

Mindful Learning: Principles and Prospect of Use in Higher Education

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The article provides an overview of the principles of mindful learning in the context of higher education. Mindful learning is an approach in which students and teachers tune their attention to increasing value and awareness of what is happening in the surrounding context, to their experience and reflection about it. The relevance of the research is related to the interest in the effects associated with mindful learning: positive impact on psychological well-being, development of socio-emotional skills, as well as increasing intrinsic motivation, improving attentiveness and concentration of students. The article reviews research indicating the effectiveness of this approach for both learning outcomes and the psychological well-being of students and teachers in the educational process. The theoretical contribution of this research lies in highlighting the research agenda in the field of mindful learning: defining concepts of mindful learning and mindful teaching, identifying the main principles of mindful learning. These results provide a basis for further research of mindful learning in higher education. The practical contribution of the research lies in presenting a methodological basis for introducing mindful learning into university disciplines. The research may be of interest not only to teachers and methodologists but also to students and their parents due to the increased interest in the effects of mindful learning.

Keywords: mindfulness; mindful learning; mindfulness in higher education; langerian mindfulness; socio-cognitive approach.

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Осознанное обучение: принципы и возможности применения в высшем образовании

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В статье представлен обзор принципов осознанного обучения в контексте высшего образования — подхода, при котором студенты и преподаватели уделяют внимание ценности происходящего в окружающем контексте, собственному опыту и размышлениям о нем. Обращается внимание на то, что актуальность исследования обусловлена эффектами, которые связывают с осознанным обучением: положительным воздействием на психологическое благополучие, развитием социально-эмоциональных навыков, а также повышением внутренней мотивации, внимательности и концентрации в процессе обучения. Рассмотрены исследования, свидетельствующие об эффективности данного подхода как для результатов обучения, так и для психологического благополучия студентов и преподавателей в образовательном процессе. По мнению авторов, теоретический вклад данного исследования заключается в обобщении исследовательской повестки в области осознанного обучения: определение концепций осознанного обучения, выявление основных принципов этого подхода. Описанные наблюдения представляют собой основу для дальнейших исследований осознанного обучения в контексте высшего образования. Отмечается, что практический вклад исследования заключается в представлении методологической базы для интеграции осознанного обучения в университетские дисциплины. Материалы статьи могут представлять интерес не только для преподавателей и методологов, но и для студентов и их родителей в связи с повышением интереса к выявленным эффектам осознанного обучения.

Ключевые слова: осознанность; осознанное обучение; лангерманская осознанность; социально-когнитивный подход.

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Introduction

Mindful learning in the context of higher education is a relatively new approach (rather underresearched by the Russian scholars) which refers to the conscious involvement of a person in the learning process.

In psychological research, mindfulness is viewed as a state of purposeful, non-judgmental attention to what is happening at the moment [25], with interest and acceptance [9]. Unlike mindfulness training programs, which include specialized courses, trainings, and practices, mindful learning implies specific principles and tools for increasing mindfulness while studying in general, i.e. undertaking the disciplines of the curriculum [31].

Based on the above definition of mindfulness [9, 25], mindful learning refers to an approach to education in which students and lecturers are in a state of purposeful, non-judgmental attention to what is happening in the present moment, with curiosity and acceptance. Students are aware of the context, think critically, and perform creatively [35]. The lecturer's task is to support the students' awareness of the value and relevance of their own thoughts, observations, and inquiries regarding the subject being studied [22].

The use of mindfulness practices in educational environments has been a subject of academic and applied research for several decades, also in the context of higher education [28]. There are three main reasons for launching mindfulness courses within educational institutions: reducing stress and increasing stress resistance, improving academic performance, and personal development [41]. A meta-analysis of 24 studies on stress reduction practices for university students demonstrated the effectiveness of mindfulness practices in reducing stress during the learning process [36]. The emphasis on mindfulness in learning makes the skills and knowledge acquired

by students more reliable, universal, suitable for alternative contexts; also this approach makes learning more enjoyable for students [29]. Mindful learning increases sensitivity to diversity; it develops understanding that there are no single answers, but there are situationally appropriate solutions; it reduces the need for excessive zeal by increasing internal interest in the learning process [33]. At the same time lower levels of mindfulness in learning is manifested in students' efforts to memorize unambiguous "correct answers", approaching problems using schemes proposed by teachers, and acting "in autopilot mode", for example, taking notes without reflecting on the material [32].

