



Mindfulness in educational context – theory, research and practice

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Abstract:

This article is a short overview of mindfulness training in groups of children and adolescents. It starts with considering the needs of this specific intervention technique. In the next part it tries to discuss the definition of mindfulness, its cognitive mechanism and results of empirical research. In the last paragraphs the article shows examples of mindfulness training for children with practical suggestions for teaching mindfulness as well as the pedagogical role of mindfulness.

1. Introduction: Why education should evolve?

Mainstream models of education, which are connected with knowledge fragmentary, mechanistic and materialistic approach to learning, are no longer indefensible (Gidley, 2012). The reason of this statement is linked to consciousness evolution studies that point toward developmental shifts in a number fields, like physics (from classic physics to quantum physics), linguistics (from static and mechanistic metaphor to living, organic figurative expressions), philosophy to name a few. This evolution is currently going towards more inclusive approaches¹, more interdisciplinary and transdisciplinary points of view (Gidley, 2012). Gidley (2012, 2013a, b), a psychologist and futurologist, claims that reaching the “postformal”, “integral” or “planetary” stage in a human development is a cause of these shifts being present in human society. Education, as Gidley (2012, 2013a, b) emphasized, needs to evolve and will be evolving according to evolutionary developmental impulses toward more inclusive, holistic education.

The directions for this evolution have already been set by educational futurologists Beare & Slaughter (1993), which I mentioned previously (Gop, 2015), and which include the following principles:

- education/learning should incorporate the processes of imagination observing, which can be stimulated by using metaphor toward deeper and wider reality perception and description,
- education should serve to reach the profound understanding and wholeness, without reductionistic tendency in thinking
- education should develop ability to integrate all perspectives² with using empathy and compassion
- education should develop individual values, aims
- education should engage visualization and working with picture-language to stimulate emotional and cognitive self-regulation

¹ See e.g. holistic and integral thinking in integral theory by Ken Wilber.

² Wilber e.g. talks about four rudimental perspectives, which are represented by four pronouns: I, we, it, its, another words: subjective/intentional, intersubjective/cultural, objective/behavioral and interobjective/social perspectives. In general sense, human development is connected, among others, with integrating all these perspectives.



- education should perfect vision of self-development plan, arouse affirmation procedures and inspiring stories to shape tendency to see others with using lots of perspectives or points of view
- education should engage community, because learning is also a social process
- education needs to make use of future research methods and tools, e.g. e-learning, advanced methods of data analysis etc. (Beare & Slaughter, 1993, p. 130-135).

The next chapters of this article present a value of mindfulness training for education with using latest research results and mindfulness training programme examples. The definitions of mindfulness have been introduced earlier for deeper understanding of this complex phenomenon and its cognitive mechanism showing scientific aspect of mindfulness.

2. Mindfulness definitions and understanding. Two traditions

Although the term of mindfulness can be understood in many different ways, there are two main traditions of exploring and clarifying the mindfulness construct (Ong, 2013). One of them has its roots within a Buddhist tradition and has been introduced by Kabat-Zinn, the second one is related to cognitive theory by Langer, who discerned the mindfulness value in learning.

Langer defines mindfulness as a „state of mind that results from drawing novel distinctions, examining information from new perspectives, and being sensitive to context. It is an open, creative, probabilistic state of mind in which the individual might be led to finding differences among things thought similar and similarities among things thought different” (Langer, 1993, p. 44). According to this approach, the mindful state means focusing attention on external stimuli and careful observation of what appears in an environment as well as reacting to it mindfully. This state keeps an individual anchored in the presence (Langer & Moldoveanu, 2000). Cognitive theory of mindfulness rose in an opposition to mindlessness, which is understood as a habitually repeated behavior, lacking in ability of *multiperspective* approach (Langer, 2004). Mindfulness can be understood either as a trait or as a state, but either way it is not a mandatory meditation practice. As Radoń (2014) said, mindfulness is only a way to keep the nonjudgmental attitude towards ongoing experiences.

One more way to understand mindfulness is the approach introduced by Kabat-Zinn (2003), where mindfulness is “awareness that emerges through paying attention on purpose, in the present moment and non-judgmentally to the unfolding of experience moment by moment” (p. 145). This receptive, nonreactive state of consciousness is a result of intentional paying attention to something, which is perceived in the present moment, without evaluating the content of these perceptions (Jankowski & Holas, 2009).

