



Mindfulness and teachers' diversity awareness: indirect effect of mindful teaching in a sample of in-service teachers

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Abstract

The question of addressing the diversity of students is one of the most pressing challenges for teachers. Practicing mindfulness can serve as a valuable support mechanism for teachers navigating situations that challenge diversity awareness. In this study, we test the indirect effect of mindfulness in teaching on the relationship between mindfulness and diversity awareness. We operationalise mindfulness in teaching through its interpersonal and intrapersonal dimension and diversity awareness through teachers' self-efficacy in teaching in diverse settings, their cultural beliefs, and their flexibility/openness. We use data from a Slovene sample from the HAND IN HAND: Empowering Teachers Across Europe to Deal with Social, Emotional and Diversity Related Career Challenges (HAND:ET) project ($N=207$; 94.2% females). The path analyses showed: (i) direct paths between mindfulness and all indicators of diversity awareness; (ii) direct paths between mindfulness and the intrapersonal dimension of mindfulness in teaching (but not the interpersonal dimension); (iii) direct paths from dimensions of mindfulness in teaching to indicators of diversity awareness; and (iv) significant indirect paths leading from mindfulness through the intrapersonal dimension of mindfulness in teaching to indicators of diversity awareness. Implications for research and practice in regard to teachers' professional development are discussed.

Keywords Teachers · Mindfulness · Diversity awareness · Slovenia

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1 Introduction

In a fast-changing world, the role of teachers, and the expectations placed upon them, are rapidly changing as they face various challenges, including increasing the social and cultural diversity in classrooms (Council of the EU, 2014; Council of the EU, 2015). Further on, TALIS findings (OECD, 2019a) indicate that teachers often do not feel equipped to navigate multicultural and multilingual classrooms. Up until now, much of the work in diversity research has focused on educating teachers about the importance of diversity and on transforming the curriculum to embody this diversity. Nevertheless, a gap remains between teachers' conceptual understandings of diversity and their actual abilities in terms of responding to challenging encounters with diversity. Mindfulness is one of the possible support mechanisms for teachers in this situation. Specifically, mindfulness supports teachers' ability to focus and stabilise their awareness of the present moment and to be aware of their patterns of behaviour and reactions when under pressure, including those influenced by prejudices and also in situations that trigger their diversity awareness.

Mindfulness is defined as unbiased present-centred awareness accompanied by states of clarity and compassion. Being mindful means being self-aware, open, receptive and non-judgmental (Kabat-Zinn, 1990). It has proven advantages for individual well-being and the quality of relationships with others. On the individual level, the well-documented research evidence relates to benefits for attention, regulation of emotions, stress relief and improving overall health in clinical and non-clinical samples (see Baer, 2003; Brown & Ryan, 2003; Gotink et al., 2015; Gu et al., 2015; Hölzel et al., 2011; Khoury et al., 2013). On the relational level, mindfulness is associated with empathy and other prosocial emotions (see Dekeyser et al., 2008; Himichi et al., 2021; Lutz et al., 2004).

In addition to an overall increase in the number of mindfulness studies (Baminiwatta & Solangaarachchi, 2021), there is documented interest in studying the effects of mindfulness in education after 2009, although only 6% of the studies reviewed focused on teachers (Schonert-Reichl & Roeser, 2016). Research on mindfulness in school settings has tended to focus on its implementation and the effects of mindfulness on students. Therefore, additional studies involving teachers are needed. According to the theory of change model (Roeser et al., 2012) teachers' professional development, as outlined in the model, benefits greatly from mindfulness training. High-quality mindfulness training, when combined with active teacher engagement, enhances key skills such as emotional regulation, mindfulness, and self-compassion. This, in turn, improves teachers' well-being and fosters more positive and structured classroom dynamics, including better organization and emotional support. The Roeser model is backed by studies demonstrating that mindfulness training increases mindfulness and decreases stress and burnout among teachers (Benn et al., 2012; Costa et al., 2024; Dave et al., 2020; Jennings & DeMauro, 2017; Roeser et al., 2022), while also enhancing their professional competencies (Jennings et al., 2013; Poulin et al., 2008; Roeser et al., 2022). Further on, Hirshberg et al. (2022) observed a long-term reduction in implicit ethnic attitudes among preservice teachers after participating in a mindfulness intervention. However, the path between being mindful

and actually behaving mindfully in the classroom is only starting to become clearer with the use of new measures adapted for the educational setting (Frank et al., 2016).

