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Teachers' Creative Self-Efficacy, Self-Esteem, and Creative Teaching in Estonia: a Framework for Understanding Teachers' Creativity-Supportive Behaviour

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ABSTRACT

Context. Teachers' creative self-efficacy (CSE), or personal beliefs about one's own abilities to recognize and produce creative outcomes, is believed to be one of the factors that support creativity in the classroom and is connected to general self-esteem.

Objectives and design. In the present paper, two studies were conducted to map Estonian teachers' CSE and the factors, beliefs and attitudes towards creativity that are related to it, as well as how teachers transfer their CSE into their everyday activities in the classroom. In the first study, Estonian adaptation of Rubenstein et al. (2013) Teaching for Creativity Scales and Rosenberg Self-Esteem Scale (Pullmann & Allik, 2000) were used. The second study was based on a qualitative analysis, using in-service teachers' self-reports focusing on their teaching practices.

Main outcomes. As a result of both studies, a framework for understanding teachers' CSE is proposed, where self-esteem and perceived societal value of creativity are associated with the manifestation of CSE in the classroom, which in turn transfers into enhancing creativity through teaching for creativity and creative teaching.

INTRODUCTION

Creativity in the school environment

Creativity is considered a process that strengthens mind skills in a way that leads to bringing about a completely new approach; creativity is not only originality but also effectiveness (Runco & Jaegaer, 2012). Plucker, Beghetto, and Dow (2004, p. 90) define creativity as "the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as de-

fined within a social context," thus adding an important aspect of social acceptability and environmental context.

Schools play an important role in enhancing creative thinking and teachers are expected to promote it in their classroom activities. Teachers' beliefs about teaching and learning processes affect them in fostering a creative climate in the classroom, thus paving the way for creative teaching. Therefore, as Mullet, Willerson, Lamb, and Kettler (2016) point out, whenever teachers have misconceptions regarding creativity, they can not effectively promote it in their students, and in the worst case scenarios, they even suppress their students' creative potential, though unintentionally. Despite decades of empirical research and many theoretical works on the subject of creativity, still, accuracy of how teachers evaluate and assess their students' creativity is alarmingly low - according to Urhahne (2011), just 58.2% of teachers assess their students' creativity accurately. Such a dramatic result (only slightly better than 50:50 chances of coins toss) may be attributed to many factors that affect teachers' recognition, definition, and nurturing creativity of their students. Among other factors, we note teachers' implicit views on creativity (Plucker et al, 2004), mindset towards creativity (Karwowski, 2014), understanding the concept of creativity in general (Andiliou & Murphy, 2010), even students' gender (Gralewski & Karwowski, 2016). As Hartley, Plucker, and Long (2016) found, there are significant differences between students' self-ratings and teachers' ratings for creative expressions, meaning that the understanding of how creativity looks like in science is fundamentally different between these two groups. One way to bridge what Makel (2009) called a "creativity gap" between acceptance and value of creativity in society and its absence in the educational system, is to promote creative teaching in schools.

Creative teaching

According to Jeffrey (2006), relevance of the subject to the immediate needs of students, ownership of the knowledge as internalized process, control of learning process that is given to students, and innovation as an outcome of the learning process are key characteristics of creative teaching.

Jeffrey and Craft (2004) stress that creative teaching covers both teaching creatively (that is, using unorthodox methods to engage students) and teaching for creativity (that is, teaching skills how to use students' creative potential). Similarly, Beghetto (2017) points out that creative teaching consists of three interconnected components: teaching *about* creativity, teaching *for* creativity, and teaching *with* creativity. Teaching about creativity is aimed at increasing knowledge about creativity, and the field of creativity studies; teaching for creativity is aimed at cultivating creative thinking and creative actions in students; finally, teaching with creativity is aimed at teaching any subject matter creatively.

Lin (2011) uses the term creative pedagogy, which, in addition to teaching for creativity and creative teaching, also includes creative learning. A supportive climate for developing creative abilities and qualities of students is created through the interaction between inventive and effective teaching (by a creative facilitator), and creative learning (by an active learner). Creative teaching and teaching for creativity have different foci; they are interconnected and indispensable in the classroom context. Teaching for creativity requires teaching creatively.

The National Advisory Committee for Creativity and Cultural Education report (NACCCE, 1999), made a distinction between teaching creatively and teaching for creativity: the former is defined as "using imaginative approaches to make learning more interesting and effective" (NACCE, 1999, p. 89), whereas teaching for creativity has the objective of "identifying young people's creative abilities, as well as encouraging and providing opportunities for the development of those capacities" (Jeffrey & Craft, 2004, p. 81).

The creative teaching framework was developed by Schacter, Thum, and Zifkin (2006). According to the authors (Schacter et al., 2006), teachers can promote students' creativity by (a) explicitly teaching creative thinking strategies, (b) providing opportunities for choice and discovery, (c) encouraging intrinsic motivation, (d) establishing a learning environment conducive to creativity, and (e) providing opportunities for imagination and fantasy.

Based on the review of literature regarding teachers' beliefs about creativity and creative teaching (e.g., Berezcki & Kárpáti, 2018; Dilekli & Tezci, 2016; Jeffrey, 2006; Lilly & Bramwell-Rejskind, 2004), we use the following characteristics and factors (among others) to describe creative teaching for purposes of the current paper: making learning more interesting, encouraging divergent thinking and offering students opportunities to create, promoting active learning, encouraging collaboration, empowering students to take ownership of their learning process, passing control over learning to students, emphasizing relevance and innovation of the learning process, building connection between teachers' and students' self-awareness and learning, involvement in reflecting teaching, preference for student-centered teaching styles, and certain personal and behavioral factors, among many others.

Sawyer (2004) proposed that creative teaching is better conceived of as improvisational performance. It emphasizes the interactional and responsive creativity of a teacher working together with a unique group of students. Teachers are knowledgeable and expert professionals and are granted creative autonomy to improvise in their classrooms.

