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INTERNATIONAL & COMPARATIVE EDUCATION | RESEARCH ARTICLE

There is no ‘mindfulness’ without a mindfulness theory – teachers’ meditation practices in a secular country

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Abstract: The implications of mindfulness theory, created within a post-positivist tradition, in the context of education and connecting it to a social constructivist methodology are a challenge. We carried out this study using a mixed method approach: questionnaires and semi-structured interviews in a pilot project with a purposeful sample of 27 teachers; and a cross-sectional main study with 145 nursery school teachers and 225 secondary school teachers around Estonia. The aim of the study was to explore Estonian teachers’ religiosity, meaning of meditation, meditation practices and their perceived impact, trait mindfulness and experiences of using meditation exercises in teaching. NVivo content analysis, SPSS descriptive statistics and analysis of variance were used. The religious group of teachers has perceived the positive impact of meditation exercises on their state more often than the undefined group. The teachers who practise meditation exercises regularly have noticed a positive impact more frequently. The MAAS trait mindfulness scores did not vary depending on teachers’ religion, regularity and length of their meditation practices. The study shows that trait mindfulness should not be measured in populations who are not educated in mindfulness and stresses



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Riin Seema completed PhD in psychology (2014) and her dissertation was titled “Mindfulness and time perspective scales and their relations with subjective well-being in Estonia”. Riin Seema is a Docent in Educational Counselling at Tallinn University, School of Educational Sciences. She has worked as a teacher at almost all educational levels (nursery school, secondary school, vocational education and higher education) and as an analyst in the Estonian Quality Agency for Higher and Vocational Education. She is interested in mindfulness, time perspective, educational counselling and teaching and learning strategies.

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PUBLIC INTEREST STATEMENT

With this mixed method study, we show that (mindfulness) meditation is not a self-evident practice and trait mindfulness should not be assessed in populations not educated in mindfulness. The study was conducted in a unique Estonian cultural context where the biggest group of studied teachers where secular and half of them did not practice any meditation exercises, and in the group of practitioners there were more of those who practised meditation exercises irregularly or sometimes. The study provides an opportunity to decentre from the researcher’s own theory of mindfulness and to view mindfulness and meditation from different perspectives—the theory, researcher and the method, and the respondents surveyed and their practices. Mindfulness seems to be a para-conceptual and culturally learned practice and therefore the meaning of mindfulness meditation for the respondents and their theoretical understanding of the construct are some important study objects in the future.

the role of mindfulness theory itself in developing regular meditation practices and the trait.

Subjects: Education; International & Comparative Education; Research Methods in Education

Keywords: teachers; religiosity; meditation exercises; perceived impact; trait mindfulness; mixed method

1. Introduction

Our mixed-method research, which was carried out in a unique Estonian cultural context, shows mindfulness construct from different perspectives—from teachers' trait, personal meditation practice and teaching. The article educates teachers and researchers to be critical consumers of literature on mindfulness, as it shows dilemmas involved in research, such as the relation between culture, researcher and research focus, the role of theory, and the limits and possibilities of research in practice (Gore & Gitlin, 2004). The application of mindfulness spreads in educational settings, while the construct is diversely defined and a considerable amount of research-related issues have gone unresolved (Ditrich, Royce, & Lovegrove, 2017). Mindfulness theory and practice, which stem from Buddhism (Williams & Kabat-Zinn, 2011), have been studied more in psychotherapy contexts in adult populations and less in educational contexts among children (Schonert-Reischl & Roeser, 2016). Further research is needed on whether it matters if teachers who teach mindfulness are themselves mindfulness practitioners or not. (Roodenrys, Badawi, & Lovegrove, 2017). McCown, Reibel, and Miccizzi (2010) have said that any professional who teaches mindfulness should think about how much their personality has common-factor mindfulness, whether their mindfulness training and practice is deep enough and whether they have the right conceptual understanding of mindfulness.

2. Theoretical framework

Mindfulness can be described from a phenomenological point of view (K. Brown & Cordon, 2009), but the scientific theory of mindfulness was primarily created in a post-positivist tradition, and studying its application in education within a constructivist paradigm requires links to be made between methodological perspectives (see Creswell, 2014). Mindfulness is considered to be pre- or para-conceptual (K. Brown & Ryan, 2003). Mindfulness is about “coming to our senses” (Kabat-Zinn, 2005, p. iii)—this is the first-person perspective. From the researchers' third-person perspective, other persons' “mindfulness” is not an external thing that can be directly sensed or explored (Williams & Kabat-Zinn, 2011). Since scientific understanding—understanding of the world beyond the senses—depends on cultural mental models and schemas (Kikas, 2003), it is understandable that concepts of mindfulness may differ in different societies. There has been a popularisation and secularisation of mindfulness that simplifies the construct and sometimes even equates mindfulness with relaxation and the elimination of stress (Brazier, 2016).