Frank et al. (2016) characterised mindfulness in teaching in two dimensions: intrapersonal and interpersonal. The intrapersonal aspect of mindfulness in teaching refers to mindfulness directed inward, toward one's own experiences. It encompasses awareness, attentiveness, and a focus on the present moment. The interpersonal dimension of mindfulness involves being aware of and mindful in interactions with others. It includes fully attentive listening, present-centered awareness of both one's own and others' emotions, openness and acceptance of others' thoughts and feelings, self-regulation (characterized by reduced emotional reactivity and automatic responses), and compassion for oneself and others (Duncan et al., 2009; Frank et al., 2016). Self-regulating abilities supported by mindfulness are self-regulating behaviours that allow teachers to be more aware of events going on in the classroom and attend to students' needs and behaviour without distracting others (Frank et al., 2016). Research (Frank et al., 2016) showed that interpersonal mindfulness is associated with teachers' burnout and self-efficacy, while the same was not confirmed for intrapersonal mindfulness. A similar association, but for both dimensions, was established in Aslan Gördesli's (2022) study in which teachers' intrapersonal and interpersonal mindfulness was directly associated with their self-efficacy in classroom management. According to the same study, mindfulness in teaching was linked to teacher burnout, both directly and indirectly, through its impact on self-efficacy in classroom management.

Teachers' self-efficacy as a judgment of one's own capabilities to trigger student engagement and learning, even when students are difficult or unmotivated, is also a reflection of how well teachers feel prepared to deal with diversity-related challenges. By diversity awareness we mean being aware of diversities as well as inequalities in the classroom on the one hand, as well as one's own reactions to these diversities and inequalities. Inequality and diversity are two inseparable dimensions of social justice that are important aspects of teaching (Pikić Jugović et al., 2023). The diversity dimension is aimed at gaining genuine knowledge about, and respect for, all, and especially for marginalised social groups, including those regarding class, race, ethnicity, gender, sexual orientation, physical ability and religion (Mosley-Howard et al., 2011). The focus of the inequality dimension is on understanding the practices (both individual and institutional) that structure social relations unequally, as well as the willingness to act against practices that generate inequalities (Bell, 2016). The social justice dimension of education largely depends on how teachers perceive and react to diversity and inequality in their classrooms (Pikić Jugović et al., 2023), as well as an understanding of how these variables are connected to different educational outcomes (Matić Bojić et al., 2024).

A precondition of the development of diversity awareness is openness to experience and reflection. As mindfulness relates to some aspects of openness, especially to the openness to experience dimension, which is characterised by the receptivity toward, and interest in, new experiences (Brown & Ryan, 2003), it can be a starting point for promoting diversity awareness and equipping teachers to work in diverse (and unequal) settings. Mindfulness by definition leads to important aspects associated with diversity awareness and critical consciousness, such as patience, trust, non-

reactivity, wisdom and compassion (Bishop et al., 2004; Kabat-Zinn, 2015). From a social perspective, mindfulness should promote a more open, accepting and less stereotypical view of people belonging to other social groups, i.e. outgroups (Fuochi et al., 2023).

The possible mechanisms leading from mindfulness to diversity awareness are: a change in self-awareness (recognising automatic habits and automatic patterns of reactivity, as well as an increased awareness of momentary states of body and mind); a change in self-regulation (regulation of emotions, heightened self-compassion, increased emotional and cognitive flexibility, increased non-attachment and acceptance); and increased transcendence (a stronger awareness of interdependence between the self and others, and heightened compassion) (Verhaeghen et al., 2020). Similarly, in the theoretical model by Kang et al. (2013), it is pointed out that mindfulness can help individuals recognise and remove maladaptive automatised emotional and cognitive processes and lower their cognitive and emotional reactivity, which can lead to reduced prejudice and improved attitudes toward outgroups (Kang et al., 2013). Kang (Kang et al., 2013) also operationalises mindfulness with four components, namely awareness, sustained attention, focus on the present moment and non-judgmental acceptance, and in particular stresses the importance of awareness in regard to diversity awareness. More specifically, awareness brings attention to implicit stereotyping and to one's own biases in which automated reactions occur outside of one's awareness. Later, awareness makes room for new perspectives and promotes context sensitivity, revealing that behaviours can be understood in multiple ways (Kang et al., 2013). An additional mechanism worth mentioning is decentring (Shapiro et al., 2006), which involves a metacognitive awareness of re-perception or distancing oneself from one's own reactions, which again opens the path for new perspectives and gives individuals the option of reframing their reactions – including those associated with diversity awareness.