There are differences between these two conceptualizations. In Langer’s conceptualization, it is underlined that cognitive processes are essential and attention is focused on external stimuli, whereas the Kabat-Zinn’s (and Buddhists’) approach claim that cognitive processes (e.g. categorization, judgement) should be stopped, and attention should be focused on internal stimuli, e.g. feelings, perceptions etc. (Albrecht et al., 2012; Ong, 2013). In spite of two potentially different ways of looking at mindfulness it has to be pointed out that these constructs are closely related. Both can be perceived as ways of growing and both keep an individual anchored in the present moment.

3. Cognitive mechanisms of mindfulness

There have been a wide number of mindfulness conceptualizations over the years. This phenomenon was understood as a construct related to (1) intelligence or cognitive abilities, to (2) openness to experience which is a personality trait from five factor personality model, to (3) cognitive style (Sternberg, 2000), but there are many differences between these constructs which make it impossible to compare or equate them (Langer, 1998; Langer & Mondoveanu, 2000). It would be more appropriate to talk about them in terms of interrelatedness, e.g. correlations between openness to experience and mindfulness (Jankowski & Holas, 2009). At present, mindfulness, regardless of perceiving it as a rootless and secular form of meditation, is explored in a field of cognitive psychology and is conceptualized as Kabat-Zinn (2003) suggested. As I mentioned previously, Kabat-Zinn (2003) tied together three mindfulness axioms: intention (reason for taking up meditation, e.g. need of self-exploration, self-regulation, self-liberation), attention and attitude (openness and acceptance towards ongoing experience) (Jankowski & Holas, 2009; Shapiro et al., 2006; Shapiro & Schwartz, 2000).



Shapiro et al. (2006) suggest that the main cognitive mechanism of mindfulness named reperceiving, which is an emotionless observation of individual awareness content, leads to a change in perception of inner experience during mindfulness meditation. Jankowski and Holas (2014) also suggest that reperceiving is “a kind of metacognitive mechanism as it allows an individual to witness a current experience without being entirely immersed in it. Practicing mindfulness leads to experience “the observing self” – a higher order metacognitive phenomenon” (p. 66). It is a feeling that *I am the one who observes emotions, feelings, perceptions, but I am not my emotions, feelings or perceptions*. On the psychological level, “identity starts to be bound to self-experience as a witness of inner experience” (Jankowski & Holas, 2009, p. 72). This mechanism could be understood as a meaningful shift in perspective (Shapiro et al., 2006), which also leads to a shift in human development (Wilber, 2016), as I discussed elsewhere (Gop, 2016).

Jankowski and Holas (2014) create more advanced and detailed metacognitive model of mindfulness based on Efklides (2009) conception of metacognition. Research scientists claim that mindfulness state activates metacognitive processes, which can be described as being conscious of his/her own consciousness (Jankowski & Holas, 2009). When some elements e.g. perceptions, thoughts, emotions appear in a basic consciousness and make an individual start to realize them, it induces metacognition. Metacognition is a cognitive representation of individual's actions, emotions, perceptions etc. based on information obtained by conscious or unconscious monitoring of those (Efklides, 2009). First of all, the mindfulness state, as Jankowski and Holas (2014) assumed, induces at least two levels of consciousness: higher meta-level, a so-called awareness that monitors the lower one – an object-level which contains these elements perceived by individual. What is extremely fascinating, is a possibility that meta-level could serve as an object-level for a higher one and so forth, so it could be a number of possible metacognitive levels. The higher the working memory capacity and effectiveness of the central executive, the higher possible amount of metacognitive levels (Jankowski & Holas, 2014). Still, state of mindfulness is always at the top of a multi-level hierarchy and therefore is always a conscious mind activity. Moreover, metacognition contains three components mutually interacting with each other and appearing cyclically: meta-knowledge (simply speaking, these are processes and pieces of information about possibilities of doing some tasks, restored in a long-term memory), meta-experiences (e.g. feeling of satisfaction, self-confidence, self-assessment of learning effectiveness or procedures that lead someone to the right conclusion) and meta-skills that exercise control over metacognition (Jankowski & Holas, 2014). The state of mindfulness has to trigger the procedure of doing nothing, restored in meta-knowledge which is a *metacognitive knowledge promoting mindfulness* (MKK). This mechanism leads to identity shift which can be described as shift from exemplary statement “*I am an anxious man*” towards “*I am one who observes anxiety within myself*” (Jankowski & Holas, 2014, p. 69). This kind of action can build a belief that emotions, feelings or perceptions are temporary and elusive and has an impact on changing the metacognitive knowledge. An individual becomes convinced that emotional states are only expressions of mind activity, so there is no need to run control or escape mechanisms which are simply useless in this case. This built an acceptance towards any ongoing experiences (with no intention of controlling, making comparisons or analyzing them). Since an individual experiences perceptions as a mind creation therefore he/she experiences thoughts as thoughts and not as real and objective states³.

