysis were met (Pett et al., 2003): i) no outlier: assumed that there are no outliers in data; ii) adequate sample size: the case was be greater than the factor; iii) no perfect multicollinearity: factor analysis is an interdependency technique; there should not be perfect multicollinearity between the variables; iv) homoscedasticity: since factor analysis is a linear function of measured variables, it does not require homoscedasticity between the variables; v) linearity: factor analysis is based on linearity assumption; non-linear variables can also be used; after transfer, however, it changes into linear variable; vi) interval data: interval data are assumed; vii) no extreme outliers should be detected, i.e., values higher or lower than three SDs from the mean were not found.

The resulting initial factor weight matrix does not unambiguously describe the solution (the same variable can be related to several factors of at least 0.4 weights) (Fornell, Larcker, 1981). In order to facilitate the differentiation of factors and give them an easier-to-interpret form, linear combinations of the obtained factors are formed, which do not correlate with each other. The purpose of this procedure for determining combinations of factors, called rotation, is to simplify the structure of the matrix of factor weights, to achieve that each variable has only a few non-zero factor weights (Watkins, 2018). The most popular of the rotations is the Varimax method, which was used in this study. As a rule of thumb, the variable should have a rotated factor loading of at least 0,4 (meaning $\geq +0,4$ or $\leq -0,4$) onto one of the factors in order to be considered important (Watkins, 2018; Pohlmann, 2004). Therefore, for factor analysis while working with SPSS, the value of was set to absolute value, which corresponds to 0.4 score on the standardized loading factor score. The study followed the rule that each factor should have at least three variables with high loadings (Fornell, Larcker, 1981). In our research every factor consists of more than three variables.

An Exploratory Factor Analysis with Varimax rotation was performed to determine whether the statements of the research tool based on the results could be assigned to the scales they contain according to the primary logic of the school administration leadership and learning co-creation model. The analysis revealed that 5 instrument factors explain 31 % variances of variables (KMO = 0,754, Bartlett criterion $p = 0.000$). Principal Components Analysis was used as extraction method. Principal components analysis method makes the assumption that there is no unique variance, the total variance is equal to common variance. Recall that variance can be partitioned into common and unique variance. If there is no unique variance then common variance takes up total variance. Additionally, if the total variance is 1, then the common variance is equal to the communality (Hutcheson, Sofroniou, 1999).

Varimax with Kaiser Normalization as rotation method was applied. Rotation converged in 9 iterations. 78 (with factor weights over 0,4) of the 91 statements fell into the 5 factor analysis factors. The remaining 13 statements with factor weights of less than 0,4 in all 5 factors were not included in the further analysis.

The internal consistency of instrument statements coefficients (Cronbach's α) was calculated. Based on the sample data, the internal consistency (Cronbach's α) coefficients of the statements of all 5 study factors were calculated (see Table 1). It shows, how closely is related a set of items that are as a group in every factor. The results show that the values are high, exceeding the value of 0,7, so the data are reliable.

Table 1. School administration attitudes towards teacher leadership within the learning co-creation in a classroom and beyond: internal consistency reliability coefficients and percent of variance explained

Factor	Cronbach α	% of variance explained
F1: Supporting teacher authority at school	0,906	62,40 %
F2: Trusting teacher competence within the teacher-student interactions in a classroom and beyond	0,911	76,96 %
F3: Maintenance of mutual respect in school culture	0,897	63,32 %
F4: Maintenance of positive socio-emotional climate within the teaching and learning at school	0,841	75,82 %
F5: Encouraging teachers to take responsibility for the quality of student learning	0,730	75,46 %

The tool

An original questionnaire “School administration attitudes towards teacher leadership within the learning co-creation with students” (Zydzianaite et al., 2019: n. p) was used in the survey.

The questionnaire was based on the following constructs: i) a construct of teacher leadership, developed from Models of Teacher Leadership (Angelle, DeHart, 2016; Suhaila et al., 2018), Teacher Leader Model Standards (Consenza, 2015), Four Frameworks of Teacher Leadership (DeHart, 2011); ii) a construct of co-creation in teaching and learning (Bovill, 2019a, Bovill, 2019b; Bovill et al., 2015; Resh, 2019; Willis, Gregory, 2016); iii) a construct of teacher leadership for school improvement (Moore-Steward, Whitney, 2000; Murphy, 2005; Smylie et al., 2005; Wieczorek, Lear, 2018); iv) a construct of teacher leadership capacity and school culture (Turan, Bektas, 2013; Yusof et al., 2016; Morris et al., 2019); v) a construct of co-creating curriculum (Bergmark, Westman, 2014; Potkin, 2019).

