

Mindfulness Enhancing Concentration in English Foreign Language Reading Comprehension

Mindfulness mejora la concentración en la comprensión lectora en lengua extranjera inglesa

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Abstract

The Organization for Economic Cooperation and Development (OECD) Learning Compass 2030 for teachers emphasizes that cognitive, metacognitive skills, and emotional intelligence skills such as compassion, attentiveness, critical thinking, creativity, and communication are indirectly important to developing reading comprehension. Reading is a challenge for EFL students who have difficulties understanding written texts because of the lack of concentration, stress, and anxiety. Mindfulness appears as a practice that may offer some benefits. Recent studies show that mindfulness training can alleviate anxiety and stress, improve confidence, improve cognitive and social abilities, and elevate academic goals. In this regard, this review synthesizes existing literature to evaluate the effectiveness of mindfulness in enhancing concentration in EFL reading comprehension classrooms and provide insights for educators, practitioners, and researchers. Criteria for selected articles were kept as recent as possible. All peer-reviewed papers were cited or published in scientific journals. This review suggests that mindfulness training has the potential to make learners more aware of their learning system. In addition, students learn to regulate their emotions to be more flexible and creative. Mindfulness training changes their point of view of their thinking in a way that encourages conscious control of their feeling, actions, and thoughts, improving cognitive abilities.

Keywords: mindfulness; reading comprehension; anxiety; attention.

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Resumen

La brújula de aprendizaje 2030 de la Organización para la Cooperación y el Desarrollo Económicos (OCDE) para docentes enfatiza que las habilidades cognitivas, metacognitivas y de inteligencia emocional, como la compasión, la atención, el pensamiento crítico, la creatividad y la comunicación, son significativos para desarrollar la comprensión lectora. La lectura es un desafío para los estudiantes de inglés como lengua extranjera (EFL) que tienen dificultades para entender textos escritos debido a la falta de concentración, el estrés y la ansiedad. Estudios recientes muestran que el entrenamiento en mindfulness puede aliviar la ansiedad y el estrés, optimizar la confianza, las habilidades cognitivas y sociales, y fortalecer los objetivos académicos. Además, los estudiantes desarrollan la capacidad de ser más conscientes de su forma de aprender y puedan cambiar el punto de vista de su pensamiento fomentando el control consciente de sus sentimientos y acciones siendo más flexibles, creativos, además de enriquecer sus las habilidades cognitivas. En este sentido, esta revisión sintetiza la literatura existente para evaluar la efectividad de mindfulness en el aumento de la concentración en las aulas de comprensión lectora de EFL y proporcionar información para educadores, practicantes e investigadores. Los criterios para los artículos seleccionados se mantuvieron lo más recientes posible; todos fueron revisados por pares y han sido citados o publicados en revistas científicas.

Palabras clave: mindfulness; comprensión lectora; ansiedad; atención.

Introduction

OECD and the Future of Education and Social Skills for 2030

The Organization for Economic Cooperation and Development (OECD) Learning Compass 2030 for practitioners emphasizes that cognitive, metacognitive skills, and emotional intelligence skills such as compassion, attentiveness, critical thinking, creativity, and communication skills are becoming important in ethical, cultural, and linguistically diverse classrooms. Abilities are integral to a comprehensive concept of competency, which encompasses the application of knowledge, skills, disposition, and values to address complex demands (OECD, OECD Future of Education Skills 2030, 2019).

The OECD Learning Compass 2030 classified three different types of skills (OECD, 2019):

- Cognitive and meta-cognitive skills, which include critical thinking, creative thinking, learning-to-learn, and self-regulation.
- Social and emotional skills, which include empathy, self-efficacy, responsibility, and collaboration.
- Physical and practical abilities including new information and communication technology devices.

Cognitive abilities are brain-based skills we need to carry out any task from the simplest to the most complex. They have more to do with the mechanisms of how we learn, remember, problem-solve, and pay attention. Metacognitive skills include being aware of how the brain learns and of one's cognitive processes or knowledge skills of any subject, attitudes, and values.