There are empirical studies supporting the link between mindfulness and diversity awareness (or related constructs) (Costa et al., 2024; Djikic et al., 2008; Hunsinger et al., 2019; Lueke & Gibson, 2015), as well as recent meta-studies (Oyler et al., 2022). In the meta-analysis, the significant negative relationship between mindfulness and intergroup bias was confirmed and mediators were listed: internal motivation to respond without sexism, positive other-regarding emotions, empathy, psychological stress, acceptance and flexibility, and automaticity (Oyler et al., 2022). To date, mindfulness in teaching has not been tested for its indirect effect in the relationship between mindfulness and diversity awareness.

1.1 Current study

In the current study, we hypothesise that mindfulness supports mindful behaviour in the classroom and promotes teachers' diversity awareness. We will test the indirect effect of mindfulness in teaching on the relationship between mindfulness and diversity awareness. Although mindfulness has been at the forefront of research in recent years, including in the educational setting, it hasn't been properly contextualised with a measure focusing on the educational context. Therefore, the current study employs a measure of mindfulness in teaching, exploring how mindfulness

manifests in the teaching experience. Mindfulness in teaching is operationalised by its interpersonal and intrapersonal dimension. Diversity awareness is operationalised by: (i) teachers' self-efficacy in teaching in diverse settings; (ii) teachers' cultural beliefs; and (iii) teachers' flexibility/openness. Teachers' self-efficacy in teaching in a diverse setting is defined as a teacher's judgment of their ability to demonstrate or motivate the students' participation and learning outcomes, even in classrooms where the students' diversity is high. With teachers' cultural beliefs we target their multicultural and egalitarian beliefs about diversity. And with flexibility/openness we target adaptability and openness to diversity. There has not yet been a study connecting mindful teaching with diversity awareness and testing its indirect effect on the relationships between mindfulness and diversity awareness at the same time. As emphasised by Schonert-Reichl and Roeser (2016), research is needed to show or investigate the benefits of mindfulness not only for oneself (regulation of emotions, stress release) but also for others and society as a whole (empathy, compassion, generosity, altruism).

2 Method

2.1 Participants

We use data from a Slovene sample of the HAND IN HAND: Empowering Teachers Across Europe to Deal with Social, Emotional and Diversity Related Career Challenges (HAND:ET) project. The sample consisted of first- to ninth-grade in-service teachers ($N=207$) from 20 basic schools (ISCED 1 and ISCED 2, 1st to 9th grade students aged between 6 and 15) in Slovenia. They were mostly female: 94.2%. On average, they were 41.67 years old ($SD=7.69$) and had 15.27 years of teaching experience ($SD=8.91$).

2.2 Instruments

During the evaluation of the HAND IN HAND: Empowering Teachers Across Europe to Deal with Social, Emotional and Diversity Related Career Challenges (HAND:ET), participants completed a series of measurement tools designed to assess their social and emotional competencies as well as their diversity awareness. In the current study we use the following tools:

The Mindful Attention Awareness Scale (MAAS, Brown & Ryan, 2003) is a scale for assessing dispositional mindfulness as a state of mind in which the attention only observes what is happening at the present moment. It focuses on core characteristics of mindfulness, namely open and receptive awareness. It consists of 15 items (e.g. "I break or spill things because of carelessness, not paying attention or thinking of something else") on a six-point scale (1 = Almost never, 2 = Very infrequently, 3 = Somewhat infrequently, 4 = Somewhat frequently, 5 = Very frequently, 6 = Almost always). Low score indicates high mindfulness. The original scales were translated into Slovenian using a double-blind translation approach. The internal consistency, Chronbach's alpha, of the scale in the current sample is adequate at 0.889.

Mindfulness in teaching (Frank et al., 2016) measures teachers' focus during instruction and daily school activities, emotional awareness and self-regulation, as well as responsivity and sensitivity during student–teacher interactions. It consists of 14 items on a five-point scale (1 = Never true, 2 = Rarely true, 3 = Sometimes true, 4 = Often true, 5 = Always true) measuring two dimensions. Intrapersonal mindfulness measures the difficulty in remaining focused and present (9 items, e.g. “When I am teaching it seems I am running on automatic without much awareness of what I am doing”, Chronbach's $\alpha = 0.834$), and Interpersonal mindfulness measures the ability to respond to students in a controlled and positive manner (5 items, e.g. “Even when it makes me uncomfortable, I allow my students to express their feelings”). High scores indicate high mindfulness in teaching. The original scales were translated into Slovenian using a double-blind translation approach. The internal consistency, Chronbach's α , of the scale in the current sample is adequate at 0.708.