Mindfulness meditation means cultivating moment-to-moment, non-judgemental awareness by paying attention in a specific way, that is in the present moment and as non-reactively, as non-judgmentally and as open-heartedly as possible (Kabat-Zinn, 2005). While modern mindfulness meditation has been the dominant paradigm of meditation research, there is a variety of other forms of meditation around the world (King, 2016). So far there is a lack of studies that have examined the effects of Christian, Muslim or Jewish forms of meditation (Koenig, King, & Carson, 2012). The term “meditation” refers to a category of practices involving attention-training techniques aimed directly at cultivating particular positive states (Davis & Thompson, 2015). While the meditative practice may induce an integrated set of physiological changes, the purpose of mindfulness practice is not necessarily to induce a state of relaxation (Edenfield & Saeed, 2012) but to be aware of what is present—whether that be relaxation, tension, ease or anxiety (Willard, 2015).

Mindfulness as a state means open or receptive attention and awareness of what is taking place in the present. High trait mindfulness means that mindful states are more frequent or continuous, while low trait mindfulness indicates that a person pays attention and awareness to the present moment infrequently and operates more on “automatic pilot” (K. Brown & Ryan, 2003). Mindfulness as a personality trait can be developed through mindfulness practice, and when conceptualised as a trait and measured using self-report scales, mindfulness has been found to be a natural individual difference variable even in populations without any mindfulness meditation practice (K. Brown & Ryan, 2003; Seema et al., 2015). Several measures of trait mindfulness have been created that reflect a different conceptual understanding of mindfulness (Siegling & Petrides, 2014).

3. Mindfulness exercises or meditation exercises

In literature, “mindfulness exercises” are also referred to as “meditation exercises”, “mindfulness training” and “contemplation practice” (K. Brown, Creswell, & Ryan, 2015; Lyons & DeLange, 2016). The synonyms are used interchangeably to label awareness-developing activities for both adults and children. What mindfulness exercises have in common is the application of moment-to-moment, non-judgemental attention to current experiences. In education, mindfulness exercises of various types have been used, for example, mindful breathing, mindful walking, mindful reading, mindful listening and mindful viewing (Zajonc, 2016).

A systematic review (Burrows, 2018) of mindfulness for teachers revealed that higher mindfulness was generally associated with positive outcomes in relation to most measures of well-being. Teachers should personally experience and practise mindfulness before teaching it to students (Kinder & Coscia, 2015; Zenner, Herrnleben-Kurz, & Walach, 2014). Mindfulness practices can reduce educators’ reactivity, increase acceptance of self and others, enhance creativity and therefore subtly affect students and the education environment (Bliss, 2017). When applying mindfulness in the educational context, it requires professional discretion, clear instructions, the right dose and adaptation to suit the individual (Burrows, 2018).

4. The Estonian context

Estonia is the fourth smallest country in the European Union, with a population of just 1.3 million people (Statistics Estonia, 2017). Estonia is a highly secular country (Crabtree & Pelham, 2009) with religious freedom (International Religious Freedom Report 2015). Based on an OECD (2016) review, Estonia’s basic education is one of the best in Europe. The Estonian inclusive education with special-needs children being educated in mainstream kindergartens and schools poses a challenge to all teachers (Häidkind & Oras, 2016).

The mindfulness construct is relatively new in Estonia and no one equivalent to the term currently exists in the Estonian language; still, more than eight synonyms have been used lately in the Estonian literature to express mindfulness (Seema, Säre, & Pöder, 2017). Since 2014 the Estonian non-profit organisation Minutes of Stillness (*MTÜ Vaikuseminutid*) has been encouraging kindergartens and school-teachers to use mindfulness exercises in the education process. During the first two years of the organisation’s existence they did not refer to their exercises as either mindfulness or meditation exercises, but as Minutes of Stillness exercises (Jung, Ljulko, Väljaste, & Mitt, 2015). This was a strategic decision, because the programme is secular, but meditation associates with religion (N. Jung, personal communication, Jul 4, 2016). Two years later they told that the Minutes of Stillness programme is based on mindfulness, which they describe as intentionally directing one’s attention to inner and outer experiences whilst being aware and accepting perceptions as they are (Jung, Kaudne, Ljulko, & Väljaste, 2017).

Estonian teachers’ mindfulness and integration of mindfulness exercises into the education process is an uncharted territory. The first Estonian study on mindfulness was carried out on an adult students’ sample and it showed a positive correlation between MAAS trait mindfulness and subjective well-being (Seema et al., 2015; Seema & Sircova, 2013). Seema (2014) dissertation stated that mindfulness is

a natural human characteristic that describes people irrespective language and culture and trait mindfulness is measurable with the Estonian MAAS (Seema et al., 2015).