Social abilities and personal capacities that manifest in consistent patterns of thoughts, behaviors, and feelings enable individuals to improve their relationships at all levels including in their communities being more aware of their civic responsibilities. Metacognitive abilities are critical to education due to their influence on the learning process. Consequently, self-regulation and observation are becoming increasingly integral to the curriculum. Mindfulness, as a technique that involves respect for different ideas, compassion, awareness, patience, objectivity, detachment, empathy, and love, and whose objective is the reduction of human suffering and its prosperity, is a great ally in achieving all these objectives. "A proliferation of mindfulness teaching as a relaxation technique has been associated with positive effects when used as a coping strategy for stress and anxiety" (OECD Future of Education Skills 2030, 2019, p. 86).

Krashen and the Affective Filter Hypothesis

The term "affective filter" originates from Stephen Krashen, an expert in the field of linguistics, who described it as several affective variables that contribute to second language acquisition. Krashen (1986), cites motivation, self-confidence, and anxiety in the Affective Filter Hypothesis as three categories of variables that play a role in second language acquisition. In essence, when feelings or emotions such as anxiety, fear, or embarrassment are elevated, it becomes difficult for language acquisition to occur. The affective filter has commonly been described as an imaginary wall that rises in the mind and prevents input, thus blocking cognition. This barrier is up when the learner is unmotivated, lacking in confidence, or experiences anxiety. In opposition, when the affective filter is lowered, the feeling of safety is high, and language acquisition occurs.

EFL Reading Comprehension

Foreign language learners, especially at lower levels of proficiency, often express a feeling of anxiety about learning a second language (Horwitz, 1986). Reading is a convoluted psycholinguistic process impacted by a host of reader-related, text-based, and context-specific factors that include fluency and automaticity in text processing, vocabulary, and background knowledge, in addition to motivation, positive self-concept, and reading confidence (Ghaith, 2018).

All through the literature, there is an abundance of studies that show that mindfulness instruction techniques not only have a positive effect on EFL learners' reading comprehension but also on stress reduction, well-being, and behavior. Given what (Muller, 2021), cited, mindful learners can improve attention on their learning and performance and overcome their mistakes. Recent studies in neuroscience demonstrate that mindfulness meditation practice techniques reduce stress by being more aware of moment-to-moment experiences that may increment stress resilience.

Mindfulness Meditation Training Alters Stress-Related Amygdala Resting State Functional Connectivity

Recent studies in neuroscience indicate that mindfulness meditation training interventions reduce stress and improve stress-related health outcomes. Although stress may increase amygdala-sgACC rsFC, a region in the brain known to regulate stress-processing and physiological stress responses, brief training in mindfulness meditation could reverse these effects and promote useful neuroplastic changes reducing the pathway for stress effect in the amygdala-sgACC. Luw-ing (2008), proposes that mindfulness meditation practice may increase stress resilience by being open and aware of the present-moment experiences.

Although the neuroscience of mindfulness is a novel practice in our times, it is indeed an ancient Buddhist practice.

Mindfulness as an Ancient Practice

Mindfulness is an ancient technique practiced by the Theravada Buddhists in the 3rd Century BCE known as the sati Buddhist technique written in "Pali", a Buddhist canonical language (Shapiro, 2009). Mindfulness means to remember to observe how the mind's attention moves from one thing to another. The first part of Mindfulness is to remember to watch the mind and return to the objective when wandering off. For example: when letting a goat graze in a large yard where it goes in all directions, the goat is tied to a rope and the rope to a pole, the goat only grazes in a circle around the pole. The rope is like sati and the goat is like our mind. Sati keeps the mind to itself and focused.

The effects of mindfulness on learning in laboratory settings include an extensive and diverse literature. In the service of a short review, the research has been condensed significantly. Therefore, here we have chosen to target experiments that are particularly relevant to key aspects of cognition for learning, such as mind-wandering, cognitive flexibility, emotion regulation, executive functioning, and stress reduction.

Methodology

Criteria for selected articles were searched using keywords and terminology first (Table 1). Additionally, they were kept as recent as possible. All peer-reviewed papers obtained were cited or published in scientific journals showing original research and could be replicated. To be considered for inclusion (Table 2) in this study, qualifiable/quantifiable data collection methods were used, and statistical analysis software to analyze their data. The research papers were first judged by the abstracts and then read in more depth. Finally, most of the articles from Europe and Asia were chosen because they were mostly open and available archives. Paid papers were excluded.