Teachers' creative self-efficacy and self-esteem in relation to creativity

Both teaching for creativity and creative teaching can happen only if certain personal characteristics, including creative self-efficacy and self-esteem, are sufficiently developed, promoted and supported in the school settings.

Creative self-efficacy (CSE) is the self-view "that one has the ability to produce creative outcomes" (Tierney, & Farmer, 2002, p. 1138). In other words, it is one's self-esteem for personal creative abilities, skills, and competences to come up with unusual solutions and behaviors (Beghetto, 2006; Beghetto, Kaufman, & Baxter, 2011). CSE is directed towards future performance, and it describes perceived confidence to creatively perform the given task (Beghetto & Karwowski, 2017). According to Beghetto, Kaufman, and Baxter (2011), CSE is an especially efficient way to measure or describe mini-c creativity (i.e. novel interpretation of experiences, actions, and expressions that have personal meaning to oneself). Several studies indicated positive relationship between CSE, creative self-perception, and teaching styles that promote creativity, with effects that lasted over time (Aljughaiman & Mowrer-Reynolds, 2005; Cayirdag, 2017; Delikli & Tezci, 2016; Karwowski, 2011; Ozkal, 2014; Tierney & Farmer, 2002; Tierney & Farmer, 2011). Even more so, there is strong evidence that CSE is positively influencing a person's actual creativity (Kharkurin, 2017). This indicates, that teachers' beliefs about their creativity influence classroom practices and the value they place on creativity (Rubenstein, McCoach, & Siegle, 2013; Sak, 2004). While the role of CSE in positively affecting teachers' creative fostering behavior is generally accepted, it is important to describe other specific factors, attitudes, and beliefs that may have influence over CSE and thus help boost the creative expression of students in educational settings. The high aspect of subjectivity has been described in earlier studies. For instance, Aljughaiman and Mowrer-Reynolds (2005) demonstrated that teachers tend to rely more heavily on informal observations and adopted opinions (including other teachers') when assessing students' creativity, rather than on validated psychometric instruments.

Based on teachers' implicit views on creativity, students' creative potential and abilities might go unnoticed - simply because teachers themselves do not recognize it or have misconceptions about it (Gralewski & Karwowski, 2016). Rubenstein, McCoach, and Siegle (2013) described the following factors that are correlated to CSE of teachers through the effect of teaching for creativity: general teacher self-efficacy, belief in environmental support, belief in societal support/value, and belief in students' potential (see further in Method for Study 1). Thus, by positively reinforcing these factors we might be able to increase teachers' own belief in their ability to recognize, interpret, and support the cre-

ativity of their students. Huang, Lee and Yang (2019) found that teachers' self-report of their creative behavior, as well as perceived school expectations, had a positive effect on teachers' CSE, both product-oriented (i.e. belief that one can produce creative outcome) and process-oriented (i.e. belief that one can facilitate creative thinking process). Different studies have shown that CSE and a person's creative self-identity have mutual, reciprocal influence, whereas among young people this link is stronger (Karwowski, 2016; Karwowski & Barbot, 2016; Tierney & Farmer, 2011).

In addition to CSE, Cayirdag (2017) proposed that teachers who cultivate creativity among their students take personal responsibility to foster students' creativity and to teach creatively. Furthermore, Michael, Hou, and Fan (2011) found that a high level of creative self-efficacy is associated with a high level of innovative behavior at work. As Beghetto and Karwowski (2017) suggested, CSE is linked more to cognitive orientation (i.e. a person's perception of personal ability to successfully perform a certain task creatively).

Craft (2000, 2001) has proposed a characteristic called "possibility thinking" in regards to little c creativity (i.e. one that takes place in the classroom). This "possibility thinking" is aimed at asking "what if" in every situation facing blockage or hindrance, and it includes nine qualities, such as risk, being imaginative, posing questions, play, etc. Moreover, teachers' personal and behavioral factors are seen as key to promote creativity in the classroom (Horng, Hong, ChanLin, Chang, & Chu, 2005; Rubenstein, Ridgley, Callan, Karami, & Ehlinger, 2018).

Intrinsic motivation and optimism about one's work are also a prerequisite for a teacher's self-efficacy. In the school context, optimism is divided into two: general - the tendency to believe that life offers good experiences and bad things to avoid, and academic optimism - the belief of all school staff that everyone can get positive results even when things are difficult (Beard, 2010). As for optimism, Rubenstein with colleagues (2018) pointed out the connection between teachers' belief in their professional environment as either a possibility for creative outcomes (in this case, teachers promote creativity), or as an obstacle (in which case they act as a hindrance for creativity).

General self-esteem is described as a person's overall evaluation of personal worthiness as a human being (Rosenberg, 1979; Rosenberg, Schooler, Schoenbach, & Rosenbeg 1995). Researches have demonstrated positive correlation between self-esteem and creativity (Cantero, Alfonso-Benlliure & Melero, 2016; Deng & Zhang, 2011; Goldsmith & Matherly, 1988). High self-esteem individuals tend to believe themselves to be capable and worthy; they are more willing to share creative ideas (Thatcher & Brown, 2010).

Wang and Wang's (2016) study supports that self-esteem is beneficial to creativity. High self-esteem can strengthen the positive prediction of interdependent self-construal on creativity. In other words, among individuals with high self-esteem, interdependent self -construal has a beneficial effect on creativity. Self-esteem and creativity likely have a reciprocal relationship: good self-image can help children succeed in the face of uncertainty, risk, or ambiguity, and creative skills can lead one to a more positive view of certain aspects of oneself (Cantero, Alfonso-Benlliure, & Melero, 2016). Self-esteem might regulate the positive effect of multidimensional perfectionism on creative thinking (Chien-Chih et al., 2019).

General self-esteem has a similar effect on general human behavior, as does CSE on the creative behavior. Therefore, it is safe to assume that by providing positive support for teachers' self-confidence, boosting their general self-esteem, it is possible to build a stronger teachers CSE, which would in turn translate positively into students' creative behaviors.