The purpose of this study is to examine the principles and applications of mindful learning in the context of higher education. The article illustrates ways to adapt the principles of mindful learning within the disciplines of the main curriculum. In addition, the authors analyze criticisms of the use of mindful learning in higher education. The article aims at a wide audience of teachers, students, methodologists, heads of educational programs, parents, etc.

Key research questions:

1. What are the principles of mindful learning that could be applied in educational environment?
2. How can the principles of mindful learning be integrated into curriculum disciplines in higher education?

The article is structured as follows. We first examine the concept of mindful learning and its relationship to innovative trends in education. We also compare two approaches—mindfulness training and mindful learning—and outline the principles of mindful learning. After this, we consider the possibilities of their integration into the process of teaching curriculum disciplines through feedback and reflection. The article concludes with the analysis of critique of

mindful learning and a discussion of possible directions for further research.

Mindful learning is not mindfulness training

Literature distinguishes two approaches to enhancing mindfulness in educational context: 1) mindfulness training - specialized courses (trainings, practices) of mindfulness that are offered to students either as mandatory elements of the curriculum or as elective classes [38], and 2) mindful learning - integration of tools and principles of mindfulness into curriculum disciplines [31].

Mindfulness training is based on well-known certified programs of mindfulness development, for example, the Mindfulness-based stress reduction program — MBSR [25]. Such programs often draw on traditional spiritual practices such as meditation, adapting them to secular contexts [25], and therefore this approach is also called meditative [47]. Studies of the effectiveness of such programs note an increase in subjective well-being of teachers, their self-efficacy, skills in establishing trustful relationships with students, and an improvement in the overall atmosphere in the classroom [42]. Students report an increase in self-awareness, awareness of others, self-regulation, willingness to express needs, and ability to apply the learnings in life and outside of class [20].

The effectiveness of such programs inspired researchers to create specialized mindfulness training courses for educational setting, primarily in secondary education. Many higher education institutions offer specialized mindfulness courses and programs for students and staff. Nearly 80% of medical universities in the United States offer their students mindfulness training in one form or another [11], and leading business schools (such as INSEAD) include mindfulness training in their MBA programs. In addition to face-to-face classes, many universities offer online resources on

the topic of mindfulness with descriptions, instructions, video and audio materials for self-study. The most well-known on-line platforms are Mindfulness & Meditation by Harvard University, Mindfulness by the University of Massachusetts Medical School, and Mindfulness Defined by the Greater Good Science Center of the University of California, Berkeley.

Contemporary Russian research on the topic of mindfulness is mostly devoted to adaptation and analysis of psychometric properties of the Russian versions of the most widely used tools for assessing mindfulness [1, 2, 5]. Researchers in Russia also study the effectiveness of mindfulness interventions [6, 7].

Inspiring outcomes of mindfulness training programs have led to their particular tools and principles being incorporated into curriculum disciplines [21] which contributes to the problem of distinguishing between this approach and mindful learning.

Mindful learning implies conscious behavior of students and teachers in the process of mastering the disciplines of the curriculum. To do this, all participants in the learning process pay increased attention to the value of what is happening in the surrounding context, to their own experiences and to reflecting on them with curiosity and openness [37]. In the context of mindful learning, the concept of mindfulness is characterized by an emphasis on behavior such as seeking and creating novelty, engagement, flexibility; rather than on mindfulness as a skill, trait, or ability (which is the case for the concepts of *dispositional mindfulness*, *learned* or *cultivated mindfulness*) [35]. This means that the lecturer's task is mainly not to develop the skills, but to create conditions for a mindful learning process (for example, through the use of tasks stimulating reflection, teamwork, etc.).

In the literature, mindful learning is referred to as a social-cognitive approach [35]. The concepts of mindful learning and

social-cognitive mindfulness are associated with the works of Harvard psychologist Ellen Langer [33] and, therefore, is approach is also known as *Langerian mindfulness*. To distinguish mindful learning from the meditative approach to mindfulness, it is also called *non-meditative* [43]. Studies confirm the effectiveness of this approach in increasing various competencies, especially creativity, as well as reducing burnout levels among students and teachers [31].

Most of the tools and principles of mindful learning are integrated in the learning process and stay and are present “in the background”; the concept of mindfulness as such may not even be discussed [39]. In this article we explore such principles: those that promote mindful behavior and can be integrated into the teaching of curriculum disciplines.