The PISA 2018 Teachers' Self-Efficacy to Teach in Diverse Classrooms (OECD, 2019b) scale measures teachers' self-efficacy in teaching in diverse classrooms with five items (e.g. “I can take care that students from different backgrounds work together”) following the question: “How do you judge your own competence to teach in a class with a high degree of diversity? (When answering this question please think of diversity in terms of cultural and subcultural background, social background, sex and gender as well as outer appearance)”. The respondents answer on a four-point scale (1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree). High score indicates high self-efficacy. The internal consistency, Chronbach's α , of the scale in the current sample is adequate at 0.899.

The Teacher Cultural Beliefs Scale (Hachfeld et al., 2011) assesses multicultural and egalitarian beliefs about diversity, which reflect favourable attitudes toward immigrant students. They differ with regard to how cultural diversity is believed to be best accommodated in school. It consists of nine items (e.g. “In the classroom, it is important to be responsive to differences in students' cultural background”) on a four-point scale (1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree). High score indicates more favourable beliefs. The original scales were translated into Slovenian using a double-blind translation approach. The internal consistency, Chronbach's α , of the scale in the current sample is adequate at 0.924.

The Flexibility/Openness Scale (Denson et al., 2017) was adapted from the “ICU Teacher Tool” – one item was used from the “Adaptability/Flexibility” scale (“I like to challenge myself to try out new things”) and three from the “Openness to cultural diversity” scale (e.g. “I feel comfortable around people with diverse backgrounds”). It consists of four items on a six-point scale (1 = Entirely disagree, 2 = Mostly disagree, 3 = Somewhat disagree, 4 = Somewhat agree, 5 = Mostly agree, 6 = Entirely agree) and measures the capability to adapt/act flexibly. High score indicates flexibility and openness. The original scales were translated into Slovenian using a double-blind translation approach. The internal consistency, Chronbach's α , of the scale in the current sample is adequate at 0.861.

2.3 Procedure

This study is a part of the HAND IN HAND: Empowering Teachers Across Europe to Deal with Social, Emotional and Diversity Related Career Challenges (HAND:ET) which included seven EU countries (Austria, Croatia, Denmark, Germany, Portugal, Slovenia, Sweden)). HAND:ET is a policy experiment project (randomised experimental design with control group) that focused on in-service teachers (and their principals and school counsellors) by supporting their development of social and emotional and diversity awareness competencies to empower them to deal with the complexity of everyday working life with increasingly diverse classrooms and enable them to deal flexibly with new challenges by offering the HAND IN HAND: Empowering Teachers programme as a set of innovative participatory activities and learning experiences. Across all with five (Austria, Croatia, Portugal, Slovenia, Sweden) countries in-service teachers were invited to participate. In the current study, we use Slovenian sample. In Slovenia, we prepared and distributed invitation leaflets for all (ISCED 1 and ISCED 2, 1st -9th grade) basic schools in Slovenia; 39 expressed an interest. Informed consent forms and detailed HAND IN HAND: Empowering Teachers intervention descriptions were forwarded. The final sample, which encompassed 28 schools, was sent out to evaluation partner not involved in intervention partner in charge of randomisation and selection of the 20 schools, which were then participating in either the experimental or control condition. The upper limit was set for the number of schools as well as for the number of the school staff participating in the HAND IN HAND: Empowering Teachers intervention, which enabled us to implement the HAND IN HAND: Empowering Teachers intervention with fidelity needed. At the school level the number of schools was set to 10 for the intervention group and 10 for the control group, at the level of school staff, the number of teachers was limited to 10 per school, with class teachers favoured. All participants gave informed consent. The participants received an attendance certificate after completing the HAND IN HAND: Empowering Teachers programme that they could use in their career promotion. During the evaluation, a set of online questionnaires was administered, covering social and emotional competencies, diversity awareness, and demographic information. before entering the HAND IN HAND: Empowering Teachers programme (T1) in September 2022 and after the completion of the HAND IN HAND: Empowering Teachers programme in June 2023 (T2). For this study, we only present data from Slovenia from T1 for the selected measures. As the study is part of a larger international research project, it has undergone ethical committee approval in several universities (e.g. Mid Sweden University) HAND:ET was pre-registered (including the design of the study, the desired sample size, constructs measured, hypothesised effects and planned analyses) at the Open Science Framework (OSF) (<https://doi.org/10.17605/OSF.IO/TRNFX>). The platform supports collaboration and facilitates the open sharing of research materials, data and outcomes. The analysis of the current study is registered as part of additional exploratory analyses.