The aim of our research was to find out any connection between Estonian teachers' religiosity, mindfulness and teaching. The objective of the pilot study was to explore teachers' experiences with mindfulness exercises, such as meditation, and to evaluate the conceptual and linguistic suitability of the study questionnaire for the collection of relevant data for the main study (Onwuegbuzie, Bustamante, & Nelson, 2010). The aim of the main study was to explore teachers' religiosity, meaning of meditation, meditation practices and their perceived influence, trait mindfulness and experiences using meditation exercises in teaching. To answer research questions that included clearly interconnected qualitative and quantitative components, as we studied the mindfulness construct from different perspectives—from the trait, personal practice and teaching, we used a mixed-method research (Tashakkori & Cresswell, 2007). The current empirical research consisted of a pilot and main study. The Tallinn Medical Research Ethics Committee approved the study (KK 1575, 29.08.16).

For the main study, we formulated the following research questions:

- (1) What religions do Estonian teachers admit or what do they believe in?
- (2) What does the word “meditation exercise” mean to Estonian teachers?
- (3) What kind of meditation exercises do the teachers practise and how often?
- (4) Do religiosity and the duration and regularity of meditation practices differentiate between groups of teachers based on the perceived impact of meditation and trait mindfulness?
- (5) Have the teachers' experiences of using meditation exercises in teaching work varied depending on their own personal meditation practices, and if so, how?
- (6) What principles and theories do the teachers use as a basis for carrying out meditation exercises?

5. Method

5.1. Pilot study

To conceptualize the construct of interest, to identify and describe behaviours that underlie the construct and to develop the initial instrument (Onwuegbuzie et al., 2010), we consulted with three local experts from the Minutes of Stillness organization. The data were collected in 2016 using the concurrent mixed method (Tashakkori & Cresswell, 2007). After the completion of a questionnaire, personal and group interviews were conducted with the respondents. A purposeful sample of the pilot study consisted of 27 teachers from six general education schools, two schools for students with special needs and five kindergartens. The teachers had either participated in a training programme provided by the organisation Minutes of Stillness or used meditation exercises in the education process. The pilot study revealed that the teachers' understanding of the meaning of meditation and mindfulness varied significantly. Several teachers had never heard the word “mindfulness” and some teachers had never considered that the Minutes of Stillness exercises constituted meditation exercises. We reformulated several research questions more broadly and generally (Creswell, 2014) than previously explicitly stated in the Ethics Committee Application. We could not address the exercises as “mindfulness-type exercises” as we had planned, but as “meditation exercises” and “Minutes of Stillness exercises”. Therefore, some questions were reworded and new open questions were included in the main study questionnaire.

6. Main study

6.1. Procedure and measures

The data were collected in 2017. An e-mail with information about the study was sent to the directors of nursery schools and secondary schools around Estonia, with a request to forward the e-questionnaire to teachers in their educational institution. The teachers were told that the aim of

the study was to explore their thoughts and attitudes regarding and experiences of the Minutes of Stillness exercises and meditation exercises, which are referred to as mindfulness-type (MT) exercises. The questionnaires included open-ended questions as well as those providing a numeric scale for a response.

We created a new numeric scale for this study, naming it “Perceived Impact of Meditation Exercises”. We developed the scale based on the theory discussed above (K. Brown et al., 2015; Schonert-Reischl & Roeser, 2016; etc.). The scale consists of eight items reflecting the perceived positive influence of practising meditation exercises and eight items for perceived negative influence on a 5-point scale (0 = never, 1 = rarely, 2 = sometimes, 3 = often and 4 = almost always). One subscale is the Perceived Positive Impact of Meditation Exercises, sample $\alpha = .96$; the other is the Perceived Negative Impact of Meditation Exercises, sample $\alpha = .94$. (See Table 1)

Trait mindfulness was measured with the Mindful Attention Awareness Scale (MAAS; K. Brown & Ryan, 2003) adapted for Estonian by Seema et al. (2015). The MAAS is one of the most popular instruments to measure mindfulness; however, its content validity is still questionable. It is unidimensional, designed to measure present-centred attention-awareness in everyday experience (Park, Reilly-Spong, & Gross, 2013). The Estonian 15-item MAAS measures mindfulness on a 6-point scale (“almost always” through to “almost never”). A sample item is “I rush through activities without being really attentive to them”, sample $\alpha = .88$.

6.2. Sample

A total of 370 teachers (145 nursery school and 225 secondary school teachers) from around Estonia participated in this study. There were 334 females and 19 males, with seven not indicating their gender. The teachers’ education levels were the following: 204 had a Master’s degree; 119 had a Bachelor’s degree; 41 had secondary education; one had a Doctorate; and one had completed vocational education. Four responses were lacking in this regard. Only 63 (17.0%) of the teachers had taken any mindfulness or meditation courses, 23 of whom mentioned the Minutes of Stillness course, but none mentioned any well-known mindfulness courses (MBSR, MBCT, etc.).