4. Explorations of mindfulness in education field

Research on mindfulness within groups of children and adolescent are still in infancy, which is opposed to gross body of research on mindfulness in groups of adults. Most of research is conducted in the USA with smaller contribution of Europe, Australia or Asia (Rix & Bernay, 2014; Zenner et al., 2014). In 2013 less than 5% of 2600 scientific Englishlanguage research papers concerned groups of young people (Black, 2015). Black's analysis of extraordinary amount of scientific papers published between 1966 and 2013 indicate the improvement of functioning capacity in three areas: (1) neurocognitive functioning, especially in executive functions, (2) psychosocial skills, e.g. increase in self-assessment, decrease in depression, anxiety or rumination, (3) psychobiological aspect, e.g. increase of relaxation, calmness, blood tension regularity (Black, 2015).

³ This is only a short introduction of Jankowski and Holas theory. For a deeper understanding see: Jankowski, T. & Holas, P. (2014). Metacognitive model of mindfulness. *Consciousness and Cognition*, 28, 64-80.



Although research in group of adults often show that mindfulness training leads to development of structures in the brain which are connected with consciousness, compassion, introspection or stress (e.g. amygdala) or those connected with learning and memory (e.g. hippocampus), it could be assumed that results would be similar in a group of children (Weare, 2012). Nevertheless, Black (2015) is less optimistic about a possibility of results extrapolation to a group of young people because of developmental differences between these two groups. It is meaningful that the meta-analyses of mindfulness training effectiveness show a multi-area improvement in functioning of children and adolescents (Zenner et al., 2014). The analyses show a significant size of effect (measured by g Hedges) in a cognitive functioning for a groups of children and adolescents ($g = .80$), in their psychological resilience ($g = .36$), and stress management ($g = .39$) (Zenner et al., 2014). Similarly, the meta-analysis of mindfulness trainings of children and adolescents aged 6-21 (Zoogman et al., 2014) showed a multi-area improvement of well-being. It was noted that, among others, the strength of depression, stress and anxiety symptoms have decreased while cognitive and attention functioning have risen, all with low or moderate effect size (Zoogman et al., 2014). Another systematic review of research results for MBI (mindfulness-based intervention) trainings has shown that mindfulness trainings can be carried out in school conditions as part of regular classes with no need of additional conditions (like for example a separate meditation room) (Felver et al., 2016). Quoted work points towards number of weaknesses of mindfulness research, the most relevant being: scarcity of mindfulness programme replication, low number of experimental research using randomized sample, problems with comparing the different training types, and low level of detail in reports (Felver et al., 2016; Maloney et al., 2016). Qualitative research also confirms the effectiveness of mindfulness trainings within social, cognitive and physical functioning (Desmond, 2009) and, in more detail, in:

- improvement of relationships
- positive emotional reactions, like more calmness, less agitation, more relaxation, manifesting even between the sessions
- more focus which was most evident in a group of hyperactive children
- improvement of interpersonal relationships with family members
- increase in sense of calm and stress reduction in a group of teachers (Rix & Bernay, 2014).

5. Trainings for children and adolescents

In the USA, mindfulness is incorporated into education with using both formal and informal ways. Therefore, mindfulness can be either a training programme that teaches children how to be mindful, how it works and what are its benefits or an element that supports emotional balance and well-being (*Garrison Institute Report*, 2005). There are several mindfulness programs dedicated to children e.g.