The concept of mindful learning and its association

with innovative trends in education

Comparing mindful learning with traditional education, Langer [31] lists the

main misconceptions that are widespread in the learning environment, and thereby formulates the principles of mindful learning. For example, traditional education places an emphasis on memorization and intelligence, reducing them to the ability to quickly choose the right solution from several proposed options. Mindful learning, according to Langer, refers more to manifestation of attentiveness and openness to novelty, willingness to consider the situation from different points of view proposing one’s own solution that is most suitable for a particular situation. Table 1 presents a comparative analysis of the basic principles of traditional and mindful learning based on Langer’s work [30, p. 199].

It is especially important to note innovative trends in education which overlap with mindful learning. Research [18, 34] notes similarity of the goals of mindful and Social-Emotional Learning (SEL) [24]. To increase students’ resilience to stressful situations and improve their mental health, SEL implies development of five basic competencies: self-aware-

Table 1

Comparative analysis of the principles of traditional and mindful learning

Principles	Beliefs	
	... in traditional learning	...in mindful learning
1. Openness to novelty	The basics must be learned so well that they become second nature	A contextual approach to understanding the material, because facts are refuted even in the exact sciences.
2. Mindfulness of differences	Paying attention means staying focused on one thing at a time, which we should hold still	Mindfulness is maintained by searching for and identifying differences.
3. Sensitivity to context	Rote memorization is necessary in education	Autopilot interferes, students train sensitivity to context and differences of opinion, critical analysis of acquired knowledge, reflection, expression of doubts and tolerance of uncertainty, vigilance against new trends are encouraged.
4. Mindful self-regulation and emotion management	Delaying gratification is important.	There are many ways to increase the level of joy and usefulness of learning here and now, strengthen the internal motivation of students, and create a comfortable learning atmosphere in the group.

Principles	Beliefs	
	... in traditional learning	...in mindful learning
5. Mindful choice and action	Intelligence allows to objectively assess current events.	Each person constructs his/her own subjective vision of what is happening.
6. Awareness of having more than one perspective	There are right and wrong answers.	There are different subjective views.
7. Flexible thinking	Forgetting is a problem.	Considering a problem and task from different points of view and finding non-standard creative solutions without regard to past experience.

Source: adapted [30; 31; 39].

ness, self-management, social awareness, relationship skills and responsibility for decision-making [18]. Same competencies are successfully developed by mindfulness training programs in the educational environment [18]. Importance of mindful learning is also considered for development of innovative competence or the 4C's: creativity, critical thinking, cooperation, and communication. The benefits of mindful learning from the perspective of experiential learning theory [47] and self-regulated learning [12] have

also been noted. There are similarities between mindful learning and contemplative practices [48]. Table 2 presents the most prominent innovative learning approaches and their association to mindful learning. In our opinion, the development of targeted, non-judgmental attention to what is happening in the present moment, on which mindful learning is based, gives practitioners the opportunity to form a wide pool of student competencies that are only partially achieved through other educational technologies.

Table 2

The associations between mindful learning and the most popular innovative approaches to learning

Approach	Areas of intersection with the concept of mindful learning	Source
Social-Emotional Learning (SEL)	Competency development: 1) self-awareness, 2) self-government, 3) social awareness, 4) relationship skills, 5) responsibility for decision making.	[8, 18]
4C's Model	Skill development: 1) creativity, 2) critical thinking, 3) cooperation, 4) communication	[19]
Experiential Learning Theory	Suggestion of exercises for each stage of the Flask cycle: 1) accumulation of personal experience; 2) awareness and mental observations; 3) theoretical generalization; 4) experiment-practice.	[47]

Approach	Areas of intersection with the concept of mindful learning	Source
Self-Regulated Learning	Improving learning skills: 1) organization of educational activities, 2) mastering educational materials, 3) self-control in the learning process, 4) self-assessment of academic performance.	[12]

Source: compiled by the authors

Feedback and reflection in mindful learning

The lecturers’ task in mindful learning is to support students in realizing the value and relevance of their own thoughts, observations, and inquiries regarding the subject being studied [22]. Thus, special attention is given to feedback and reflection.

Traditionally, feedback in the learning process is the assessment of students by the lecturers. Such assessment is based on a standard or a set of correct answers to which students’ responses are compared. Empirical research indicates that students’ performance does not improve and may even deteriorate as a result of evaluative feedback. Contrary to expectations, the effect is stronger for cognitive and physical improvements rather than for students’ motivation or behavior [27].