Review Protocol and Data Analysis

Table 1. Search Engine: Database and Descriptors.

Data Base	Search Descriptor
Google Scholar	Reading comprehension, mindfulness (country)
Scopus (10)	Mindfulness; Reading comprehension

Source: Bloom, 2020.

Table 2. Criteria for Selected Articles.

Criteria	Inclusion	Exclusion
Focus of the article	Online learning Peer-reviewed articles published or cited in scientific journals.	Studies not published in a scientific journal and thesis
Publication date	2014 – 2024	Articles published prior to 2014
Publication type	Scholarly, peer-reviewed articles	Conference papers, theses, chapters, technical reports, or discussion papers that do not include a discussion of the procedures of the study or data analysis, and papers for paid.
Language	English	Other languages will not be included

Source: Bloom, 2020.

Development

In table 1 and 2, the selected articles were stored in a specific collection created for this systematic review, classifying them according to their database, which allowed the identification of duplicates. For both stages, articles that met the following criteria were included: (a) the article reported empirical research findings; (b) it involved human participants; (c) the intervention was developed in an educational context; and (d) it focused on Mindfulness, anxiety, reading comprehension skills, and neuroscience of mindfulness.

Table 3. Data Analysis. Summary Description of the Articles Included in the Review.

Author & Year & Country	Objective	Method	Results
Alshaharni et al. (2023), Irak	To examine the relationship among mindfulness, reflective thinking, reading anxiety, and reading comprehension skills in lower intermediate and advanced Iraqi EFL students' group.	Two hundred Iraqi EFL learners were assigned to the experimental and control groups. Both groups were exposed to the reading anxiety comprehension scale, reflective thinking questionnaire, mindfulness scale, and iBT TOEFL reading tests. In the qualitative phase of the study, data were obtained from the semi-structured interviews.	The variables of mindfulness, reflective thinking, and reading anxiety might influence the reading comprehension of advanced and lower intermediate EFL Arab learners. Consequently, it is strongly suggested that teachers cultivate an environment where students feel calm and safe.
Sheikhzadeh, (2017) Iran	This study examined the correlation of attention, awareness, and academic achievement among intermediate Iranian (EFL) Learners.	In this study involving Iranian university students, a 15-item Likert scale questionnaire focused on mindfulness and a 31-item multiple-choice reading comprehension test were used.	The results indicate a positive correlation between mindfulness and reading comprehension. Based on the findings, the researcher provided recommendations for teaching teacher training, materials development, and syllabus design.
Sheikhzadeh (2017) Iran	This study investigated the correlation between critical thinking, mindfulness, and academic achievement among intermediate Iranian (EFL) learners.	A 34-item multiple-choice questionnaire focused on critical thinking, a 15-item Likert-scale questionnaire centered on mindfulness, and a 31-item multiple-choice reading comprehension test were employed in this study. To achieve the study's objective, 220 out of 250 university students majoring in English translation and TEFL were selected using a standardized Oxford placement test (OPT). After administering the proficiency test, the California Critical Thinking Skills Test was first given, followed by the Mindfulness Attention Awareness Scale questionnaire, and finally, a reading comprehension test from the actual 2004 TOEFL was conducted among the participants.	The results showed no correlation between critical thinking and reading comprehension, nor between mindfulness and critical thinking. However, there was a positive correlation between mindfulness and reading comprehension. Based on these findings, the researcher provided recommendations for teaching, teacher training, materials development, and syllabus design.
Tina Waldman (2019). Poland	This study examines the impact of mindfulness practice on pre-service teachers perceived self-efficacy in teaching writing in English as a foreign language (EFL).	In a qualitative study, mindfulness practice was incorporated into a writing teaching course for an experimental group of 24 students over a 14-week period, while a control group of 22 students did not receive this integration. Both groups were assessed before and after the course using a self-report questionnaire that included closed and open-ended questions.	The significant improvement in participants' self-efficacy for teaching writing after the mindfulness practice is a great finding. The fact that qualitative data also showed positive reactions and emotions towards teaching writing and the mindfulness practice indicates that the intervention was well-received. The awareness of a connection between mindfulness and enhanced self-efficacy in teaching writing is an important insight. It could suggest that incorporating mindfulness practices can have a positive impact on teachers' confidence and abilities in specific areas.