- (1) Inner Kids (Galla et al., 2016; Goodman & Kaiser-Greenland, 2009),
- (2) MindUp (“Hawn Foundation”, 2011; Maloney, 2016),
- (3) Wellness Works (“Kinder Associates LLC”, nd; Desmond, 2009),
- (4) Still Quiet Place (Saltzman & Goldin, 2008),
- (5) Inner Resilience (Lantieri & Malkmus, 2011; Lantieri et al., 2016),
- (6) Attention Academy (Napoli et al., 2005),
- (7) Mindful Schools Programme (Biegel & Brown, nd),
- (8) .b (dot-be) and Paws b curricula (*Mindfulness in Schools Project*, nd)
- (9) Learning to Breathe curriculum (Metz et al., 2013).

In this article I want to have a closer look at the *Inner Kids* programme, which was created by adapting the mindfulness training to create a curriculum for children and adolescents (Galla et al., 2016). Kaiser-Greenland in the cooperation with therapy and education specialists created the *Inner Kids* programme, based on a traditional model of mindfulness practices with innovations for being used by children even as young as 4, and adolescents not older than 18 (Galla et al., 2016; Goodman & Kaiser-Greenland, 2009). “The objective of practicing mindfulness with children is to develop and strengthen their ability to pay attention to their inner and outer experience, with curiosity and kindness in a variety of ways consistent with their level of development” (Goodman & Kaiser-Greenland, 2009, p. 418). The *Inner Kids* training focuses on three main mindfulness components, i.e. attention, emotional balance and compassion, and also other elements, particularly: (1) practicing and developing the kindness, compassion and ethical actions toward oneself and others, (2)



developing the understanding for a fact that we cannot anticipate all consequences of our actions, (3) developing the understanding that our thoughts, feelings, impressions etc. are changing with time and simply come and go away so they cannot constitute a human being, (4) developing the understanding for a fact that everything in the world is connected with everything else, (5) developing the understanding that there is a way of perceiving our inner and outer experiences clearly, even if we are drawn within emotions, (6) developing the understanding that reality isn't black or white and many of events can't be perceived only as wrong or right (Galla et al., 2016, Goodman & Kaiser-Greenland, 2009).

Training was divided into four units. Each unit includes from one to a maximum of four lessons (e.g. for younger children, 4-9 years, the session is half an hour once a week for 8 weeks), each one concerning different aspect. Each session for children begins with sitting practice, then children start to e.g. practice breathing in and out, developing the breath awareness. All these practices use methods adequate to age, like games or songs. Apart from breath awareness practices, some exercises which help to develop kindness were included, e.g. imagining self in a safe and secure place, actively wishing such feeling of safety upon other pupils, and giving them a hug. Session ends with a modified practice of body scan. The second unit goal was to deepen the awareness of inner experience. The third one was focused on understanding how emotions, feelings and thoughts are connected with each other, how they interact with themselves and therefore induce a specific behavior. The fourth unit goal was to teach how to be more aware of self and be an independent member of community (Galla et al., 2016).

I give two examples of exercises to introduce how it looks like in educational and practical contexts.

- a) *Counting breaths*. First the teacher should make sure that children understand the term concentration and how they understand it. Teacher asks children to tell him/her what concentration and distraction is, and to give some examples of things that are easy to focus on or that uneasy to stay focused on. Teacher explains that one of the ways to focus on something is counting breaths. Teacher encourages children to stay or sit like a mountain, with their muscles relaxed and spines straight (Galla et al., 2016). Then the teacher shows children a single finger and suggests that they should think about number one in silence and at the same time breath-in and gently breath-out. Teacher shows a second finger, taking deep breath and slowly breathes out, after which he/she repeats the procedure the third time and then counts once more (Galla et al., 2016).
- b) *Imaginary hugs*. Teacher asks pupils about how it is like to get a hug from someone or give a hug. Then teacher asks what it means "to pretend" or "to imagine", and after the receiving the answers he/she encourages children to imagine themselves in a safe, quiet place, where children have a good fun and pretend they smell something, feel or touch it and then give a hug. Next, the teacher encourages children to give an imaginary hug to lots of people and even the entire planet (Galla et al., 2016).