2.4 Data analysis

Following the analysis of descriptive statistics, correlations, and reliabilities using IBM SPSS Statistics 26, we performed Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) using Mplus (Version 8.1; Muthén & Muthén, 1998–2017). Separate CFA models were applied for each construct. Modifications based on modification indices, when supported by the content of the items, were implemented by adding correlations between items. The CFA models were then incorporated into the indirect effect model in the second step. Item loadings were interpreted based on the criteria outlined by Tabachnick and Fidell (2006), with cut-off values: 0.32 (poor), 0.45 (fair), 0.55 (good), 0.63 (very good), and 0.71 (excellent). Model fit was evaluated using chi-square (χ^2), Comparative Fit Indices (CFI), Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR), in accordance with the guidelines provided by Hu and Bentler (1999) for a good fit: CFI > 0.95, RMSEA < 0.06, and SRMR < 0.08. For adequate fit, the following cut-offs were applied: CFI > 0.90, RMSEA < 0.08, and SRMR < 0.08 (Hair et al., 1998).

3 Results

Means, standard deviations, and correlations for the questionnaire's mean scores are presented in Table 1 to offer a summary of the data. However, in the CFA and SEM analyses, individual questionnaire items were treated as indicators of latent variables. In accordance with Curran et al.'s (1996) recommendation for ensuring multivariate normality in SEM, no predictors required transformation due to excessive skewness or kurtosis (skewness and kurtosis for all predictors were between -2 and 2). Multicollinearity tests for predictors were performed indicating no violation of multicollinearity (VIF between 1.107 and 1.647).

Each construct was evaluated using CFA models, with items representing the indicators. The fit indices are summarized in Table 2. All constructs showed good fit, with exception of RMSEA in Mindfulness. The inconsistency between CFI and RMSEA is well documented in the research and the reasons for it are still being investigated, however, as suggested by Lai and Green (2016) an alternative index can be used as a

Table 1 Descriptive statistics and correlations across scales

	M	SD	1	2	3	4	5
1 Mindfulness	2.93	0.68					
2 Mindful teaching: Intrapersonal	3.93	0.53	−0.582**				
3 Mindful teaching: Interpersonal	4.03	0.52	−0.129	0.305**			
4 Self-efficacy to teach in diverse settings	3.26	0.48	−0.015	0.159*	0.294**		
5 Teacher cultural beliefs	3.44	0.45	0.006	0.094	0.261**	0.490**	
6 Flexibility/openness	4.62	0.93	−0.019	0.087	0.196	0.284**	0.227**

Notes: * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Table 2 Model fit indices for latent constructs

Latent constructs	$\chi^2(df)$		CFI	RMSEA [90% CFI]	SRMR
Mindfulness	265.934 (84)	***	0.960	0.102 [0.098–0.116]	0.048
Mindful teaching	172.006 (75)	***	0.963	0.079 [0.064–0.095]	0.048
Self-efficacy to teach in diverse setting	4.865 (3)	**	0.999	0.055 [0.000–0.140]	0.010
Teacher cultural beliefs	58.284 (23)	***	0.995	0.086 [0.059–0.114]	0.026
Flexibility/openness	1.087 (2)	**	1.000	0.060 [0.000–0.115]	0.008