6.3. Data analysis

Quantitative data were analysed using SPSS descriptive statistics and reliability, t-test and ANOVA analysis, while qualitative data were analysed with NVivo and Microsoft Excel content analysis using both open coding and pattern coding (Saldana, 2009).

Table 1. Religiosity of teachers surveyed			
Group	N	%	Teachers’ beliefs
1. Undefined	123	33.2%	Respondents left the question unanswered.
2. Secular	113	30.5%	Respondents believed in themselves, love or nature or were atheists.
3. Religious	90	24.3%	Most of them admitted Christianity; other individual answers included Buddhism, Hinduism, Islam and Judaism. Several teachers expressed uncertainty or named more than one religion.
4. Spiritual	44	11.9%	Respondents believed in spirits or supernatural forces.

7. Results

7.1. Religiosity

Teachers could choose whether to answer the open question “What religion do you admit or what do you believe in?” Based on the answers, we coded the teachers into four groups (See Table 1).

8. The meaning of “meditation exercises” to the teachers

All of the teachers were asked, “What does the term ‘meditation exercise’ mean to you?” Their answers reflected different aspects of meditation exercises: inner and outer focus, means and ends. Most often mentioned were that meditation exercise meant being at one with and sensing oneself or being at one with your own thoughts and feelings (75); peace, being in a peaceful place (52); focusing exercise (51); targeted guided thinking (40) and being in silence (38). Meditation exercises seem to be rather a short-term experience—time out (8) or a moment to oneself (6). Six mentioned conscious action, spiritual meaning was mentioned by five, discipline by four, and just one person mentioned non-judgemental attitudes.

9. Meditation exercises practised by teachers

The open question “If you practise meditation exercises, what kind do you practise?” was answered by 215 teachers. The most common exercises are given in Figure 1. The teachers (43) practised breathing exercises (noticing and controlling breathing, deep breathing, etc.); minutes of stillness and silence (26); and yoga (22). They also mentioned individual practices: transcendental meditation, water therapy, looking into a fire, etc.

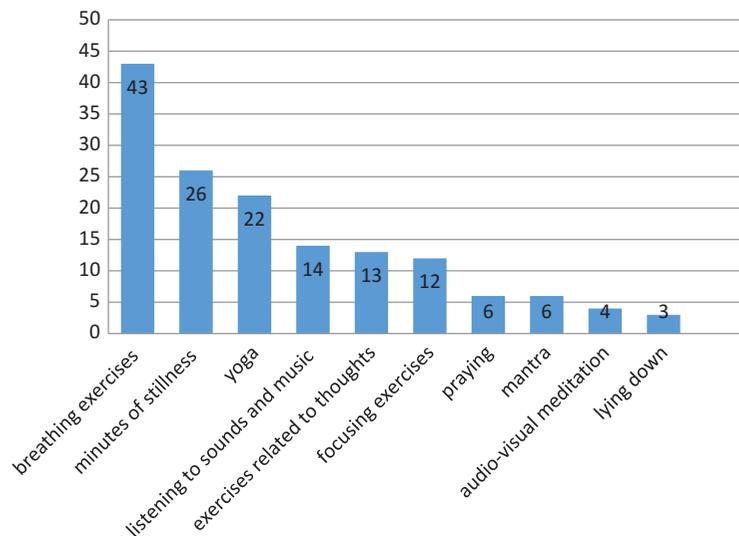
10. Regularity and length of teachers’ personal meditation practices

Meditation exercises were regularly practised by 34 teachers (9.2%) in their everyday lives; irregularly practised by 51 (13.8%); sometimes practised by 111 (30.0%); and not practised at all by 171 (46.2%). Three (0.8%) did not respond. Just 14 teachers (3.8 %) had been practising meditation for 15 or more years; 23 (6.2%) had been practising for 6–10 years; 78 (21.1%) for 2–5 years; 47 (12.7%) for up to one year; and 156 (42.2%) had never practised any meditation exercises. 22 (5.9%) did not respond.

11. Perceived impact of practising meditation exercises

Teachers who practise meditation exercises were asked: “Has practising MT exercises (meditation or Minutes of Stillness exercises) in your everyday life and work had a positive or negative impact?” The “Perceived Impact of Meditation Exercises Scale” was used.

Figure 1. Meditation exercises in teachers’ everyday lives.



EFA analysis using the Oblimin Rotation Method with Kaiser Normalisation showed two latent factors with a correlation ($r = -.06$) (Table 2). The values of the factor loadings of all items in both subscales remained above .74, indicating that the questionnaire measured two separate sub-topics. The teachers had experienced some positive impact: practising meditation exercises had sometimes left them feeling good, helped them calm down, focus, regulate their emotions and rest. Some teachers had experienced a negative impact of meditation, although the exercises only rarely caused negative emotions, anxiety or disturbed their thought processes.