Author & Year & Country	Objective	Method	Results
Adrienne et al. (2015), England	Mindfulness meditation has been shown to have various benefits for mental health and well-being. Investigating its effects on the amygdala's functional connectivity could provide valuable insights into how mindfulness practices may influence stress processing and responses.	The finding of the study showed how a 3-day intensive mindfulness meditation training intervention was able to reduce right amygdala-sgACC rsFC in stressed unemployed community adults. The potential of mindfulness meditation to counteract the effects of stress on the brain is quite promising.	The findings suggest that mindfulness meditation training may lead to functional changes in the brain, particularly involving the amygdala-sgACC pathway, which could contribute to reducing stress levels.
Özeke-Kocabaş & Koyuncu (2023), Turkey	Researching the impact of mindfulness training on students' academic and social-emotional skills could potentially offer valuable insights and strategies to support student well-being and success given the challenges that students face during transitions in their educational journey.	Using a mixed-method research design with a focus on assessing emotions, depression, anxiety, stress, and mindfulness is a comprehensive approach. Having both quantitative measures like the PANAS, DASS-42, and Mindfulness Scale for Adolescents, as well as qualitative data from the pre-and post-interview forms, provides a well-rounded view of the student's experiences and perceptions throughout the study.	Mindfulness activities have been shown to have numerous benefits for students, including improved focus, reduced anxiety, and enhanced emotional well-being. By integrating mindfulness into school programs, students can learn valuable skills to help them navigate the challenges they face both academically and emotionally.
Wang & Liu (2016), China	This study examined how mindfulness can have a positive impact on various aspect of learning English as a foreign language (EFL).	The data sources such as pre-surveys, post-surveys, work samples, observation notes, and reflective journal entries can provide a rich understanding of the impact of the intervention.	This practice found that building a comfortable environment, generating new thoughts, cultivating creativity and intelligence, and promoting critical thinking are all essential aspect of a holistic learning process. Encouraging mindfulness in education can have far-reaching benefits for students' academic and personal growth.
Moghadam & Ghanizadeh (2021), Iran	This article experimentally studied the impact of the mindfulness-cultivating intervention on various dimensions of learning.	<p>The experimental group in the study utilized mindfulness-cultivation techniques that involved observing all experiences, analyzing, planning, judging, reasoning, and fantasizing. The concept of mindfulness being comprised of four attributes—novelty producing, novelty-seeking, engagement, and flexibility—influenced the selection of techniques used. Additionally, the participants' proficiency levels were assessed before the treatment was administered. Three questionnaires were utilized both before and after the treatment:</p> <ol style="list-style-type: none"> 1) Langer Mindfulness Inventory, 2) Reflective Thinking Scale, and 3) Positivity Questionnaire. 	MANOVA results demonstrated to have significant findings regarding the effectiveness of certain techniques in predicting reflective thinking and fostering positive orientation and language achievement. These results have important implications for English language teachers, learners, and anyone involved in language education.