Notes: *** $p \leq 0.001$, ** $p \leq 0.05$, * $p \leq 0.10$

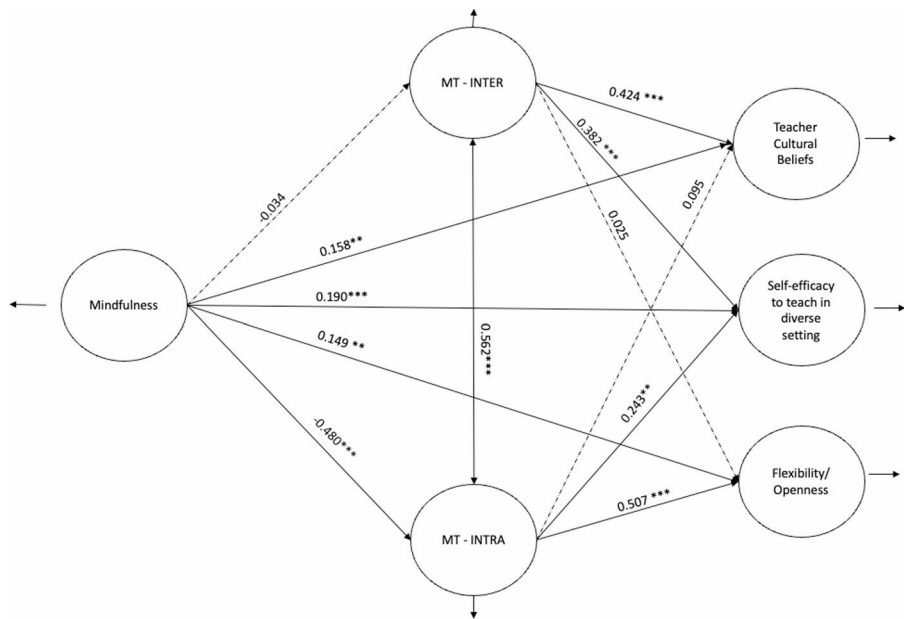


Fig. 1 Relationships between mindfulness, mindfulness in teaching and diversity awareness (self-efficacy in teaching in diverse settings, teachers' cultural beliefs and flexibility/openness): structural equation model. The numbers present standardised coefficient estimates. MT-INTER: Mindfulness in teaching – interpersonal dimension; MT-INTRA: Mindfulness in teaching – intrapersonal dimension. Solid lines represent significant paths or correlations and dashed lines indicate non-significant paths or correlations. ** $p < 0.05$, *** $p < 0.001$

combination of both, $\gamma = \text{RMSEA} - (1 - \text{CFI})$, and if γ is larger than 0, as in our case, CFI is a better approximation of the fit.

We examined indirect effect model to analyze the direct and indirect pathways from mindfulness and mindful teaching to self-efficacy in teaching diverse settings, teachers' cultural beliefs, and flexibility/openness. Figure 1 the model demonstrated a good fit: $\chi(1006) = 1409.653$, $p = 0.000$, $\text{CFI} = 0.932$, $\text{RMSEA} = 0.044$, 90% CI [0.038, 0.049], $\text{SRMR} = 0.064$.

There are four significant direct paths leading from mindfulness: to mindfulness in teaching: intrapersonal (and not to mindfulness in teaching: interpersonal) and to all constructs related to diversity awareness: self-efficacy to teach in diverse settings, teacher cultural beliefs and flexibility/openness. Higher mindfulness is associated

with higher mindfulness in teaching: intrapersonal. Lower mindfulness is associated with diversity awareness. Further on, significant direct paths lead from mindfulness in teaching: interpersonal to teacher cultural beliefs and to self-efficacy to teach in diverse settings. Higher mindfulness in teaching: intrapersonal is associated with higher diversity awareness. From mindfulness in teaching: intrapersonal the significant paths lead to flexibility/openness and to self-efficacy to teach in diverse settings. Higher mindfulness in teaching: interpersonal is associated with higher diversity awareness. In addition, there are two significant indirect paths leading from mindfulness through mindfulness in teaching: intrapersonal to self-efficacy to teach in diverse settings ($\beta = -0.117$; $p=0.012$) and to flexibility/openness ($\beta = -.243$; $p=0.000$). Higher mindfulness when combined with higher mindfulness in teaching: intrapersonal leads to higher diversity awareness. The indirect path from mindfulness through mindfulness in teaching: interpersonal to all constructs related to diversity awareness is insignificant.

4 Discussion

In this study, we tested the indirect effect of mindfulness in teaching on the relationship between mindfulness and diversity awareness. We have based our assumptions on the characteristics of mindfulness that allow an individual to become aware of their inner motives, reactions, biases and societal privilege, which has the potential to lead to more mindful behaviour in the classroom and later on to support diversity awareness.

First of all, we wanted to test whether mindfulness is manifested in mindfulness in teaching – that is, if being mindful actually means that you also bring mindfulness into the classroom when you teach and interact with students. Our findings show twofold relationships: the path leading from mindfulness to mindfulness in teaching on an intrapersonal level is significant and positive, while the path leading from mindfulness to mindfulness in teaching on an interpersonal level is insignificant. That means that when teachers report higher mindfulness, that is in fact reflected in their teaching on the inner, individual level, but it is not at the same time reflected on a relational level. The first step is taken as the intrapersonal dimension includes the process of inner observation of thoughts, feelings, emotions and behaviours, which may help teachers to also understand their negative behavioural patterns and create ways to manage them in self-compassionate ways (Jennings et al., 2017, 2013; Jennings, 2014). Although there is a conceptual overlap between mindfulness and the intrapersonal dimension of mindfulness in teaching, the latter differs from mindfulness with a focus on specific classroom-related states of awareness – that is, teachers' capacity to maintain awareness of what is happening in the classroom at any given time but switch attention to respond to individual children's needs flexibly (Frank et al., 2016).