Table 2. Perceived impact of practising meditation exercises, factor structure and loading, means, standard deviations and Cronbach's alpha values, N = 146

Scale items	F	M	SD
Perceived Positive Impact			
1. Has helped me calm down.	.906	2.63	1.14
2. Has helped me regulate my emotions.	.894	2.52	1.12
3. Has helped me focus.	.887	2.58	1.11
4. Has helped me accept annoying thoughts.	.863	2.46	1.10
5. Has helped me find solutions to complicated problems.	.853	2.18	1.19
6. Has helped me rest.	.850	2.53	1.13
7. Has made me feel good.	.847	2.80	1.10
8. Has helped me be more creative.	.804	2.17	1.08
	Eigenvalue = 6.2	Cronbach's alpha = .96	
Average consolidated result of subscale for perceived positive impact of meditation exercises		2.20	.88
Perceived Negative Impact			
9. Has reduced my ability to adapt and be flexible.	.888	.25	.65
10. Has disturbed my thought processes after doing the exercises.	.865	.40	.73
11. Has reduced my creativity.	.861	.18	.52
12. Has evoked bad feelings in me.	.852	.33	.80
13. Has affected my focus after doing the exercises.	.847	.31	.69
14. Has affected my ability to memorise information after doing the exercises.	.839	.30	.67
15. Has generated negative emotions.	.810	.40	.80
16. Has raised my anxiety.	.740	.45	.76
	Eigenvalue = 5.4	Cronbach's alpha = .94	
Average consolidated result of subscale for perceived negative impact of meditation exercises		.30	.53

The teachers had experienced more positive than negative impact; the average consolidated result for the eight items of the Perceived Positive Impact of Meditation Exercises was higher, than for the eight items of the Perceived Negative Impact of Meditation Exercises. One-way ANOVA analysis revealed that the religious group of teachers experienced the positive impact of meditation exercises more often than the undefined group; Bonferroni test ($p < .05$). Regularity of practice varied from those who practised often to those who did so irregularly; Tamhane test ($p < .001$). Teachers who have practised meditation regularly have experienced a positive impact more frequently. There were no significant differences in perceived positive impact between teachers with differing years of practice; Tamhane test ($p = .05$). There were no significant differences between the perceived negative influences of meditation exercises depending on religiosity, regularity or years of practice ($p = .05$).

12. Teachers' level of mindfulness

We measured teachers' trait mindfulness with the Estonian MAAS (Seema et al., 2015). The MAAS mean was 4.06, SD = .70, mean sum 64.58 and SD = 11.18. There were no statistical differences between the mindfulness scores in the nursery school and school teacher T-tests ($p < .05$) and we therefore analysed their data together. One-way ANOVA analysis showed no significant differences in the MAAS scores either depending on religiosity, years of meditation practice or regularity of meditation practice ($p = .05$). Figure 2 shows the MAAS mindfulness scores depending on the regularity of meditation practice.

13. Teachers' personal practices and experience of using meditation exercises in teaching work

To determine whether the teachers' experiences of using meditation exercises in teaching work varied depending on their own personal meditation practices, we used Cross Table analysis illustrated with a bar chart (Figure 3). The chart depicts groups of teachers with no, irregular, occasional and regular personal meditation practices and their experiences of using meditation exercises in their teaching work.

Figure 2. Teachers' own meditation practice and level of the MAAS trait mindfulness.