Author & Year & Country	Objective	Method	Results
Azizi1 & Kralik (2020), Russia	The purpose of the present study was to investigate the impact of mindfulness techniques on the development of critical reading abilities of EFL learners in literature courses.	This is a quasi-experimental study that was conducted with BA students majoring in English language and literature. In this experiment, the students were divided into two groups—mindful and less mindful—based on their scores on the Mindful Attention Awareness Scale (MAAS). To analyze the data, a paired-sample t-test was conducted using SPSS software to compare the means of two related groups, such as the pre-test and post-test scores.	The results revealed that there was a significant difference between the mean scores of pre-tests and post-tests of all the participants. However, since both meditative and socio-cognitive mindfulness practice was utilized in this study, further research to delve into the nature of mindfulness in new ways and to explore the differing impacts of these two approaches are promising direction to further understand the effects of mindfulness practices.
Lusning et al. (2023), Germany	The present work addresses the effects of meditation practice on reading performance.	This work is a longitudinal study of the effects of mindfulness meditation on various cognitive and emotional factors in undergraduate students. 52 undergraduate students participated in a 6-week mindfulness meditation course. Reading comprehension was assessed and speed before and after the intervention/control condition, as well as emotion regulation, sustained attention, and personality traits.	The present work shows that mindfulness meditation improves attention capacity and text comprehension. However, mindfulness meditation does not affect reading speed. Finally, this study showed that meditation can help in emotion regulation.
Suliman et al. (2023), Saudi Arabia	The current study investigates the impact of an educational program based on cognitive neuroscience on developing reading comprehension skills among second-grade students in the Kingdom of Saudi Arabia.	Quasi-experimental design. The sample was divided into two groups: 30 students in the experimental group and 29 in the control group. The researchers developed two instruments: a cognitive neuroscience-based educational program, and a written test.	The results revealed statistically significant differences in favor of the experimental group, while no significant differences were found based on gender or the interaction between gender and group.
Tarrasch et al. (2016), Israel	This study explored the effects of a Mindfulness-Based Stress Reduction (MBSR) intervention on reading, attention, and psychological well-being among people with developmental dyslexia and/or attention deficits.	An extensive battery of reading tests was used, whether each participant had dyslexia, and which error types s/he makes, and then the rate of each error type before and after the MBSR workshop was compared. Then the effect of MBSR was evaluated on each of the attention functions. Nineteen Hebrew readers completed a 2-month mindfulness workshop.	The reading improvement induced by mindfulness sheds light on the intricate relationship between attention and reading. Mindfulness reduced impulsivity and improved sustained attention, and this, in turn, improved reading of adults with developmental dyslexia and ADHD, by helping them to read via the straight path of the lexical route.

Author & Year & Country	Objective	Method	Results
Shen (2022), China	To manage the undesirable effect of anxiety on students, a wide scope of research has been dedicated to determining the triggers of anxiety and pedagogical interferences that can assist students with mitigating anxiety. Mindfulness is a relaxation strategy that has been related to constructive impacts when utilized as a managing technique for stress and anxiety. Given the eminence of mindfulness and resilience in learning situations, the present study sets forth to examine the role of these constructs in alleviating English as a foreign language (EFL) learner's anxiety.	502 Chinese EFL learners took part in this research. They were asked to respond to the three questionnaires, namely resilience, mindfulness, and anxiety. To answer the research question of the study, a linear multiple regression was run, and the findings demonstrated that mindfulness and resilience together could significantly predict anxiety.	The findings in the present research are according to what learners can do to mitigate their anxiety but include recommendations for educators. Because recognizing what to do to decrease tension in the class is a basic problem for many educators, becoming aware of such constructs, namely resilience, and mindfulness could be a reasonable necessity in this domain.
Allen et al. (2012), Denmark	Although the impact of mindfulness training (MT) on self-regulation is well established, the neural mechanisms supporting such plasticity are poorly understood. MT is thought to act through interoceptive salience and attentional control mechanisms, but until now conflicting evidence from behavioral and neural measures renders difficult distinguishing their respective roles.	To resolve this question, we conducted a fully randomized 6-week longitudinal trial of MT, explicitly controlling for cognitive and treatment effects with an active-control group. We measured behavioral metacognition and whole-brain blood oxygenation level-dependent (BOLD) signals using functional MRI during an affective Stroop task before and after intervention in healthy human subjects.	Findings highlight the importance of active control in Mindfulness Training (MT) research, indicate unique neural mechanisms for progressive stages of mind-fulness training, and suggest that optimal application of MT may differ depending on context, contrary to a one-size-fits-all approach.
Jonkman et al. (2022), Thailand	This study attempts to empirically examine the effect of mindfulness on teacher resilience by integrating characteristics of Eastern and Western mindfulness.	A concurrent triangulation mixed methodology was applied in this study. In the quantitative part, the cross-sectional questionnaires were completed by 330 teachers who were working in five universities in Thailand. The Mindfulness Awareness Attention Scale (MAAS) was employed to quantify mindfulness in Eastern perspective, and the Langer Mindfulness Scale (LMS14) was employed to quantify mindfulness in Western perspective.	The findings give additional support to the argument of how mindfulness plays an important role in enhancing teacher resilience.