Secondly, we were interested in the direct relationship between mindfulness and diversity awareness. All the paths leading from mindfulness to diversity awareness are significant but negative. That means that the more mindful teachers are, the less they feel efficacious in teaching in diverse settings, the less positive they feel towards diversity and the less open and flexible they are. So, teachers' self-reported levels of mindfulness in everyday life were transferred to the teaching context, on an intrapersonal level, how-

ever mindfulness directly did not support their diversity awareness. It might be that with higher mindfulness higher self-awareness is reflected also in being aware of ones' own biases which would be reflected in lower levels of reported self-efficacy, cultural beliefs and flexibility, openness.

On a contrary, the paths leading from dimensions of mindfulness in teaching to diversity awareness are significant and positive. From the interpersonal dimension, the significant paths lead to teachers' beliefs regarding diversity and to their self-efficacy in teaching in diverse settings. From the intrapersonal dimension, the significant paths lead to flexibility and openness and to teachers' self-efficacy in teaching in diverse settings. It seems that when mindfulness is actually manifested in teaching it is associated with higher diversity awareness.

As for beliefs regarding diversity, these are supported by characteristics of the interpersonal dimension of mindfulness in teaching – that is, present-centred awareness of emotions experienced by oneself and others in interaction, and through openness, acceptance and receptivity to others' thoughts and feelings. As for self-efficacy to teach in diverse settings, the characteristics of the interpersonal dimension most probably supporting the process of self-efficacy to teach in diverse settings are self-regulation, which includes low emotional and behavioural reactivity, and low automaticity in response to the everyday behaviour of others, as well as compassion to oneself and to others. The significant associations between the interpersonal dimension and other types of self-efficacy, namely behavioural and socio-emotional, were also found in Frank et al.'s (2016) study. More specifically, interpersonal dimensions predicted behavioural and socio-emotional self-efficacy in six months' time. The connections between the interpersonal dimension and behavioural self-efficacy were replicated in other studies using the same measure as well (e.g. Li et al., 2019; Moyano et al., 2021). In the context of education, teacher self-efficacy has been linked to perseverance with challenging students in the classroom (Robertson & Dunsmuir, 2013). In the aforementioned studies (e.g. Li et al., 2019; Moyano et al., 2021), the same was not true for the intrapersonal dimension. Our study also showed, however, a significant association with two indicators of diversity awareness for the intrapersonal dimension. The significant paths from the intrapersonal dimension of mindfulness in teaching in our case lead to flexibility and openness and to self-efficacy in teaching in diverse settings. The findings are aligned with studies showing that mindfulness training can increase cognitive flexibility (review in Kang et al., 2013) and that cognitive flexibility is positively related to meditation practice and self-reported levels of mindfulness (Moore & Malinowski, 2009).

Our findings support the importance of mindfulness in teaching for the diversity awareness of teachers. Current models of stereotype reduction argue that decreasing stereotyping is possible when people are aware of their own biases. Being aware of one's mental processes – a key ingredient of mindfulness – can reduce these automatised categorisations. This de-automatisation process can change negative beliefs and reactions into positive ones (Kang et al., 2013). Also, in our case, mindfulness in teaching (and not mindfulness per se), especially the interpersonal dimension, lead to more positive beliefs for outer group members. When through mindfulness in teaching: intrapersonal one reflects on oneself and ones' behaviour in classroom (also own membership of the groups, one owns' privilege, and prejudices) that is related to greater acceptance of others, which is reflected in their beliefs and one's self-efficacy in teaching in diverse settings.

The indirect paths were significant from mindfulness through the intrapersonal dimension of mindfulness in teaching to diversity awareness and not through the interpersonal dimension of mindfulness in teaching. Perhaps the indirect effects can shed a light in the contrary findings in regards to mindfulness, mindfulness in teaching and diversity awareness. When mindfulness helps teachers to be more aware of themselves while teaching this leads to higher diversity awareness, while mindfulness on its own does not lead to higher diversity awareness. When teachers are more mindful and thus at the same time use mindfulness on a personal level in their teaching, this supports their diversity awareness. Interestingly, the direct link between mindfulness and the interpersonal dimension of mindfulness in teaching, as well as all indirect pathways through this interpersonal dimension to diversity awareness, were found to be insignificant. However, since the interpersonal dimension of mindfulness in teaching does contribute to diversity awareness, it raises the question of its origin if not from mindfulness. Recent studies (Barata-Gonçalves et al., 2024) did show significant associations with positive solitude, i.e., enjoying time being with yourself. So, this might be the path worth exploring. Similar findings on a correlation level were found in a series of studies using the same two measures (Aslan Gördesli et al., 2019; Barata-Gonçalves et al., 2024). More specifically, mindfulness was found to have a strong correlation with intrapersonal mindfulness and a weak one with the interpersonal dimension. While the intrapersonal dimension is important, the interpersonal dimension tackles the relational processes that are vital for learning and teaching.