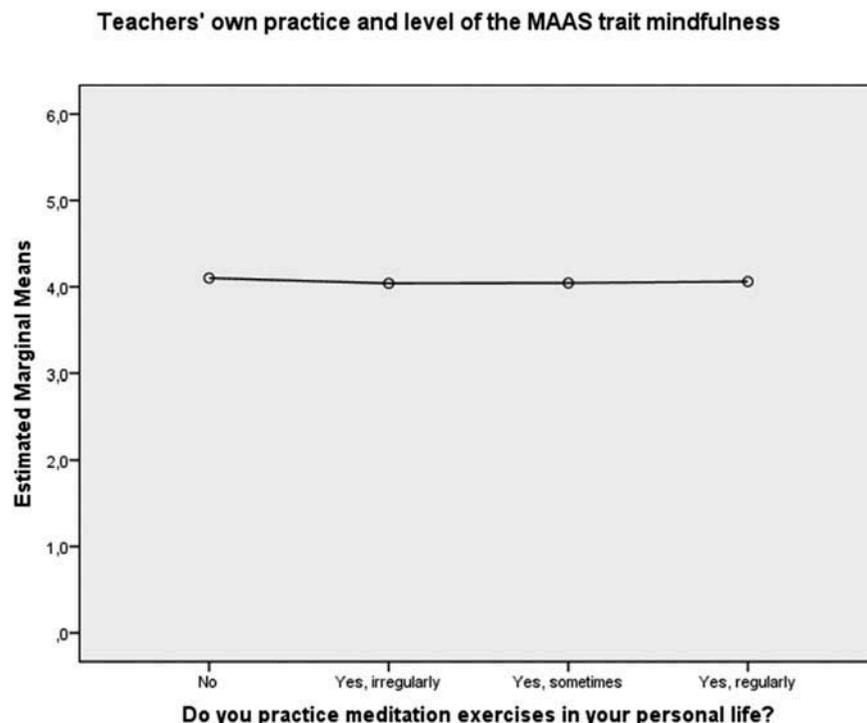
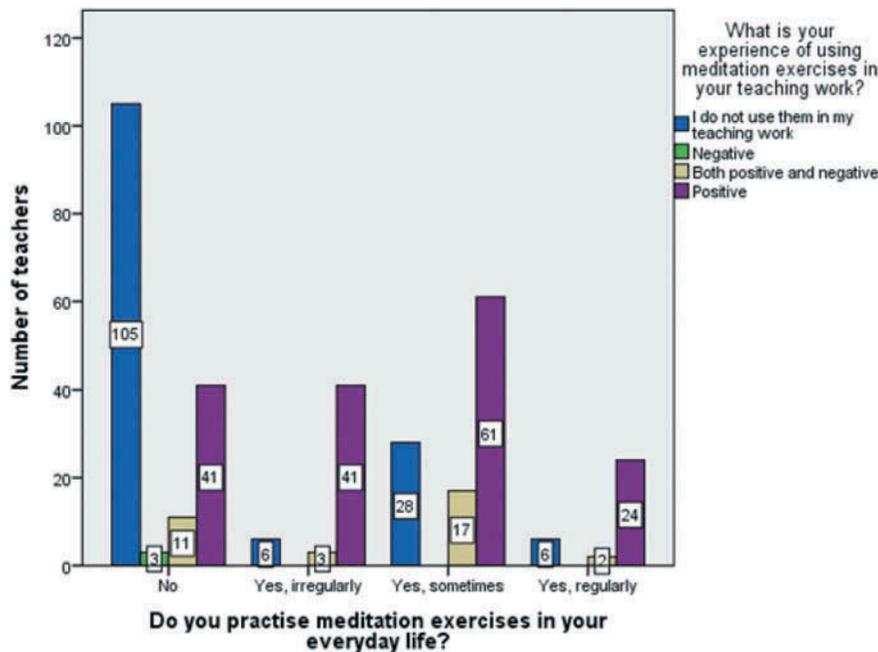


Figure 3. Cross table of teachers' own practices and experience of using meditation exercises in teaching work.



Independent of the teachers' own meditation practices, all of the teachers who use meditation exercises in their teaching work have had more positive than negative experiences. At the same time, only those teachers who have not practised such exercises by themselves have had negative experiences with students. The result is only descriptive, as some of the formed groups were smaller than five individuals, so the Chi-Square test does not allow the results to be generalised for the Estonian population.

14. Principles and theories that the teachers use

Of the 209 teachers who have used meditation exercises in teaching, just 24 answered the question: "What principles and theories do you use in carrying out MT exercises?" Eight teachers said that their practices were based on their inner feelings or intuition; five that their guiding principle was children's well-being (safety, pleasure and peace); three mentioned yoga; two mentioned personal experiences; and two mentioned the Minutes of Stillness company. Other nodes were mentioned only once or twice.

15. Discussion

Our research into teachers' mindfulness and meditation practices was carried out in a unique cultural context where nearly one-third of the teachers were secular and another third did not define their religion or beliefs. A quarter of the teachers were religious, among whom the majority identified as Christian, and several teachers claimed more than one religion. There were no purely Buddhist teachers in this sample, although four teachers mentioned Buddhism. The Soviet-period atheist policy that was in place 30 years ago, is the reason why Estonians are one of the least religious groups in Europe (Ringvee, 2011). In this study the biggest group of teachers were raised during the Soviet time when for certain professions, including teachers, it was unacceptable to be openly religious, believers were harassed and atheism was propagated in the schools (Library of Congress, 2016; Paternoster, 2018). This cultural background explains why mindfulness is a relatively new and foreign topic for Estonian teachers. Even the Estonian company Minutes of Stillness has avoided talking about the theory of mindfulness, as it comes from Buddhism. Estonian teachers were still not influenced by scientific mindfulness theories: none of them mentioned the internationally used term "mindfulness".

The study showed that the English (and international) word “mindfulness” is unknown to Estonian teachers, although the word “meditation” is more familiar.