Source: Bloom, 2020.

Table 4. Data Analysis. Summary Description of improvement areas.

IMPROVEMENT	AUTHOR	COUNTRY
reading comprehension	Alshaharni et al. (2023)	IRAQ
	Sheikhzadeh (2017)	IRAN
	Sulieman et al. (2023)	SAUDI ARABIA
	Lusning et al. (2023)	GERMANY
Self-efficacy for Teaching	Waldman (2019)	POLAND
Stress and Anxiety Reduction	Adrienne et al. (2015)	ENGLAND
	Özeke-Kocabaş & Koyuncu (2023)	TURKEY
	Shen (2022)	CHINA
learning and cognitive skills	Wang & Liu (2016)	CHINA
	Moghadam & Ghanizadeh (2021)	IRAN
emotional regulation	Lusning et al. (2023)	GERMANY
	Allen et al. (2012)	DENMARK
	Tarrasch et al. (2016)	ISRAEL
teacher resilience	Jonkman et al. (2022)	THAILAND

Source: Own elaboration.

Results

This literature review has evidenced the usefulness of mindfulness to enhance reading comprehension, as demonstrated by table 3. Alshaharni et al. (2023), Sheikhzadeh (2017) and Lusning (2023), showed the positive correlation between mindfulness and reading comprehension among EFL learners due to the reflective thinking, attention improvement, and text comprehension. Other positive results were established for stress and anxiety reduction. Mindfulness through meditation helped teachers and students to focus their attention by altering functional connectivity in the brain, regulating emotions, and reducing impulsivity according to Adrienne et al. (2015), Özeke-Kocabaş & Koyuncu (2023), Shen (2022), Lusning et al. (2023), and Tarrasch et al. (2016). Besides, it enhanced learning and cognitive skills through learning ownership, creativity, reflective thinking, positive orientation, and language achievement (Wang & Liu, 2016 and Moghadam & Ghanizadeh, 2021). The last but not the least benefits are teacher's resilience and self-efficacy for teaching. Tina Waldman (2019), and Jonkman et al. (2022), noticed the significant improvement by integrating Eastern and Western mindfulness characteristics to regulate emotions, reduce stress, and improve reading comprehension.

Based on the data collected (table 4), Alsharhani et al. (2023), Sheikhzadeh (2017), Azizi & Kralik (2020), Lusnig et al. (2023), Sulieman et al. (2023), and Tarrasch et al. (2016), point out a positive connection between mindfulness and reading comprehension among students from school to

higher education and teachers. Furthermore, Wang & Liu (2016), and Shen (2022), Alsharhani et al. (2023), Taren et al. (2015), Özeke-Kocabaş & Koyuncu (2023), Wang & Liu (2016), Shen (2022), Lusning et al. (2023), and Tarrasch et al. (2016) conclude mindfulness has impacted positively in reading comprehension since it has benefited students and teachers in developing critical thinking, enhancing concentration, regulating emotions, controlling anxiety, managing stress, improving attention, regulating emotions, and improving academic and social skills.

The research demonstrates that practicing mindfulness can lower stress levels, as seen using mindfulness to improve reading comprehension. According to Luwring (2008), stress resilience may be raised by incorporating mindfulness into reading comprehension. Lusning et al. (2023), state mindfulness meditation improves attention capacity and text comprehension. Furthermore, there is evidence that mindfulness meditation, which improves various aspects of attention, affects reading improvement induced by mindfulness and sheds light on the intricate relationship between attention and reading. Likewise, mindfulness reduces impulsivity and improves sustained attention, and this, in turn, improves the reading of adults with developmental dyslexia and ADHD, by helping them to read via the straight path of the lexical route (Tarrasch et al., 2016).