In mindful learning, feedback is a two-way process via which participants share their opinions non-judgmentally thus participating as a whole group in constructing knowledge [16, 46] including the standard with which student responses are compared. For this purpose, special tools aimed at stimulating feedback can be included in the curriculum of academic disciplines. Verpoorten et al. [44] call them *reflection triggers* as feedback is designed to stimulate reflection - a thought process that allows one to “voluntarily direct attention to oneself” [3, p. 114]. Verpoorten et al. [44] present 35 tools aimed at stimulating feedback in the form of: 1) reflection on the information received (for example, graphic illustration

of the material in the form of mind maps); 2) assessment of one’s answers and decisions, including behavior and feelings in the process of completing tasks (for example, assessing satisfaction with one’s answers and explaining such assessment); 3) verbalization of information (for example, an essay or report on the experience gained) [44]. Table 3 presents selected tools that can be used as such “reflection triggers.”

A structured reflection process is important not only for students but also for lecturers. Lecturers can use feedback from students and their own observations to compare desired and observed levels of teaching excellence, and discuss discrepancies in peer reflection groups or when working with a mentor or coach [16]. The level of awareness while lecturing can also become a point of reflection. Lecturers can evaluate their skill level against the Mindfulness-Based Interventions: Teaching Assessment Criteria (MBI: TAC) — a set of self-assessment criteria for mindfulness interventions [13]. At the same time, mindful learning suggests perceiving these criteria not as an assessment tool but as a support for professional growth [16].

However, praising non-evaluative feedback and construction of knowledge during the learning process in mindful learning provokes discussion on the means of maintaining criterion-based assessment and avoiding grade inflation. The effectiveness of feedback can be increased if the standard with which the results are compared is related to the students’ goals

Table 3

Examples of reflection triggers

Name	Explanation
<i>Reflection amplifiers by the receiving information</i>	
1. Text visualization, for example, in mind-map format	Students visualize the material being studied or supplement it with new information in the form of graphic diagrams
2. Exchange of annotations	Students' comments and conclusions regarding the material being studied become available to the entire course group
3. Individual system of indicators of course completion success for each student	Students regularly track course performance, noting their progress against indicators of their choice.
4. Comparison of the results of knowledge acquisition with an external model	The results of another group, the performance of a lecturer or classmates can serve as a sample.
<i>Reflection amplifiers by the giving information</i>	
1. Specified indicators of information mastery	You can use informal indicators for self-assessment of understanding: everything is clear, vague, lost in information
2. On-demand assessment	Students themselves determine at what point they are ready to undergo the assessment procedure.
3. Assessing satisfaction with your answers and justifying such assessment	The lecturer provides the opportunity to evaluate one's own behavior or the results of a decision.
4. Selecting the difficulty of questions	Students can ask for easier or more difficult questions
<i>Reflection amplifiers by the verbalizing information</i>	
1. Preparing questions for the test	Students create their own questions for the final test
2. What and why is wrong?	Students are given information and asked to identify any errors in it and explain their opinion
3. Journaling	Students describe their experiences in an observation diary
4. Comments on comments	Students comment on comments received from the lecturers

Source, abridged version by Verpoorten et al. [44]

so that students see the gap and strive to eliminate it in order to achieve their own goals [26].

Thus, within mindful learning students can engage in 1) reflection on their own behavior / responses and on the behavior / responses of their colleagues; 2) construction of an external standard against which students' behavior / response is compared; 3) reflection on the identified gap between the standard and the fact. This approach is called productive (systemic) reflection as opposed to 1) introspection, with the focus on oneself without constructive gap assessment with the desired norm; 2) unreflectiveness with no reflection on self and attention directed only to the external standard, or 3) quasi-reflection, in which the student is car-

ried away by abstract reasoning unrelated to the context [3].

Criticism of mindfulness practices in educational contexts

Adaptation of the principles of mindful learning within the framework of general curriculum disciplines significantly expands lecturer's methodological tools. However, a critical overview reveals the lack of discussion regarding negative evaluations and effects of such practices[45]. Nevertheless, such evidence (although rather sparse) does exist. There is mainly addressed to meditative approach in mindfulness, however, this may be due to the fact that the programs carried out in this approach are most often considered in research.

A common cause for concern is differences in individual reactions to the programs and especially the presence of negative emotional reactions [17]. Such reactions are explained by the fact that with increasing emotional awareness, all groups of emotions become more noticeable, including those that are unpleasant [ibid.]. In addition, research notes that measures of effectiveness of mindfulness-based interventions are primarily measures of perceived stress, and objective data are rarely used. Including objective data in the analysis makes the interpretation of the results more difficult. For example, in a study by Creswell et al. [14] the experimental group participated in a short-term mindfulness training (3 days, 25 minutes per day), and participants in the control group participated in the training on development of analytical abilities of the same duration. Participants in both groups then completed the Trier Social Stress Test (TSST) after which their salivary cortisol, blood pressure, and perceived stress levels were measured. Participants in the experimental group who completed mindfulness training demonstrated lower levels of perceived stress in a stress test, but their cortisol levels were higher than those in the control group [14]. However, participants who had lower level of mindfulness before the experiment and who participated in mindfulness training had the highest cortisol levels after the stress test. A possible explanation of the change in cortisol levels may be related to more intense coping reactions as a result of mindfulness training in participants with an initially low level of mindfulness [14]. We did not find any studies of mindful learning utilizing biological markers of stress.