The current study showed that teachers’ understanding of meditation exercises was individual and experiential, as the majority of teachers have not participated in any well-known mindfulness or meditation courses or retreats and meditation and mindfulness are not part of the teachers’ curriculum. The Estonian teachers mostly had naive concepts of the topic that reflect their own experience, knowledge and way of thinking (Kikas, 2003). The majority of teachers viewed meditation exercises as valuable quality time to oneself in peace and quiet. This is understandable because teachers’ work in schools involves a lot of communication which takes a lot of attention and energy. There were more teachers who saw meditation as a short-term practice, a moment for meditating, and only one teacher who had been practising it for more than 15 years said that life as a whole can be seen as a meditation exercise. Several teachers saw meditation as an attentional training exercise, but only a few mentioned any quality of attention and awareness. The study showed that the words “meditation” and “mindfulness” should not be used interchangeably as synonyms, because mindfulness meditation is not a self-evident practice. In literature, almost all definitions of mindfulness focus on the quality of attention, and different researchers have named different additional qualities to describe mindfulness: open and receptive (K. Brown & Ryan, 2003), non-reactive, non-judgemental and open-hearted (Kabat-Zinn, 2005). In this study, only one long-term meditator highlighted a non-judgemental attitude. It may be that moment-to-moment non-judgemental attitude is especially unfamiliar for teachers due to their professional role as assessors.

The current study indicated that Estonian teachers practise breathing exercises most often; minutes of stillness and yoga were also practised more than others. More than half of the teachers practised meditation exercises irregularly or occasionally, and only a few teachers said that they practised them regularly. Meditation, as a deliberate practice needs willpower (Kabat-Zinn, 2005). Deliberative processes are influenced by culture and language (Toomela, 2016). We suggest looking at mindfulness and meditation from a structural-systemic theory perspective: mindfulness is an internalisation process, a culturally created higher psychological process incorporating (cultural) signs in the structure of the mind. The main difference between natural and cultural processes is related to the developmental environment. Uninhibited processes develop in a natural environment; cultural higher-order processes related to the psyche only develop in an artificial, semantic environment (Toomela, 2016).

The perceived positive and negative impact of meditation was assessed with a new Estonian scale that had two clearly separate subscales with excellent Cronbach alpha values. We found that the teachers have noted generally more positive than a negative impact. Teachers have experienced that practising meditation exercises has sometimes left them feeling good, helped them to calm down and focus, helped them to regulate their emotions and helped them to rest. Only rarely have some teachers experienced negative emotions, anxiety and affected thinking during practice. Experimental research worldwide has demonstrated more positive than negative influences of practising meditation exercises (Lomas, Medina, Ivtzan, Rupprecht, & Eiroa-Orosa, 2017). The new Perceived Impact of Meditation Exercises Scale allows assessment of the influence of meditation exercises from teachers own perspective, as some positive or negative impacts may occur even when the trait mindfulness does not change (see R. Brown, 2017). Our study showed that teachers who have practised meditation regularly noted a positive impact more frequently, indicating that regular practice is an important factor in terms of impact. The duration of teachers’ personal practice was not specifically measured, but from the teachers’ answers to the open questions, it emerged that the duration of practising varied from brief moments to everyday mindfulness practice, and this variation should be measured and taken into account in the future while measuring the impact of meditation exercises.

An interesting result in the highly secular Estonian context was that religious teachers perceived the positive impact of meditation exercises more often than those who did not define their religion, suggesting that religiosity may be an important factor to study in detail even when measuring the impact of generally secular mindfulness and meditation programmes. Yalçin (2018) have found that spiritual expression predicts prospective teachers' higher MAAS trait mindfulness. In our study the teachers who had practised meditation exercises regularly and for longer did not have higher trait mindfulness than those who had not done so. This was a surprising result, since the MAAS should assess individual differences in frequency of mindful states over time and trait mindfulness can be developed with mindfulness meditation practice (Brown & Ryan, 2003). The result of our current study may mean either that: 1) Estonian teachers did not practice mindfulness meditation; 2) the MAAS does not measure mindfulness in populations who are not Buddhist and not educated in mindfulness; 3) Estonian teachers have actually no (meditative) trait mindfulness. In those naive populations, the MAAS scale probably measures a natural orientation towards the present moment that is complementary to the future orientation (see Seema & Sircova, 2013). The current study revealed that (meditative) trait mindfulness should not be measured in populations not educated in mindfulness, or the test scores in these populations should not be called "trait mindfulness".

A previous exploratory and confirmatory study (Seema et al., 2015) showed that the MAAS scale measures the construct similarly in the US and Estonian adult student populations and the MAAS scores had slight positive correlations with subjective well-being. We can conclude that the weaknesses of a post-positivistic study seem not to emerge when the whole study is carried out within the same paradigm. In the post-positivistic paradigm, the studied phenomenon is assessed with latent variable tests from the researcher's own theoretical perspective (Borsboom, Mellenbergh, & van Heerden, 2003). Williams and Kabat-Zinn (2011) have warned of the dangers of studying the first-person experience of meditative and consciousness disciplines from a third-person perspective. Teachers and researchers should be aware that the MAAS and other mindfulness latent variable measures have developed on the basis of researchers' understandings or theories of mindfulness and meditation. Quantitative methodology is able to show linear relationships, but development means qualitative changes, and therefore with linear scales, the studied phenomenon disappears—quantitative methodology cannot show what a thing or phenomenon is or how it develops (Toomela, 2011). Professionals should maintain a critical perspective while reading studies conducted with third-person perspective methods, and when applying meditation exercises in the educational context teachers should consider the perspectives and development of their students (Burrows, 2018).