Regarding the reduction of anxiety and stress, Özeke-Kocabaş et al. (2023), mention that mindfulness helped students lower their levels of anxiety and stress. It improved their concentration and attention in developing reading comprehension. Comparably, Krashen (1982) and his Affective Filter hypothesis suggest that learners have an innate mental structure that influences the effectiveness of language acquisition. By reducing stress and anxiety through mindfulness techniques, learners can lower their affective filter, allowing for improved focus and comprehension in reading activities. It is worth exploring these connections further through research and practical applications to see how mindfulness practices can benefit language learners in terms of concentration and emotional well-being.

The literature review used in this study is aligned with the objective that mindfulness enhances concentration in EFL reading comprehension. The positive relation is established in the research conducted by Sheikhzadeh (2017), Waldman (2019), and Tarrasch et al (2016), who present consistent findings when students and teachers use mindfulness, they get higher levels of reading comprehension skills. Wang & Liu (2016), Shen (2022), and Lusning et al (2023), suggest the improvement of attention and concentration through mindfulness, and as a result, a better comprehension of English texts.

To get evidence of the positive correlation between mindfulness and reading comprehension, several methodological approaches have been used in these studies. They include quantitative and qualitative surveys, experimental designs, and quasi-experimental designs. The data were collected by using interviews and open-ended questionnaires. The triangulation of findings validated

the results and provided a comprehensible understanding of mindfulness and reading comprehension. However et al. (2020), state that since both meditative and socio-cognitive mindfulness practice was utilized in studies further studies could delve into the specific aspects of mindfulness that contribute to these benefits and compare the effects of different mindfulness approaches. This research could provide valuable insights into how mindfulness practices influence various aspects of well-being and cognitive functioning.

Discussion

As stated by Saphiro (2009), mindfulness is a traditional Buddhist practice that focuses on thoughts and the main goal and stays apart from distractions. This meditation process is complex but significant to improve reading comprehension. Reading is influenced by several factors: background knowledge, vocabulary, comprehension, motivation, and text processing (Ghaith, 2017). It has become a difficult skill for several EFL students because they cannot develop it satisfactorily due to anxiety and lack of focus.

Recent studies in neuroscience indicate that mindfulness meditation is known to have various benefits for mental and physical health. Although stress may increase amygdala-sgACC rsFC, practicing mindfulness meditation could reverse these effects and help functional neuroplasticity changes reducing stress (Taren et al., 2015). Stress and anxiety can have side effects during adolescence and can negatively affect learning (Shonkoff & Garner, 2020). The loss of neurons and neural connections may impair learning and cause anxiety.

Özeke-Kocabaş & Koyuncu (2023), suggest that implementing mindfulness activities into existing school programs could be beneficial. Such programs whether based on the mindfulness Buddhist techniques or HGM techniques can have such positive impacts on students. By helping students manage their stress and regulate their emotions, these programs can indeed enhance their overall learning experience and contribute to their academic and emotional literacy.

Conclusion

The OECD Learning Compass 2030 for teachers emphasizes that cognitive, metacognitive skills, and social abilities such as compassion, respect for others, the skillfulness to communicate, and self-awareness are crucial in culturally, and linguistically diverse classrooms. In this review, existing literature was synthesized to evaluate the effectiveness of mindfulness in enhancing reading in EFL classrooms and provide insights for educators, practitioners, and researchers. Mindfulness interventions have indeed been shown to have numerous benefits for mental well-being and cognitive functioning. By promoting greater self-awareness and emotional regulation, mindful-

ness can help individuals better manage stress, improve focus, and enhance creativity. Its positive impact on brain function has also been well-documented, with studies showing that regular mindfulness practice can lead to changes in brain structure and function that support improved cognitive control, emotional resilience, and cognitive abilities. Moreover, mindfulness can mitigate tension and anxiety in the classroom. This factor is an issue for many practitioners and educators becoming aware of such a trend (Shen, 2022).

In addition, the neuroscience of mindfulness proposes that implementing mindfulness activities into existing school programs could be advantageous. Such programs would help students in managing their stress, regulate their emotions, and contribute to their learning experience, which is supposed to contribute to their academic and emotional literacy. Overall, integrating mindfulness into school programs can be a valuable initiative that supports students' holistic development and well-being.

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