#### **COLUMN: RETHINKING CREATIVITY AND TECHNOLOGY IN EDUCATION**



# Seeing things in the here and now: Exploring mindfulness and creativity with Viviana Capurso

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Accepted: 25 March 2022

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We are living a life on the web. We are living our life on Instagram, on Facebook. We are not watching, laughing, and crying in our real life. That's a challenge we could face with mindfulness.

- Viviana Capurso

The thing about meditation is: You become more and more you.

- David Lynch

#### Introduction

In this article we continue our focus on the relationship between creativity and mindfulness, with an eye to learning and technology (a theme we began in Henriksen & Gruber, 2022, and one that will extend for a few columns) through a conversation with Dr. Vivana Capurso. Dr. Capurso is a scholar who studies the connections between mindfulness and creativity. She recalls having the goal, at a young age, of working in a creative industry. Immediately after graduating from university, with a degree in public relations, she found a job in the advertising industry. but the reality of life in advertising and the stresses of working there made her wonder, "Is this the real life of a creative copywriter in an advertising agency?" This ultimately led her to pursue the

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Published online: 12 April 2022

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study of creativity as a scholar, leading to a doctorate in cognitive neuroscience from Sapienza, University of Rome.

Dr. Capurso began meditating over a decade ago, and quickly realized that mindfulness practice could support creativity; thus, this became a primary focus in her research. In particular, she realized that meditation practices allowed one to develop a 'beginner's mind,' something that connected deeply with creativity. Beginner's mind, a term coined by meditation guru Shunryu Suzuki, refers to the development of the mind's ability to see everything as if for the first time, purposefully leaving aside judgements and opinions and opening oneself to possibilities that might be ignored otherwise (Suzuki & Dixon, 2010). This beginner's mind, Dr. Capurso realized, allows us to see the world anew, a process that could be described as 'making the familiar strange' (Stouffer & Russell, 2004)—a fundamental step in the creative process. Csikszentmihalyi makes a similar distinction between "recognition" and "perception"—where perception is akin to taking on a "beginners mind" and is the foundation of creativity.

As Dr. Capurso began looking into mindfulness and creativity she found that very few academics were studying this connection, though her personal experiences validated her sense that such a connection existed. She therefore focused her doctoral research on examining this relationship, exploring questions such as: What is the link between creativity and mindfulness? What does it mean to be creative? How is creativity manifested in different ways? Her move between disciplines, starting from public relations and advertising/ copywriting, gave her a unique interdisciplinary perspective to inform her educational research. As we have noted in other columns, creativity is often a transdisciplinary way of seeing the world, and creative ideas are seeded through cross-pollination between different disciplines (Mishra et al., 2012), and Dr. Capurso's career is an example of the value of such cross-pollination.

In her Ph.D. program, studying the link between creativity, mindfulness, and well-being, she found herself among psychologists and educators who had different ways of thinking about creativity. As she shared, "For my colleagues,



many of them, creativity was solving problems or completing tests. I thought, 'No, when you use creativity at work, you have to find new ideas and you don't know where to find them or how to find them." Her background and perspective on the topics she and her colleagues were studying allowed her to pose questions that others did not often consider. For example, she wondered about how individual creativity could be promoted? "Should I walk around and take a city tour? Or close myself in my office and stare at my computer? What is the best way to be creative?" Her perspective brought a unique dimension to scholarly understandings of creativity and its relationship to mindfulness. Her interest in creativity and mindfulness has continued to this day as she regularly engages in research to illustrate how mindfulness can enhance creative thinking.

# **Linking Creativity and Mindfulness**

Dr. Capurso's definition of creativity is consistent with creativity scholar Mark Runco's definition that was referenced in a previous article in this series. Runco and Jaeger (2012) laid out what is often described as the standard definition of creativity. In brief, creativity has two primary aspects: novelty and usefulness. A creative product or idea needs to be novel, unique and new but also useful or functional. That said, Runco also noted that any definition of creativity must leave room for a contextual component to describe creativity based on the creative person, the creative act, and the context (Richardson et al., 2016). In addition, Dr. Capurso sees this definition through the lens of finding new solutions to old problems, "That is the best definition to me of creativity: solving a problem, an old problem, in a new way. That's what I'm trying to do when I'm working with people." She shared that she commonly receives stereotypical definitions and examples of creativity in her work with teachers, lawyers, and business people, who usually expect that learning about creativity will lead to the somewhat immediate creation of some artifact or piece of art. She wants people to recognize that, "creativity means to see other possibilities, other opportunities, to look at a problem in a totally different way." She shared an example about the importance of simply changing the way one looks at something:

I just read a book where the author talks about the fact that she leaves for France and she starts working in a bookshop, and she leaves some [unsolved] Sudokus for her father. He phones her and says, "You know what? You weren't able to solve this Sudoku because you are staring at this number like a six, but I just turned the paper up and down and I saw it as a nine and I was able to solve the problem.'