A meta-analysis of mindfulness meditation programs also identifies interventions that, contrary to expectations, did not lead to increased mindfulness, better sleep, or positive mood in participants [19]. In this

regard, the importance of a deeper study of the theoretical justification of the mechanism of expected improvements is noted [40], especially taking into account cultural specifics of the context. The researchers also suggest that the effect of meditation interventions may be non-linear and follows an inverted U-shaped trajectory [10], which should be taken into account when determining intensity and duration of such interventions.

It is noted that the positive effect of mindfulness practices is most evident in participants who at the time of starting classes had a higher level of mindfulness and implicit motivation to practice. However, participants with less developed self-regulation skills are more likely to find classes difficult and boring, and are also more likely to quit practicing [6]. Individual resistance to mindfulness practices may negatively impact overall group dynamics, and alternative assignments might need to be provided to individual students when integrating mindfulness tools in the core curriculum.

It is important to note that elements of meditative approach to mindfulness development may be perceived as esoteric and, thus, inappropriate in the context of secular higher education [4], such as the term “mindfulness” itself. The first way out of this situation is to use other terms when translating this concept into Russian, as mentioned in the introduction. The second option is the background use of the principles of mindful learning, without emphasis on the topic of mindfulness in the class [39]. The third option is to combine the principles of mindful learning with other popular innovative approaches to teaching, such as SEL, 4C, etc. (see Table 2).

Conclusion and discussion

This article overviews research on the principles of mindful learning that are suit-

able for the new context in which higher education finds itself due to the pandemic, economic and political challenges. The article reviews the principles of mindful learning exist and suggests the ways in which they can be integrated into the disciplines of the curriculum.

The theoretical contribution of the article lies in highlighting the concepts of “mindful learning” and “Langerian mindfulness”, which are relatively new in Russian academic research, and identifying the agenda for research: current discourse, streams of research, and results of empirical studies.

The second topic is approaches to assessing students’ mastery of tools: - is it worth leaving these tools for voluntary study, or is it important to introduce external incentives, for example, grades for their mastery?

The paper also reviews research which explores the intersections between mindfulness training and Kolb’s experiential learning theory[47], SEL[34], self-regulated learning[12].

Special attention is paid to criticism of the meditative approach, and therefore the tools of this approach should be used with caution. We also emphasize the importance of critically reviewing interventions and taking into account possible side effects. We emphasize an overall lack of criticality towards social-cognitive approach and mindful learning in general.

The practical contribution of this study lies in the presentation of a methodological basis for adapting mindful learning to the tasks of university disciplines and vice versa: adapting university disciplines to the tasks of mindful learning. Reviewed principles of mindful learning are versatile and can be integrated into the curriculum providing an answer to many of the challenges faced by contemporary higher education.

Presented information should be considered from the point of view of existing limitations. First, this article is theoretical in nature, and suitability of the presented tools for the Russian context should be tested empirically. There is a possibility that low public awareness of the possibilities of mindful learning leads to undesirable associations among participants with esoteric or religious practices, also due to the spread of such practices performed by enthusiasts without appropriate academic and methodological training. Supplementing the results of quantitative studies with qualitative ones would add additional value, for example, by including the opinions of parents, students, methodologists, and heads of educational programs as apart from their status, they belong to different generational groups whose socialization took place in specific socio-economic conditions, which can also influence the adaptation of mindful learning practices and their perception. Semi-structured interviews, observation diaries, and student essays can help identify new facets of the process under study as well as its connection to other constructs for socialization of an individual in society, for example, the formation of various components of social capital. In addition, a comparative analysis of the developments of lecturers in various fields of education will allow to obtain a more objective view of mindful learning and possibly complement the list of principles for adapting tools to the conditions of Russian education.

Secondly, the format of the article does not allow us to describe the tools and provide detailed instructions for them. Other formats of methodological materials with greater detail and a dedicated training material may help in unscaling the results by involving more lecturers eager to try out the proposed methods and improve the quality of the interventions.

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