The tool consisted of two parts – demographic and content. Both parts of questionnaire were composed of closed-ended statements and questions of the content part included matrix-type questions. Every separate matrix with items/statements represented content variables (in total nine content variables with 91 item/statement). Items were assessed on scales, such as “yes, for sure”, “yes”, “neither yes nor no”, “no”, “no, for sure”.

In the demographic part six questions, representing six variables were presented: age, gender, level of education, type of school, administrative work experience at school, employment status in the school administration (principal or deputy principal). In the demographic part, multiple-choice questions were presented, and respondents could choose only one of the presented answer options in every question. The content part consisted of nine variables: working with others (teachers, parents) at school (6 items/statements); the school improvement (4 items/statements); the school culture (6 items/statements); the school potential to support teacher leadership (29 items/statements); applied leadership skills (12 items/statements); leadership values (9 items/statements); leadership of initiatives (10 items/statements); trends of co-learning (7 items/statements); teacher-student co-creation (9 items/statements).

Study limitations

The sample of respondents was not random (respondents were selected using targeted and convenient selection sampling method), therefore, data cannot be generalized for the entire school administration staff population.

The mean values and standard deviations of the variables are not indicated in the article, which makes the conclusions of the study insufficiently substantiated and reliable.

3. Results

Research findings manifested the following preconditions for the school administration to support the teacher leadership within the learning co-creation between teachers and students: fostering teacher authority, trusting teacher competence, maintaining mutual respect, maintaining positive socio-emotional climate, and encouraging teachers to take responsibility students' learning.

F1: The fostering teacher authority at school factor F1 incorporates 28 statements that relate to the following indicators: school potential to support teacher leadership (7 statements), applied leadership skills (7), working with others at school (5), school culture (3), school improvement (3), leadership values (2), leadership of initiatives (1). The number of statements representing the indicator in the factor F1, and the factor weights of these statements suggest that the school's potential to support teacher leadership, the leadership skills applied by the school administration, and working with others are the leading elements contributing to maintaining teacher authority in the school. Collaboration, listening and understanding, mutual help, shared problem solving, openness, diversity of opinion, trust, care, feedback, recognition are the predominant concepts in factor statements regarding the school administration attitudes towards teacher leadership at school.

Table 2. F1: Fostering teacher authority at school

Statements	Factorial weight
1. It is more important for the school administration to work with teachers than to compete (indicator: school potential to support teacher leadership)	,684
2. The school administration listens and strives to understand the needs and attitudes of teachers (indicator: leadership values)	,666
3. The school administration is respectful to the teachers (indicator: school potential to support teacher leadership)	,647
4. The school administration is respectful to the students (indicator: school potential to support teacher leadership)	,628
5. The school administration discusses the problems with the teachers and at the same time discusses their possible solutions (indicator: applied leadership skills)	,621
6. The school administration respects the opinions of the teacher (indicator: school culture)	,620
7. It is safe at the school to openly oppose the school administration in meetings and /or appointments (indicator: school culture)	,612
8. The school administration cares about teachers' problems, so their complaints are listened to carefully (indicator: applied leadership skills)	,594
9. The school administration takes the view that the teaching activities carried out by the teacher in the classroom contribute to the improvement of the school (indicator: school improvement)	,589
10. The school administration supports teachers who improve the school (indicator: working with others at school)	,577
11. To achieve the goal of the school, the school administration advises teachers on the improvement of their education (indicator: school improvement)	,570
12. The school administration collaborates with teachers when it comes to solving problems (indicator: working with others at school)	,559
13. The school administration cares about the students' problems, so they listen carefully to their complaints (indicator: applied leadership skills)	,547
14. The school administration follows the attitude that teacher cooperation has an impact on educational practices at the school (indicator: school potential to support teacher leadership)	,534

15. The school supports the professional development of teachers (indicator: school potential to support teacher leadership)	,510
16. The school administration encourages teachers to work together as a team to solve problems (indicator: applied leadership skills)	,506
17. The school administration has a good relationship with the students (indicator: applied leadership skills)	,504
18. Every teacher is respected in the school (indicator: school potential to support teacher leadership)	,499
19. The students respect school administration (indicator: applied leadership skills)	,487
20. The school creates an atmosphere of caring for each other (indicator: applied leadership skills)	,482
21. The school administration builds trust and openness in communication with teachers (indicator: leadership of initiatives)	,479
22. The school administration collaborates with teachers striving to share responsibility for students' learning success (indicator: leadership values)	,473
23. The school encourages teachers to work together by giving them mutual help and / or support (indicator: working with others at school)	,470
24. The school administration boldly asks teachers for help or advice in solving specific problems in the educational process (indicator: working with others at school)	,448
25. At school, it is safe for teachers to openly oppose each other in meetings and / or meetings (indicator: school culture)	,442
26. Teachers at the school can provide feedback to each other (indicator: school potential to support teacher leadership)	,434
27. The school administration is committed to playing an important role in building a professional community in the school (indicator: school improvement)	,425
28. Where possible, school administration increases parental involvement in school change and improvement (indicator: working with others at school)	,401