THE PRESENT STUDIES

As Estonian students perform very well in international academic competitions, such as PISA 2018 (OECD, 2019a), a closer look is necessary at teachers who support the development of their students. It is important, on the one hand, to understand beliefs, attitudes, and levels of their self-efficacy - whether these inner resources are sufficient to keep Estonian students on a competitive level internationally. On the other hand, it is crucial to talk about and listen to teachers' subjective and personally meaningful interpretations of CSE and factors that influence their ability and readiness to support creativity in the classroom. While self-efficacy measures of Estonian teachers have increased during the last 5 years, their understanding that a teacher's profession is valued in society is alarmingly low: only 23% of those who have been in the profession for 5 or more years believe that the society values their job (OECD, 2019b). By providing examples and descriptions of their everyday practices to support their students' creativity, we can get useful insights into how society and school administration can utilize the maximum potential of teachers. Hence the combination of two studies, qualitative and quantitative, both linked by the same topic, yet focusing on different aspects of it, was conducted to investigate Estonian teachers' creative self-efficacy, its connections with their self-esteem, and how teachers' self-beliefs and attitudes towards creativity take the form of teaching for creativity.

Study 1 adopted Teaching for Creativity Scales (Rubenstein et al., 2013) to Estonian use, and focused on investigating components of teaching for creativity, teachers' CSE, and finding links between self-esteem as a general socio-psychological phenomenon and creative self-efficacy, which is more linked to a specific field of human activities. At the same time, Study 2 focused on personal understanding and views on teaching for

creativity and creative teaching among in-service teachers, to describe the meaning of teaching for creativity as an outcome or visible representation of their beliefs about creativity. As both studies were independent, conducted by authors among different samples, yet investigating different aspects of the same phenomenon, a mixed method framework was adapted. Triangulation design, as one of the most common approaches to mixed-methods research (Creswell, Plano Clark, Gutmann & Hanson, 2003) was applied: both studies were conducted during the same timeframe and the weight of the results was equal. This is in line with Morse's (1991, p. 122) description of the purpose of such an approach: "to obtain different but complementary data on the same topic" in order to gather better understanding of the research topic. We attempted to merge both studies' data sets by bringing them together and interpreting as one phenomenon.

The design and results of each study are presented separately, whereas discussion and conclusions are combined.

Study 1: Estonian teachers' creative self-efficacy and self-esteem

The aims of this study were as follows: 1) to adapt Teaching for Creativity Scales (Rubenstein et al., 2013) for Estonian teachers; 2) to gather insight on self-efficacy among Estonian teachers; and 3) to investigate links between creative self-efficacy and general self-esteem of Estonian teachers. The following were our main research questions: 1) what aspects of teaching for creativity are more significant to Estonian teachers, in comparison to their U.S. colleagues; 2) which aspects of teaching for creativity has connections with Estonian teachers' creative self-efficacy; and 3) how general self-esteem of teachers is related to their creative self-efficacy and teaching for creativity.

Method

Participants. In total, 169 in-service teachers from Estonia participated in Study 1; all continued their studies at Tallinn University Masters program. The sample included 93% of female respondents (n = 157), and 7% male respondents (n = 12). This over-representation of female respondents generally reflects actual proportions in Estonian schools: according to the Ministry of Education and Research (MoER, 2018), of nearly 25,000 active teachers in the Estonian educational system, less than 12% are male. Participants' age ranged from 24 to 68 years (M = 43.19, SD = 11.22). Average work experience ranged from 1 to 44 years of active service (M = 15.98, SD = 11.66). While the average age of in-service teachers in the OECD countries is around 40 years, Estonian teachers' average age is one of the highest: almost 49 years old (OECD, 2019b). At the same time, over 80% of teachers are female, making this one of the highest female ratios among teachers in the OECD countries.

Measures. Creative self-efficacy. Estonian adaptation of Rubenstein et al. (2013) Teaching for Creativity Scales (TCS) was used to measure factors that are related and contribute to teachers' self-efficacy and beliefs about teachers' creativity and its perception in society. Back translation was used to adapt the scales for Estonian use. The original TCS was translated into Estonian by the authors, back translation was performed by an English philologist. After relevance and conformity between the original TCS and the Estonian translation were confirmed, the final version of the Estonian adaptation was constructed by the authors together with the philologist. Reliability of the Estonian version was confirmed (Cronbach's α = .86; Split Half Part 1 α = .77, Part 2 α = .80; correlation between forms .67). Further description of the Estonian adaptation of TCS are presented in the Results section of this chapter.

Self-esteem. The Rosenberg Self-Esteem Scale, adopted to the Estonian language by Pullmann and Allik (2000, 2008), was used to measure self-esteem of teachers (Cronbach's α = .84). The scale includes 10 items, all of which were presented on a 5-point Likert scale. Sample items are: "I take a positive attitude towards myself," "I am able to do things as well as most other people," "At times I think I am no good at all (R)" (R for reversed score). For factor and regression analysis, standardized mean scores were used. For further statistical analysis, three groups were constructed, based on respondents' mean scores, indicating a low, medium and high level of self-esteem (based on Pullmann & Allik, 2000, 2008) (See further Results section).

Procedure. The study was conducted during participants' class on creativity in educational settings, as part of their Master's course. Participants were examined following the ethical guidelines set out by the American Psychological Association (2002). Participants were not rewarded and they were informed about the option to withdraw at any time. Anonymity of the respondents and confidentiality of the data they provided were guaranteed by the authors.