The study made it possible to demonstrate a paradox in "mindfulness" research: if the latent scales (based on researchers' theoretical views of the construct) do not fit together with those being investigated, the study results may be questionable. Teachers and researchers should be aware that the top-down construct of any diagnostic category can shape individual as well as collective view of reality (Siegel, 2017). Still, it would be worth testing latent variable analyses at the level of the individual using case studies (Borsboom et al., 2003) in the context of mindfulness training and interventions, where the questionnaires may support educators' and students' self-reflection on mindfulness (McCown et al., 2010). Top-down construction and using theoretical filters is essential at times to distance from direct bottom-up experience to reflect and make sense of things (Siegel, 2017).

We should stress that in the study we talk about practising meditation exercises, not mindfulness exercises, because the teachers surveyed described a large variety of meditation practices. In the Estonian sample studied, more than half of the teachers have used meditation exercises in their teaching work. A serious result was that Estonian teachers had used almost no theories or principles when carrying out their meditation exercises beyond their own intuition and experience and the children's well-being, raising the question: what practices do the Estonian teachers actually follow? Even while the current study did not find out whether it matters if the teachers

who teach mindfulness are themselves mindfulness practitioners or not (Roodenrys et al., 2017), the study does indicate that a teacher's own meditation practice may help prevent the use of meditation exercises in an inappropriate fashion with students. As mindfulness is a construct and a practice of metacognition (Jankowski & Holas, 2014), we can make a logical conclusion that for teaching it, certain conceptual, procedural and metacognitive knowledge is required (see Anderson et al., 2013).

Since the Estonian Ministry of Education and Research and two biggest Estonian universities had accepted our teachers' mindfulness study at 2016, a practical consequence was that Minutes of Stillness organization changed their strategy and programs and now explicitly introduce mindfulness theories in their courses (Vaikuseminutid, 2018).

16. Conclusion

Conducted in a unique cultural context with a mixed-design, this study provided an opportunity to decentre from the researchers' own theory of mindfulness and to view mindfulness and meditation from a new perspective. The sample of Estonian teachers was not conditioned by mindfulness theories and practice. Toomela (2016) has said that there is no way to determine the role of anything—including language—if studies are only conducted when the phenomenon or thing in question is present.

The study showed that there is no common (trait) mindfulness without a mindfulness theory and practice, and therefore it cannot be measured using a quantitative scale in populations who are not educated in mindfulness. Mindfulness and meditation are not synonyms in this study, as the MAAS trait mindfulness scores did not vary depending regularity and length of teachers' meditation practices. Teachers have practised different types of meditation exercises and generally have perceived more positive than a negative impact. We suggest that researchers should be precise and not call all meditation exercises indiscriminately as mindfulness exercises. Several types of meditation exercises exist and their perceived influence can be measured with the Perceived Impact of Meditation Exercises Scale we introduced in this article.

The study showed that mindfulness is not a natural human characteristic that describes people irrespective their language, culture and religion, but a culturally developed higher-order process. That conclusion re-evaluates the first author's own dissertation (Seema, 2014). While trying to assess the para conceptual experience of mindfulness with different questionnaires, it seems that science has overlooked the role of language, mindfulness theory and philosophy itself in developing regular meditation practices and mindfulness. A theoretical understanding of mindfulness and the motivation to practise—either worldly or spiritual—are important factors to study in detail when assessing the influence of meditation exercises.

16.1. Limitation of the study

Only the MAAS trait mindfulness scale was used to measure mindfulness. As most of the respondents were females, generalizations cannot be made on males. However, in Estonian secondary schools, there are only 14% of male teachers compared to 86% of females (Eesti Statistika, 2018); in nursery schools, there are even less male teachers; therefore, the sample is representative of Estonian teachers. Only teachers' interpretations were explored; future research should explore students' perspectives, use observations, case studies, action research and longitudinal designs.

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Ethical standards

The Tallinn Medical Research Ethics Committee approved the Pilot Study (KK 1575, 29.08.16). Informed consent was obtained from all individual participants included in the study. All persons gave their written informed consent prior to their inclusion into the Pilot Study. Details that might disclose the identity of the subjects under the Main Study were not included in the questionnaire.

Conflict of interest

The authors declare that they have no conflict of interest.

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