F2: The trusting teacher competence at school factor F2 includes 20 statements that relate to five indicators: leadership of initiatives (7), teacher-student learning co-creation (5), school potential to support teacher leadership (3), leadership values (3), learning co-creation trends (2). The number of statements representing the indicator in the factor F2, and the factor weights of these statements manifest that the leadership of initiatives and teacher-student learning co-creation are core elements which are related to the trust of teacher competence within the teacher-student interactions. Communication transparency and clarity, planning and coordinating teaching /learning interventions, students' learning achievements, reflecting, learning atmosphere, cooperation/collaboration, feedback, assessment/evaluation, engagement/inclusion, decision-making, and educational effectiveness emerge as essential concepts in factor content and manifest school administration attitudes towards teacher leadership at school.

Table 3. F2: Trusting teacher competence at school

Statements	Factorial weight
1. The school administration takes the position that when working with students, teachers must state their expectations clearly, describe learning activities and argue why they will be done in class (indicator: teacher-student learning co-creation)	,631
2. The school administration supports the idea that teachers must plan and coordinate their educational interventions based on students' learning achievements. (indicator: leadership of initiatives)	,618
3. Teachers at school are involved in professional development decision-making (indicator: school potential to support teacher leadership)	,613

4. The school administration takes the view that teachers should encourage students to anticipate and manage their personal learning goals when working with them (indicator: teacher-student learning co-creation)	,611
5. The school administration analyses and reflects on student achievement data according to the goals pursued by the school (indicator: leadership of initiatives)	,609
6. The school administration analyses the context and sets educational / learning priorities (indicator: leadership of initiatives)	,594
7. The school administration takes the view that teachers must create an atmosphere in which students with higher and lower levels of learning achieve collaboration (indicator: teacher-student learning co-creation)	,581
8. The school administration takes the view that in each lesson students should be given the opportunity to reflect on the teaching / learning methods used and how they helped them to learn (indicator: learning co-creation trends)	,565
9. The school administration adapts clear measurements and instruments to monitor student learning progress (indicator: leadership of initiatives)	,537
10. School administration initiates meetings with teachers and parents for better student achievement (indicator: leadership of initiatives)	,509
11. The school administration takes the view that when working with students, they should involve students in joint decision-making (indicator: learning co-creation trends)	,507
12. The school encourages teacher collaboration in curriculum development (indicator: school potential to support teacher leadership)	,507
13. The school administration is adapting clear measurements and instruments to monitor the effectiveness of teacher education (indicator: leadership of initiatives)	,484
14. The school administration team systematically provides feedback to teachers (indicator: leadership values)	,479
15. The school administration takes the view that the interaction of students in their group learning contributes to their learning achievement (indicator: teacher-student learning co-creation)	,476
16. Teachers at school are involved in decision-making on pupil assessment (indicator: school potential to support teacher leadership)	,468
17. The school administration team systematically asks for feedback from the teacher (indicator: leadership values)	,436
18. The school prioritizes the needs of the student (indicator: leadership values)	,434
19. The school administration encourages teachers to respectfully share personal and professional stories with the school community (indicator: leadership of initiatives)	,424
20. The school administration is committed to providing teachers with a summary of the feedback in each lesson (indicator: teacher-student learning co-creation)	,417

F3: Maintaining mutual respect at school factor F3 includes 15 statements that relate to two indicators: school potential to support teacher leadership (14) and applied leadership skills (1). In the factor F3 the leading indicator is the school potential to support teacher leadership, which is the prerequisite to maintain the mutual respect at school. Respect, loyalty, trust, help and support, responsibility, professionalism, volunteering/free will, discussing, personal values and solidarity/unity are cornerstone concepts in factor statements, which express the school administration attitudes towards teacher leadership at school.