RESULTS

The original model of Teaching for Creativity Scales (Rubenstein et al., 2013) consists of 43 items on a 7-point Likert scale, with 7 representing *strongly agree* and 1 representing *strongly disagree*. After initial factor analysis of the 43 items with an oblique rotation, 5 items were removed from the scale due to insufficient loadings. The remaining 38 items produced a four-factor solution that explained 49.4% of variance. These four subscales were: 1) *Teacher self-efficacy* - whether or not teachers believe themselves capable of teaching their students to be more creative. High scores on this subscale indicate that teachers feel very efficacious in their ability to help students become more creative, whereas low scores reflect that teachers do not personally feel capable of increasing stu-

dents' creativity (13 items, sample item: "I am capable of helping students to become more flexible in their thinking;" Cronbach's α = .89); 2) *Environmental encouragement* - teachers' perceptions of their environment, focusing on local school environmental freedom and administration support. A high score on this factor indicates a favorable environment for creativity, and a low score indicates an unsupportive environment for the growth of creativity (7 items, sample item: "My administration encourages (or will encourage) me to foster innovative thinking in my students;" Cronbach's α = .88); 3) *Societal value* - teachers' perceptions on the general value of creativity for any field or endeavor. This scale does not measure whether the general society values creativity, but rather whether the teacher believes creativity is valuable for society. A high score indicates a belief that creativity is very valuable for the good of society, and a low score is indicative of the belief that creativity is not useful for society (13 items, sample item: "Innovative ideas can move society forward;" Cronbach's α = .88); and 4) *Student potential* - teachers' perceptions of the potential for students to become more creative. A high subscale score indicates a teacher's belief that all students can become more creative, and a low score suggests that the teacher believes that not all students can learn to be more creative (5 items, sample item: "All students can grow in their creative problem thinking skills;" Cronbach's α = .72). To determine the fit of the constructed scale, we conducted a confirmatory factor analysis using free software program jamovi (R Core Team, 2018; The jamovi project, 2019). Before the test, 2 more items were removed due to insignificant loadings from the subscale of *Students potential*. Test for exact fit indicated a good rate of fitness (Chi-Square 1181, *df* = 588, $p < .001$). At the same time, according to widely accepted criteria for goodness of fit (e.g., Hu & Bentler, 1999; Byrne & Campbell, 1999), fit measures indicated mixed results (CFI = .77, TLI = .76, SRMR = .084, and RMSEA = .077). However, the identified goodness-of-fit parameters should not automatically be dismissed as poor or insufficient. According to later research, these cut-off criteria may fluctuate due to several factors, such as sample size (e.g., Marsh, Hau & Wen, 2004), model simplicity (Chen, Curran, Bollen, Kirby & Paxton, 2008), or even high reliability of the questionnaires or tests (e.g., Browne, MacCallum, Kim, Andersen & Glaser, 2002). Therefore, further research is needed with larger samples, additional measures to control for reliability and factors for the proposed models.

Factor analysis of the Estonian version of TCS reveals that Estonian teachers attach the highest value of creativity for the good of the Estonian society (*M* = 6.04, maximum score 7.0). Estonian teachers also believe in their students' creative potential (*M* = 6.01). In other words, they believe that all students can become more creative. However, teachers' self-efficacy (*M* = 5.11) and perception of a favorable environment for creativity in

school (*M* = 4.89) were significantly lower. Detailed data and comparison to the U.S. teachers from Rubenstein et al. (2013) original paper are provided in Table 1 (Note: comparison with the U.S. teachers is based on Rubenstein et al., (2013), and is provided here merely for illustrative purposes). Results of the subscale of Teacher self-efficacy indicate that, compared to their U.S. colleagues, Estonian teachers have a significantly lower level of self-efficacy, and the difference is very large.

Table 1

Mean, Standard Deviations, and Reliabilities of Subscales

Subscales	*Estonian sample*		*The U.S. sample*		*Cohen's d*
	Mean	*SD*	*Mean*	*SD*	
Teacher self-efficacy	5.07	.78	5.95	.68	1.20
Environmental encouragement	4.89	1.31	4.59	.94	.26
Societal value	6.04	.73	6.06	.71	.03
Student potential	6.01	.80	5.99	.76	.03

Note: Subscales' 1-3 and subscales' 1-4 variance is significant at the p< .001 level; subscales' 2-3 and 2-4 variance is significant at the p< .001 level; subscales' 3-4 variance is significant at the p< .05 level.

Analysis of correlations between TCS subscales and self-esteem revealed that Self-esteem was correlated significantly (all at $p < .01$ level), yet moderately with Teachers' self-efficacy ($r = .38$), Environmental encouragement ($r = .35$), and Student potential ($r = .37$). Correlation between Self-esteem and Societal value was low ($r = .22$, $p < .05$). Teachers' self-efficacy was significantly correlated with Environmental encouragement ($r = .24$, $p < .01$), Societal value ($r = .30$, $p < .01$), and Student potential ($r = .16$, $p < .05$). Student potential and Societal value were correlated moderately ($r = .33$, $p < .01$). To control whether the difference in self-esteem current levels does have any effect on respondents' subscales related to creative self-efficacy, One-way ANOVA was carried out. There were statistically significant differences among respondents with different degrees of self-esteem on all subscales, except for Societal value. See the results in Table 2.

Table 2

Subscales of Teaching for Creativity Related to Creative Self-Efficacy Among Different Self-Esteem Levels: Summary Statistics (Oneway ANOVA)

TCS, subscales	Self-esteem: Low level (SEL)		Self-esteem: Medium level (SEM)		Self-esteem: High level (SEH)		F	*p*
	M	SD	M	SD	M	SD		
Teacher self-efficacy	4.39	.66	4.80	.74	5.22	.64	7.64	.001
Environmental encouragement	3.82	1.08	4.62	1.25	5.13	1.28	4.62	.012
Societal value	6.00	.65	5.97	.76	6.17	.75	.68	.508
Student potential	5.36	.90	5.59	.89	6.10	.73	5.86	.004

Post-hoc analysis (Bonferroni test) showed statistically significant differences (at $p < .05$ level) on three subscales, as follows: (a) on teacher self-efficacy, respondents with high self-esteem level (SEH) had higher scores than respondents with both low self-esteem (SEL) and medium self-esteem (SEM) levels; (b) on environmental encouragement subscale, SEH respondents had a higher score than SEL respondents; and (c) on student potential, SEH respondents had higher scores than both SEM and SEL respondents.