Our findings support the theory of change model (Roeser et al., 2012) in expanding the specific knowledge on the constructive processes in the classrooms. In the model, constructive processes in the classroom are an outcome following successful mindfulness intervention. The model that we have tested starts with the mindfulness of teachers and later on continues to disentangle the change that can happen in the classroom if teachers use their mindfulness in their everyday teaching practice. Our findings add specificity to the model, indicating the importance for actual use of mindfulness in the classroom.

4.1 Limitations and directions for future research

Despite the new insights into the relationship between mindfulness, more specifically mindfulness in teaching, and diversity awareness, the study has several limitations that we would like to point out. Firstly, we only relied on self-report data, which may be affected by response bias. This could be especially the case with the measures tackling diversity awareness, as prejudice is generally negatively perceived. As these are limitations, it is also an argument as to why our study is needed, as it shows how important it is to be present with one's thoughts, feelings, emotions and responses when it comes to diversity and especially how to transform this presence in the classroom. One of the possible ways we could overcome the self-report bias is to include other-reports, in our case especially students (i.e. future studies would then have the power to explore the relationship between self-reported teachers' mindfulness and their inclusive behaviour as observed by their students). Secondly, we only relied on convenience samples of Slovene in-service teachers (it is not representative sample), and thus our findings may not necessarily be generalisable to Slovene teachers or to other cultural contexts. The study sample was limited to first- to ninth-grade teachers (teaching 6- to 15-year-olds). It is thought that it would be beneficial to include various teacher groups such as kindergarten teach-

ers, ninth- to 12th-grade teachers and university teachers in future studies. We must also mention that the teachers in the study were self-selected and motivated to participate in the study focusing on social, emotional and diversity awareness competencies, as is common practice in these types of intervention studies (Seligman et al., 2005). Future studies using representative samples and multifactor measures are, however, needed. Further on, future studies could include measures capturing different dimensions of mindfulness with a view to better understanding the origins of the interpersonal dimension of mindfulness in teaching and to disentangle the discrepancies found between mindfulness and mindfulness in teaching and their associations with diversity awareness. Last but not least, longitudinal research designs linking mindfulness in teaching with various outcomes would clarify some of the open issues and would allow testing mediating model with better prospects for possible causality interpretations not possible in this study. Further on, in these longitudinal designs possible covarying factors such as teaching experience, career level, gender as well as the structure of the classes, in terms of diversity, they teach are worth exploring.

4.2 Conclusion and practical implications

The study shows the significant paths leading from mindfulness in teaching to diversity awareness. It also highlights the need to transfer mindfulness in actual mindfulness in teaching. Mindfulness helps individuals disengage from automatic thoughts, habitual patterns, and unhealthy behaviors—many of which may be rooted in biases and prejudice—thereby playing a crucial role in enhancing teachers' diversity awareness when linked to the actual behaviour in classrooms. In practice, it is vital to support teachers' diversity awareness to avoid discrimination against ethnic minorities or other disadvantaged students, and it is important to promote teachers' competencies through which they can improve their understanding of diversity, inequality and social justice in school settings, such as mindfulness in teaching (Pikić Jugović et al., 2023). Various studies reveal that mindfulness-based programmes conducted with teachers have a positive effect on teachers' classroom management skills and self-efficacy, as well as job satisfaction and burnout (Frank et al., 2016; Jennings et al., 2013). Our study moves beyond stressing the importance of diversity awareness in education by adding to the understanding of how we can support teachers in situations that trigger diversity awareness, and that is thorough mindfulness in teaching. More specifically we would, based on our findings, support the intervention targeting mindfulness in teaching through both activities that support intra-personal dimensions (e.g., mindfulness with a focus on teaching activities) as well as interpersonal activities (e.g., mindfulness with a focus on communication with students). One of possible examples is “blinded for review”, which is intervention that has among other focused also on mindfulness in teaching (Kozina, 2024).

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Data availability The data that support the findings of this study are open access available.

Declarations

Competing interests The author reports that there are no competing interests to declare.

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