Table 4. F3: Maintaining mutual respect at school

<i>Statements</i>	Factorial weight
1. School teachers respect students 'parents (indicator: school potential to support teacher leadership)	,741
2. Teachers are loyal to the values of the school (indicator: school potential to	,723

support teacher leadership)	
3. School teachers trust the school administration (indicator: school potential to support teacher leadership)	,720
4. School teachers are trusted professionals (indicator: school potential to support teacher leadership)	,719
5. School teachers respect each other (indicator: school potential to support teacher leadership)	,695
6. School teachers respect students (indicator: school potential to support teacher leadership)	,672
7. School students help each other (indicator: school potential to support teacher leadership)	,623
8. At school, teachers feel respect for their parents (indicator: school potential to support teacher leadership)	,598
9. School teachers are responsible professionals (indicator: school potential to support teacher leadership)	,579
10. School teachers voluntarily devote extra time and attention to students with special educational needs (indicator: school potential to support teacher leadership)	,537
11. At school, teachers openly discuss personal values and expectations related to education with fellow teachers (indicator: school potential to support teacher leadership)	,517
12. At school, teachers feel respect for the student (indicator: school potential to support teacher leadership)	,515
13. The school administration and teachers have a unified vision for the school (indicator: school potential to support teacher leadership)	,472
14. Young teacher mentoring is the responsibility of every experienced schoolteacher (indicator: school potential to support teacher leadership)	,416
15. For teachers, school administration advice is important (indicator: applied leadership skills)	,409

F4: Maintaining positive socio-emotional climate at school factor F4 integrates 13 statements, which are connected to six indicators: teacher-student learning co-creation (4), learning co-creation trends (4), applied leadership skills (2), school improvement (1), school culture (1), leadership of initiatives (1). In the factor F4 co-creation and leadership are elements, which create opportunities to maintain positive socio-emotional climate at school.

The school administration attitudes towards teacher leadership at school is manifested through learning achievements/goals, communication, feedback, encouragement, emotions, motivation, collaboration, decision-making, attitudes are notions that manifest to essence of factor's F4 statements' content.

Table 5. F4: Maintaining positive socio-emotional climate at school

Statements	Factorial weight
1. The school administration takes the view that positive emotions in the student are a primary component as they encourage students to learn and create (indicator: learning co-creation trends)	,736
2. The school administration takes the view that teachers should pay attention to their emotions and motivation when working with students (indicator: teacher-student learning co-creation)	,671
3. The school administration takes the view that when working with students, teachers must maintain a balance between emotions and thinking, so lessons should be based on problem solving and discussion of student ideas (indicator: learning co-creation trends)	,669

4. The school administration takes the view that teachers must apply collaborative, research-based learning in every lesson (indicator: teacher-student learning co-creation)	,621
5. The school administration takes the view that students' positive expectations about personal learning are the basis for their learning achievements and self-confidence (indicator: teacher-student learning co-creation)	,620
6. The school administration takes the view that in classes, working with students is determined by the context, the ideas and questions of the students, and the discoveries of what they do not know (indicator: learning co-creation trends)	,576
7. When teachers solve problems, the school administration encourages them to look for different solutions (indicator: applied leadership skills)	,552
8. The school administration clearly communicates the vision of success to students and teachers (indicator: leadership of initiatives)	,482
9. The school administration takes the view that teacher education activities contribute to the success of all students in the school (indicator: school improvement)	,475
10. When teachers solve problems, the school administration encourages them to look at the problems based on different attitudes (indicator: applied leadership skills)	,462
11. The school administration is committed to providing students with feedback at the end of each lesson on what has contributed to their personal growth and development (indicator: teacher-student learning co-creation)	,454
12. The school administration takes the position that in the classroom students define learning goals, plan, and organize their own learning (indicator: learning co-creation trends)	,446
13. The school administration takes the view that the most important factor in student achievement is the teacher's relationship with them (indicator: school culture)	,425

F5: Encouraging teachers to take responsibility for student's learning factor F5 consists of five statements that relate to four indicators: applied leadership skills (2), leadership values (1), school culture (1) and school potential to support teacher leadership (1). There is no leading indicator, but the main trend is oriented towards leadership, which is represented by two leadership-related indicators. Encouragement, recognition, innovation, learning, educational outcomes are concepts, which express the core aspects of statements of the factor F5. These concepts show the school administration attitudes towards teacher leadership at school.

Table 6. F5: Encouraging teachers to take responsibility for students' learning

Statements	Factorial weight
1. The school administration expresses high expectations for teachers about their work (indicator: applied leadership skills)	,636
2. The school administration expresses high expectations for students about their learning (indicator: applied leadership skills)	,627
3. The school administration takes the position that the teacher is responsible for the (un)success of students' learning in the classroom (indicator: school culture)	,556
4. The school administration encourages teachers to take responsibility for educational outcomes (indicator: leadership values)	,471
5. School teachers are recognized as innovators in the classroom regardless of their (un)success (indicator: school potential to support teacher leadership)	,416

4. Discussion

The school administration expresses support to teacher leadership within the learning co-creation with students, when the teacher's authority is fostered, teacher's competence is trusted, mutual respect and positive socio-emotional climate is maintained, and teachers are encouraged to take responsibility for the student learning.