To examine whether the observed differences in teachers' self-efficacy are attributable to variations in various factors of school and societal environment, regression analysis was conducted (Table 3). Since gender-wise the sample group was extremely homogeneous, this question was left out of the analysis. Hierarchical multiple regression analysis was used to assess the ability of the independent variables to predict teachers' creative self-efficacy, after controlling for the possible correlations with age and working experience. Regression analysis revealed that self-esteem and societal value were the single strongest predictors of teachers' creative self-efficacy.

Table 3
Regression Analysis: Teachers' Creative Self-Efficacy and Teaching for Creativity

Teachers' creative self-efficacy, independent variables	Regression coefficient, Beta Teachers' creative self-efficacy
Self-esteem	.29**
Environmental encouragement	.15
Societal value	.27*
Student potential	- .08
Age	- .17
Working experience	.32
Determination coefficient, R^2	.26
R^2 *F*-statistic	5.30***

Note: * Correlation is significant at the .05 level; ** Correlation is significant at the .01 level; *** Correlation significant at the .001 level.

Study 2: Creative teaching - a perspective of Estonian teachers

This study aimed to investigate teachers' understandings, beliefs, and teaching practices that are directed at teaching for creativity and creative teaching. It is important to understand that these two concepts are different, although they are very closely connected, especially in the classroom environment. As NACCCE (National Advisory Committee of Creative and Cultural Education, 1999, p. 30) defined it, creativity in the educational settings is an activity with a rich imagination, which leads to original and valuable outcomes. Therefore, teachers' abilities to foster students' imagination and put it to good use

for educational purposes is extremely important. How teachers manage to do this remains mainly behind the classroom doors; therefore, an inside look at these activities provides valuable insights. As we investigated the participants' understanding of the their everyday professional activities, we applied the principles of phenomenological study: what meaning teachers assign to the creative teaching, what their motivation is to continue this, and what their personal experiences are in this field.

Method

Participants. In total, 58 in-service teachers participated in the study. All of them were students in Tallinn University's Master's program in educational sciences. 100% of the sample (n = 58) consisted of female respondents; their age ranged from 24 to 54 years (M = 35.15, SD = 7.60). Respondents' working experience ranged from 1 to 15 years of active service (M = 6.89, SD = 4.70).

***Measure. Essay on personal teaching practices*.** All respondents wrote an essay on the subject "How do my teaching for creativity and creative teaching express themselves?" As additional questions, respondents were asked to describe three techniques of creative teaching or behavior patterns, which they used or suggested to use to support the expression of their students' creativity.

Procedure. The study was conducted during participants' classes on creativity in educational settings, as part of their Master's course (the same as was employed in Study 1). The essay was given as a home assignment. Participants were examined following the ethical guidelines set out by the American Psychological Association (2009). Participants were not rewarded, and they were informed about the option to withdraw at any time. Anonymity and confidentiality of the respondents were guaranteed by the authors.

Data Processing Methods. When all essays were collected from the participants, they were analyzed using thematic content analysis principles. Triangulation was used to ensure that the categories that emerged were general, and a common understanding of teachers' creative teaching techniques prevailed among the researchers. Apart from the authors, a lecturer from the department of psychology of Tallinn University was also participating in the analysis process. Inclusion of several investigators makes it possible to reach different understandings, provide different angles of the researched topic, and enrich the results (see Malterud, 2001). The essays were read repeatedly to avoid incidental connections and categories. Free coding was made during the first step. Next, those initial codes were discussed and categorized, and main categories and sub-categories were agreed upon based on the aims of this study.

RESULTS

Based on the responses of teachers and the analysis conducted, seven major categories emerged that described creative teaching among the respondents. Of these seven categories, three composed one general factor, Teachers' Empathetic and Supportive Behavior (i.e. Safe Environment, Contact with Students, and Teachers' Personality and Motivation). The other four categories composed a factor, called Creative Solutions in Teaching Process (i.e. Encouragement of Creative Thinking, Special Techniques, Change of Physical Environment, and Assessment and Feedback). Individual responses and meaning attributed to these categories reflected both understandings of creative teaching (majority of responses, e.g., in regards to Special Techniques - *We do so-called staircase run, from 4th floor downstairs, or I impersonate students who "sleep" on desks, so we could play role games*), and teaching for creativity (less obvious, e.g., in regards to Feedback - *For bigger works I have put together criteria, and creativity is always one of them. Although I do not have an obligation to grade these works, we all provide feedback on every student's creativity*). The factors of Safe Environment (e.g., *I strongly believe that creativity is impossible in nervous, loud classroom; you have to have "safe haven" for it*) and Personality and Motivation (e.g., *I feel the need for creative solutions. And hopefully kids will see it too, from my actions*) included not only personal beliefs, but also aspects of teachers' self-efficacy towards pursuing creative goals. Thus, Supportive and Empathetic Behavior of teachers reflected behavioral outcomes in the classroom (i.e. actual manifestations) as well as their beliefs about their ability to foster students' creativity (i.e. confidence in their competence). At the same time, teachers' empathetic and creativity-supportive behavior is based on the value of creativity in the society - if teachers can openly discuss and demonstrate their own creative potential, they feel a) that it is something encouraged in the general culture, and b) that students understand this message.

The content of and connections between categories are presented in Figure 1.