6. Practical suggestions for teaching mindfulness

Shonin, van Gordon & Griffiths (2014) created several practical tips for mindfulness teaching which are especially important and useful for teaching children and adolescent groups. First, use the meditative anchors which role is to aid the implanting of mindfulness and keeping this state (one of the most popular anchors is breath observation). Second, show how to breathe correctly, especially how to not impose breathing. Third, use proper metaphors that simplify the process of understanding complex and abstract reality, which is particularly important when children do not understand mindfulness process, as it could induce resistance towards practice and make trainings ineffective. Examples of such metaphors are: "(a) the sun that causes the flowers to grow by simply watching and shining on them, (b) cats that tend to be more careful and deliberate in their movements as opposed to dogs that are often less gentle and composed" (Shonin et al., 2014, p. 70). Fourth, mindfulness teaching should be primarily an empirical process, engaging not only pupils but also a teacher. The more teacher is immersed into mindfulness the more he/she is able to induce a real and deep state of mindfulness within his pupils. Fifth (opinions vary here), introduce the mindfulness to children at an early age. Looking from developmental perspective, we should take into consideration an age of child when he/she has an ability to reach a metacognitive awareness – meaning age between 8 and 9 (Burke, 2009). Moreover, there should be a consideration for some memory and attention factors (e.g. attention span) or earlier individual experiences (e.g. trauma). 2-10 minutes of mindfulness training is adequate in a group of



children at a school age, but e.g. children of 7 to 8 with anxiety disorder could be focused on breathing for only 3 to 5 minutes (Lillard, 2011). General rule is, a child can stay focused for as many minutes, as its age (Saltzman & Goldin, 2008). Sixth, incorporate the mindfulness training into everyday life, which is connected with the principle of learning – generalizing the results of learning onto other situations and things. Homework is a good idea to realize this postulate. Including parents in mindfulness training should increase child's motivation towards practicing between formal sessions in school. Seventh, use a strategy to remind the child of mindfulness during all day activities. It could be a mobile phone alarm, or SOS strategy – “Stop. Observe the breath. Step back and watch the mind” (Shonin et al., 2014, p. 71) which can be used by child when difficult thoughts and emotions appear. Eighth, encourage the child to practice a correct meditation posture, by sitting or standing like a mountain, with her/his back straight. Ninth, make the mindfulness enjoyable and fun for children. It is helpful to use the stimulating and active methods of mindfulness learning, e.g. (a) using a meditation gong when children practice mindful waking, (b) using modified common games – musical chairs, (c) practicing meditation in different places, in a silent classroom as well as in bosom of nature. Lastly, encourage the teachers to practice mindfulness during their work day, “on the job”.

7. Pedagogical role of mindfulness

To look at mindfulness as a pedagogical tool we have to think of it as a way of knowing, which uses “the natural human capacity for knowing through silence, looking inward, pondering deeply, beholding, witnessing the contents of our consciousness, and so forth. These approaches cultivate an inner technology of knowing and thereby a technology of learning and pedagogy without any imposition of religious doctrine whatsoever” (Hart, 2004, p. 29-30). Contemporary education, as Hart (2004) pointed, struggles with insufficient understanding of principles memorized during student's learning. This situation overlaps with educational prerequisite of better performance, which is often measured by use of total scores of the semester final exam. It is not possible to understand complex reality and dependencies between subtle variables without the ability to transform the knowledge which engages selfreflection, creativity etc. (Hart, 2004). Another issue is connected with greater responsibility of schools coming not only with the increase of cognitive performance and students' structuralized knowledge but also with their social and emotional growth. Education needs to evolve and include these methods of teaching that are able to meet expectations of even more aware society and teach people how to cope with unpredictability and comprehending the complex reality more thoroughly. For a more balanced human development, education needs to include the phenomenological methods, e.g. journaling, meditation and contemplation, dialogue, self-reflection, introspection to name a few. These methods should be perceived not as religious practices but as regular pedagogical techniques (Hart, 2004) useful to improve attention and deepening the understanding.

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