The research provides evidence that school administration takes the attitude that fostering teacher authority in school culture contributes to the implementation of teacher leadership within the learning co-creation with students, when teachers' leadership skills and leadership values are applied, and leadership initiatives of teachers are not denied. This requires from teachers to collaborate with others (students, colleagues, students' family member and school administration) in school. These components contribute to the strengthening of teacher authority at school. Teacher's leadership in the classroom needs to be supported by the authority to be able to accomplish tasks regarding learning co-creation with students (Pace, Hemmings, 2007). Teacher's authority is inseparable of high level of special knowledge and skills, and ability to develop this knowledge and skills for students. The teacher role encompasses certain legislative authority, which means that the teacher has the power of decision-making regarding the implementation of learning co-creation with students in a classroom (Esmaeili et al., 2015).

Findings of the research revealed that school administration views the trust to teacher competence as a part of the school culture, which indicates the school potential to support teacher leadership at school. Building the school culture of trust is an intentional act that brings benefit to principals, teachers, and students. The simple and yet a significant act is that the school administration needs to communicate with teachers by expressing their trust in teachers' professionalism (Lasater, 2016). Teachers who are trusted take risks and collaborate with their colleagues and they work longer hours (Modoono, 2017). When teachers are trusted at school, they create a collaboration-based teaching and learning culture (Hong et al., 2020). This is an important aspect in teacher leadership within the learning co-creation with students.

The research-based evidence showed that the school administration supports the maintenance of mutual respect in school, and this manifests the school potential to support teacher leadership and applied leadership skills by teachers within the mutual respect-based school climate. Respect as a part of school climate and component of relationships in school community creates the atmosphere of safety in which connectedness, engagement, social support, and leadership are components of the school potential to support the teacher leadership at school (Kutsyuruba et al., 2015). When teachers are respected for their own teaching capabilities by the school community and especially by the school administration and fellow teachers, they display optimism about teaching and learning, what is at edge in teacher's leadership within the learning co-creation with students (Lee-Piggot, 2014). When teachers experience respect in the school culture, they respect students and believe in their intellectual abilities (Harris, 2003).

The research results disclosed that school administration takes the attitude that maintenance of positive socio-emotional climate within the teaching and learning at school supports teacher-student learning co-creation and provides possibilities to apply leadership skills for teachers. Harvey et al. (2016) accentuates teacher's responsibility for professional development and improvement of socio-emotional skills. Researchers provide evidence that teachers who improve their emotional practices, are recognised as leaders at schools by school administration, fellow teachers, and students. These teachers created atmosphere of helpfulness, friendliness, understanding, student responsibility and freedom, student admonishing and strictness in a classroom, what is a part of learning co-creation with students (ibid).

The research findings uncovered the school administration attitudes towards teacher leadership at school: they relate it to encouragement of teachers to take responsibility for the quality of student learning and see it as a part of school culture in which the school potential to support teacher leadership is incorporated. Such findings are both – inconsistent and consistent with empirical evidence of other researchers on student learning responsibilities. According to Haberman (1996), teachers are not responsible for their students' learning. But Cook-Sather (2010) stresses that teachers' responsibility is to create the opportunity for learning by influencing, encouraging, and enriching students. To be responsible is to act based on one's sense of connection and answerability to the self and to others. Students are responsible for both more fully engaging in and transforming learning. Students who acting on their interest in taking responsibility for their

learning quality and achievements, they contribute to the transformation of their own and other's learning, and they help to redefine their accountability within the teaching-learning context (Tucker, Stronge, 2005). This means that learning is a teacher-student co-creation in which the teacher puts his/her leadership skills and competencies into practice by involving students in a responsible and self-accountable way, i. e. conscious learning.

5. Conclusion

School administration attitudes towards the teacher leadership within the learning co-creation with students disclose five factors of school potential to support the teacher leadership: fostering teacher authority, trusting teacher competence, maintaining mutual respect, maintaining positive socio-emotional climate at school, and encouraging teachers to take responsibility for student's learning. These factors are connected to school culture in which leadership values, initiatives and skills are empowered, working with others through engagement, collaboration and cooperation in teaching and learning is developed. Trust, care, feedback, inclusion, support, encouragement, professionalism, and recognition are leading concepts in school administration attitudes towards the teacher leadership within the learning co-creation with students in a classroom and beyond.

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