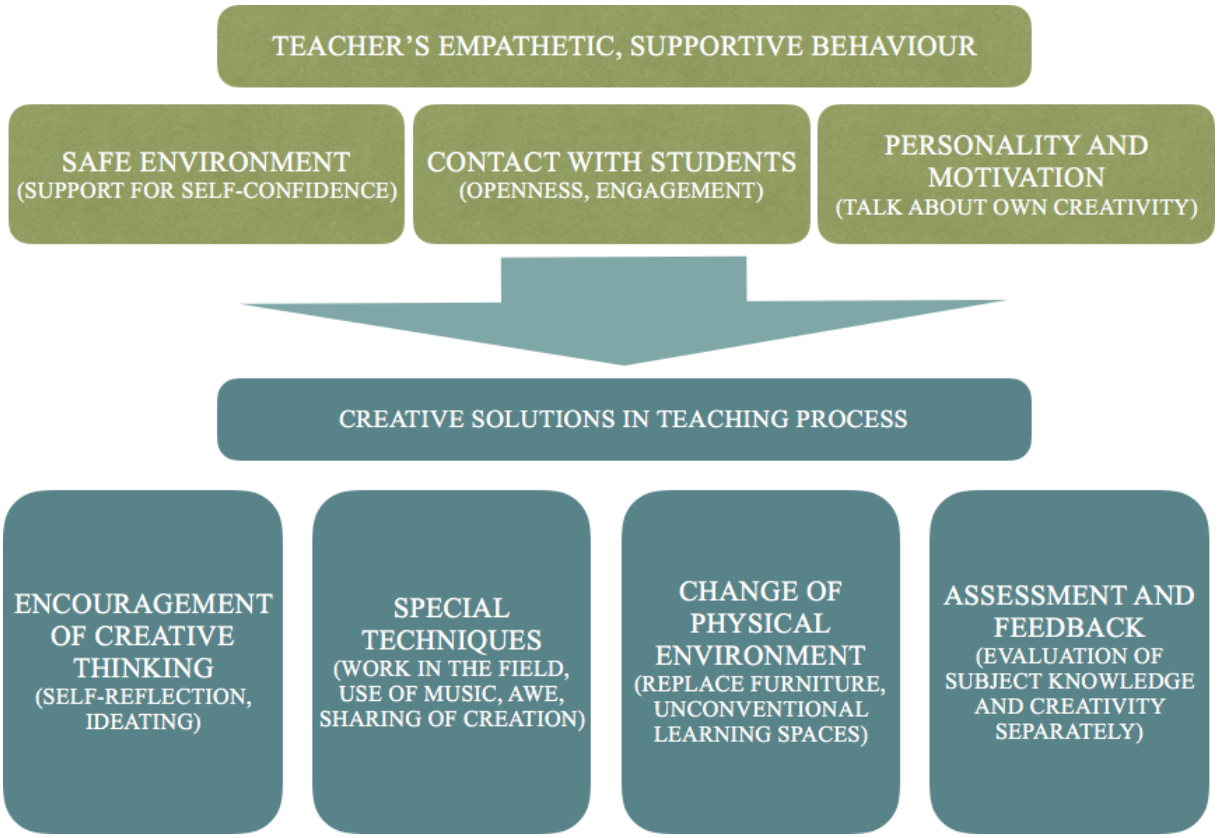

Figure 1. Creativity supportive behaviour and creative teaching: Categories.

GENERAL DISCUSSION

As we read it, Study 1 produced mixed results. On the one hand, it is encouraging to see that Estonian teachers do value students' creative potential, and at the same time, they understand that creativity in general is highly valued in society. No surprise then, that these results showed the strongest positive correlation. It can be interpreted in two ways - the higher the societal value placed on creativity is perceived by teachers, the more they believe their students can pursue their creative potential. Or, the more teachers believe in their students' creative abilities and potential, the more they are sure the society would value it. On the other hand, the level of self-efficacy of the Estonian teachers was rather low (compared to the U.S. number). Also, perceived low encouragement from the school environment to express/engage their creativity should be treated as a warning to the educational system. If teachers do not believe in their creative abilities, it is no surprise that they are more reluctant to recognize it in others. Kõiv, Liik, and Heidmets (2019), in their study of Estonian teachers' psychological empowerment, emphasize that in order to empower teachers, school environment should have opportunities to create conditions where teachers' "voices and viewpoint are not just heard but they personally participate in the discussion of the meaning and goals of the activity of the organization" (p. 1509).

As the analysis showed, neither age nor working experience had effect on teachers' creative self-efficacy. This is in contrast to the findings of Rubenstein et al. (2018), who

showed a positive link between years of experience and teachers' self-efficacy.

The most influential factors for Estonian teachers that are associated with their creative self-efficacy are their general self-esteem and societal value. This result is in line with the findings of Horng et al. (2005) that teachers' self-confidence is a key factor for the development of teachers' positive perceptions and performance of teaching for creativity. In other words, if school administration, parents, and society support teachers' self-esteem in general as well as express their support for creativity in schools, then teachers start to believe in their creative potential (i.e. increase their creative self-efficacy level). As Rubenstein with colleagues (2018) showed, when teachers perceive their professional environment as being full of possibilities, they do promote creativity. In the opposite case, they might just become a hindrance to their students' creative potential. In fact, data suggests that teachers tend to see obstacles for creativity-fostering in the classroom in the professional environment. Examples of such obstacles are the lack of time and training, overloaded curriculum, standardized testing, and so on (Berezcki & Kárpáti, 2018).

Study 2 reveals some important information about the way teachers understand the concept of creativity in their everyday professional behavior. As one could see, the terms "creative teaching" and "teaching for creativity" remain somewhat confusing to teachers, and they seem to use them as synonyms. As the study was conducted in Estonian, the Estonian *loov õpetamine* ("creative teaching") set the tone for the results. However, these results are promising - alongside the techniques for creative teaching, respondents also recognized the need for teaching for creativity. Teachers also emphasized the prerequisite conditions for any creative teaching - namely, the personality of a teacher, who is empathetic, supportive and encouraging, and thus can create a safe environment for students to express their ideas. Not less important is talking about teachers' creativity, as it signals a growth mindset towards creativity: everyone can learn how to recognize personal creativity, and also how to develop it further. This is in line with the findings of Bereczki and Kárpáti (2018) that teachers' beliefs about creativity include malleability of this construct, its evolution over time. The contact with students that the Estonian teachers pointed out as being one of the important features of creativity-supportive behavior, is at the core of teachers' ethos (Lin, 2011). When Sawyer (2004) discussed the improvisation metaphor within educational settings, the author highlighted the importance and effectiveness of an unstructured classroom - it is exactly what the present study confirmed. Teachers value different, creativity-supportive techniques in a safe environment. As experienced teachers have a larger repertoire of available methods and techniques, and they have a better ability to improvise with them, schools must provide teachers with

means, possibilities, and encouragement to acquire such improvisation skills. It is encouraging to admit that teachers, at least based on the results of this study, can and actively do separate ratings of academic and creative results. In this way, students become aware of many possible ways to express their thoughts, ideas, and thus experience achievements. Our findings supported the view that teachers should serve as creativity role models.

Plucker et al. (2004) have demonstrated that in their professional activities, teachers do not always use the same terms and descriptions of creativity as do scholars and researchers in the field. This is even more amazing, given the fact that in theory, teachers know and admit the agreed conceptions of creativity, and usually, they tend to commit to growth mindset (Karwowski, 2014; Kampylis, Berki, & Saariluoma, 2009). However, in real-life classroom situations, teachers often either misjudge creativity for something else or do not understand the concept fully (see Andiliou & Murphy, 2010; Hoff & Carlsson, 2011; Urhahne, 2011). Moreover, there is a large proportion of teachers, whose implicit theories of creativity and their understanding of what creativity of their students looks like, that goes against actual characteristics of a creative process or individual (Gralewski & Karwowski, 2016). Therefore, investigating what might be hiding behind such teachers' misconceptions would help to understand better the complex nature of creativity in school. Moreover, when teachers describe their actual beliefs and behaviors in regards to creative teaching and techniques they use to reinforce students' original thinking, it is possible to collect invaluable information about the actual state of promoting creativity within educational settings.

As the results of studies 1 and 2 showed, teachers put a big stress on personality and motivation of teachers themselves in creativity-promoting processes. On the one hand, it is a belief in personal creative potential and ability to recognize and promote students' creativity that allows teachers to do it. Teachers need to talk about their own creativity - how it is manifested, where they find inspiration, and why they think it is necessary. As one respondent in Study 2 put it, *"<talking about teachers' own hobbies and experiences> creates a safe atmosphere between teacher and students; students experience this way that if the teacher talks about him/herself, …, they also can do it."*

Although the link between teachers' self-esteem (which is one of the strongest predictors of teachers' formation of creative self-efficacy) and belief in students' creative potential was rather weak, albeit statistically significant, there is always a need to support and emphasize teachers' beliefs about their creativity and their ability to see and recognize creativity around them. As Huang, Lee, and Yang (2019, p. 62) concluded, "day-to-day creative experiences can transfer to creative performance in classrooms and corre-

spondingly build up the self-confidence of teachers." Kõiv et al (2019) demonstrated that the more teachers perceive their everyday work as meaningful, the stronger is the subjective connection with their working environment. Hence, their motivation for promoting personal growth among students, including reinforcement of their creativity. It can be the other way around though, as Study 1 results indicated significant differences among respondents with high, medium, and low levels of self-esteem in terms of their self-efficacy and environmental encouragement beliefs. The higher the teachers' self-esteem level was, the higher both these subscales scored - meaning that generally, more self-confident teachers have stronger beliefs in their pedagogical prowess, and at the same time they perceive their school, administration, colleagues, and parents as more helpful and supportive for creativity. On the other hand, teachers realize the need to promote, encourage, and motivate students to express their creativity. Teachers do believe in their students' creative potential, and fortunately, this belief is supported by the general attitude in the society that encourages expression of one's original, novel ideas. As the results of Study 1 also indicated, teachers with a high level of self-esteem, have stronger beliefs in their students' creative potential, as compared to those whose self-esteem level is low. Either through discussions, teamwork, self-reflection methods, or simply by supporting students' self-esteem, teachers do their best to create a safe, supporting and encouraging atmosphere for creativity in the classroom.

Based on the results of both studies and taking into account previous research in the domain of enhancing teachers' creative behavior, a framework for further research and investigation of creative teaching is proposed (see Figure 2). Needless to say, this framework is only the first step, as the model based on it should be elaborated further, with additional factors and conditions added.

As Craft (2009) noted, teachers' creative potential is the main source for creative teaching, which in turn, manifests itself in everyday activities. Therefore, it is safe to assume that creative self-efficacy lies at the core of creativity-supportive teaching behavior. This, in turn, is supported by teachers' self-confidence (or self-esteem) and the perceived value of creativity in the general society. The more the teachers embrace their creative personality, the more they inspire their students to be creative as well (Cayirdag, 2017). Teachers seem to understand that creativity is valued in society - this reflects both in their beliefs (Study 1) and in their classroom activities (Study 2). Teachers describe various techniques that they use to bring creativity "out of the classroom" and put it to use within real-life problems - e.g., teamwork, integration of different subject into one project, working on students' ideas, supporting freedom and possibilities to play with physical educa-

tional space. All these methods reflect societal value and offer unique possibilities for students to develop their originality.

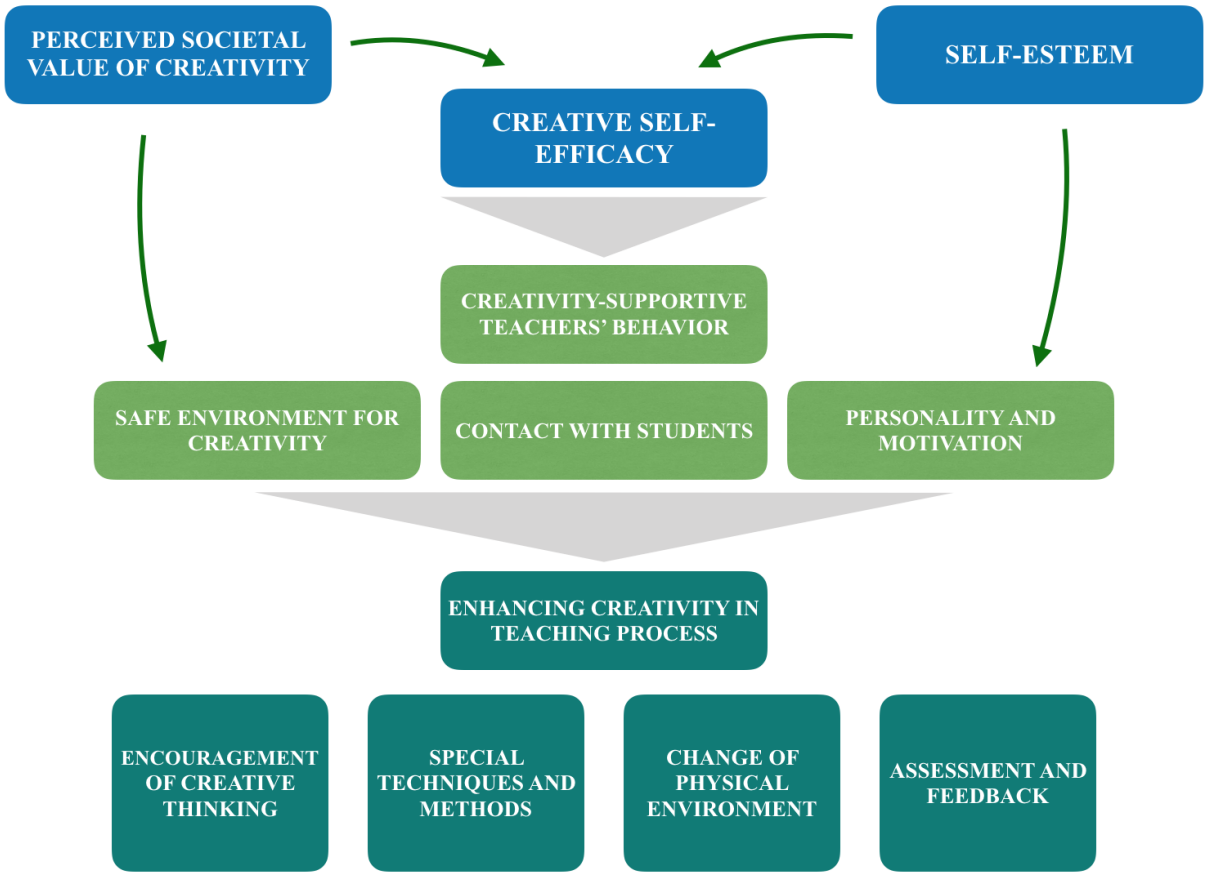

Figure 2. Aspects of creative self-efficacy and it's affect on creative teaching: Framework proposal.

It is important to keep in mind that environmental factors play a vital role, and their influence on teachers' self-efficacy in the domain of creative teaching is hard to overestimate. On one hand, support the teachers get from their school environment is the best predictor of their non-transferred creativity (i.e. the so-called everyday creative expressions that do not find their way into the classroom). Yet on the other hand, when talking about obstacles to creativity, teachers tend to overwhelmingly name macro-environmental factors, such as standardized tests, packed curriculum, and little flexibility (Rubenstein et al., 2018). Therefore, not only direct support to teachers' self-efficacy is needed, but also indirect one - via creativity-supportive physical, social, and political environment. Kaufman, Beghetto, and Watson (2016) describe the Dunning-Kruger effect in regards to creativity - it is the tendency of people with low metacognitive abilities not only to underperform, but also to not be able to recognize their low creative levels. If we assume that not all school systems necessarily support or value creative thinking, creative teaching or creative students, then such low self-beliefs might have long-lasting ef-

fects on students' creative expressions (Kaufman et al., 2016). Hence, the need to encourage teachers' creativity-supportive behavior, their self-esteem regarding abilities to promote and recognize the creative potential of their students.

Increasing creativity in teaching begins with teacher education. Specifically, relevance and benefits of creative teaching should be stressed throughout teacher preparation programs. Creativity should be integrated into not only lesson planning, but also instruction.

LIMITATIONS AND FURTHER RESEARCH

As with all qualitative (and also many quantitative) studies, drawing generalized conclusions should be done with caution. The sample represents a rather specific group of teachers, namely those who pursue their academic studies at the university. As the TALIS 2018 (OECD, 2019b) study highlighted, 54% of all Estonian teachers are over 50 years old. The more mature teachers might have different views on their creativity and the ways to enforce them in their students. Hence, in future studies, more specific age groups (in regards to working experience) should be studied. Also, larger samples should be used in order to control for applicability of the proposed models and correlations. Another limitation is the gender of respondents. Although samples of both studies generally reflect the actual situation in Estonian education (dominance of female teachers in schools), previous studies have shown differences between males and females in regards to creative self-efficacy. For instance, Hung (2018) found that male students have significantly higher self-efficacy for creative thinking skills and demonstrate more persistence when socially persuaded. Karwowski (2011) demonstrated that boys tend to have higher self-beliefs regarding their creativity, while girls tend to underestimate theirs. Therefore, in future studies, more male teachers should be included to design more effective strategies for enhancing teachers' creative self-efficacy. The third limitation lies in the measures used. In addition to in-depth interviews, more self-review instruments, measuring both attitudes and everyday behaviors, as well as more universal school environment scales, could provide additional information on how teachers perceive their work settings and what obstacles or facilitators they face when promoting creativity. As Reiter-Palmon, Robinson-Morral, Kaufman, and Santo (2012) conclude, self-reported measures of creativity should be used with caution (in fact, in their study, self-perception of creativity among respondents did not correlate with any validated measure of creative problem solving). Additionally, mixed methods, and especially Triangulation design, should be used with warning. Although it is the most popular mixed methods design, there are some challenges that we need to face and perhaps address more carefully in future (e.g., more expertise in both qualitative and quantitative methods; assigning equal weight to different

data sets; interpreting conflicting results). Finally, up to this day, there are still not too many empirical studies that comprehensively deal with teachers' attitudes towards and beliefs regarding creative teaching. On the one hand, this is a limitation, as there are so many facets that need to be addressed and described in future studies. Yet, on the other hand, this limitation gives our paper additional value. It is another brick (albeit a small one) into the wall of knowledge about teachers' attitudes, beliefs and their confidence in promoting creativity in school settings.

We believe that the proposed framework might be useful in planning future studies, addressing current issues within teachers' ability and readiness for creative teaching. The more intrinsic self reported data on teachers' attitudes towards creativity we get, the more effective and constructive solutions and action steps could be devised for the future school.

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