This notion of creativity as a 'reseeing' of what's out there (or what your mind assumes is there) aligns with the concept of 'beginner's mind' and the nonjudgmental observation qualities of mindfulness meditation. Meditation allows an opening of the mind that makes space for multiple perspectives. Mindfulness research has shown how it improves our capacity for empathy—as it allows us to simply watch our minds, creating space between ourselves and our judging thoughts to acknowledge and recognize different perceptions of the world (Kemper & Khirallah, 2015). Dr. Capurso emphasized that an important point about mindfulness meditation is the mental shift away from our common mental habit of judging without noticing, to move toward its exact opposite—noticing without judging, thus creating a form of curious attention (Capurso et al., 2014). She stated:

We are not used to seeing things in the here and now, we are just used to mind-wandering. 'I'm thinking about the problems of yesterday. I'm thinking about the problems of tomorrow, memories, anticipation'

Much of this philosophy underlying mindfulness emerges from long-standing Eastern and South Asian spiritual traditions, particularly Buddhist philosophy. This philosophy and its practices emphasize being present and letting go of the overreliance that humans have on individualized identity (as a 'thinker of thoughts') in favor of a connection to a sense of oneness and integration (Shonin et al, 2014). The secular recontextualization of mindfulness in society has supported the emergence of the concept for use in contemporary social contexts or organizations like schools, where it can benefit wellbeing more broadly (Sun, 2014). However, Dr. Capurso is also cautious of the 'efficiency' mindset or productivity drive that popular mindfulness sometimes takes on within organizational cultures. While a sense of focus can often occur through mindfulness, its goal is not centered on becoming more focused or productive, but about learning to develop awareness of one's own thoughts. She noted that this is related to ethics, and that "in the Buddhist tradition... the ethic gives you a better life, because if you have your awareness of your consciousness, you can live in a different way." She notes that this emphasis on ethical creativity is another key point to understanding the relationship between mindfulness and creativity, and de-attaching from problematic thoughts.

Dr. Capurso says that when you really stop and observe your mind, you are able to see that your thoughts are not real, "Your thoughts are not solid, they are something that have been created by your mind. We are used to believing in our thoughts because we believe our mind says something true." Following the Cartesian hierarchy of mind over body, captured in Descartes' famous remark, "I think therefore I am," we often simply assume that all our thoughts are true or that they define who we are as individuals. However, in

mindfulness practice, the training to nonjudgmentally notice our minds reveals the temporal nature of thoughts and creates some mental space to avoid overidentifying with them. This has implications for research and practice not just in creativity but also in mental health, in helping people avoid overidentifying with negative thought patterns (Breedvelt et al., 2019). As Dr. Capurso noted:

This is one of the most important aspects of mindfulness. You are not thinking and overthinking, but you are trying to be present in a non-judgmental way to the here and now, watching things as they are, and not trying to create a new reality.

Habitual patterns of unthinking judgment can negatively impact the creative process. Such patterns can lead people to believe their own self-critique—leading to a fear of failure and unwillingness to try new things or take intellectual risks, which is needed for creativity. This relates to a concept known as the 'voice of judgment,' which psychologists have described as an internal monologue that everyone has, which critically (and often negatively) judges our thoughts and actions, limiting our ability to be open to experience and engage creatively. Every person has thousands of thoughts every day; some are helpful, but most are counterproductive—acting as an internal voice that judges and filters and limits a person's experience. Ray and Myers (1989) tied this Voice of Judgment (VoJ) concept to one's sense of creative identity. Mindfulness practices may help us to observe and de-identify with the VoJ (Henriksen et al., 2022), freeing us to see the world more authentically.

Dr. Capurso also argues for nuance in formulating the mindfulness-creativity relationship, pointing to evidence that different types of meditation may have differential effects on creativity. For instance, she noted that openmonitoring meditation, the practice of watching your thoughts coming and going, is known to improve divergent thinking (i.e., having lots of ideas), which is a key part of the creative process. Creativity, however, requires more than divergent thinking. Creativity requires us, once we have many ideas, to make decisions about which ideas to follow then focus in and work on them—in other words, to engage in convergent thinking. Here, a different kind of mindfulness practice, focused-attention meditation, may be more useful. She shared:

The thing is, you can't watch your thoughts or see the content of your mind if you haven't yet developed focused attention—because you are going to think your thoughts and believe them. They're going to ensnare you and you'll be lost in your thoughts.

Dr. Capurso noted that developing these mindfulness practices takes time and practice. She explained that recent studies have shown that regular practice is key:

One of the key things in mindfulness is training. Studies show us that the more you meditate, the more and better results you get. Even if you meditate in a bad way—where you are distracted, you are nervous, you're feeling anxious, you are feeling discomfort. There's a strong quantitative dimension in mindfulness. Research is showing that it is better to meditate regularly daily, even if badly, than it is to meditate seldomly but well.

Through her linking of mindfulness and creativity Dr. Capurso has been successfully connecting longstanding practices in Eastern Asian and South Asian cultures to Western definitions and descriptions of creativity and creative thinking.

## Mindfulness, Mind-Wandering, Creativity

There has been research to suggest that mind-wandering can be essential to the creative process, and that boredom, in fact, can be essential for a creative person (Mann & Cadman, 2014). This presents a complex paradox for those untangling the relationship between creativity and mindfulness. Mind-wandering is "a common everyday experience in which attention becomes disengaged from the immediate external environment and focused on internal trains of thought" (Schooler et al. 2014, p. 1). If mind-wandering involves getting lost in thought—then mindfulness is the opposite—bringing attention and awareness to thoughts in order to distance from them. And yet, mind-wandering reliably correlates with creative thinking and creative achievement (Baird et al., 2012). So how is it that mindfulness and mind-wandering seem to operate in opposing ways, while each seems to support creativity? Dr. Capurso had insights into this:

We consider mind-wandering as a state of daydreaming or reverie...What we do not consider often is that mind-wandering is related to rumination. This is the real obstacle for creativity. When you say to yourself 'What should I say? What should I do?' This is rumination. Have you ever solved a problem with rumination? Probably not, because we are in the same old thought mechanism without having the opportunity of seeing something new.

She noted that mind-wandering is positive for creativity if you can pay attention to the wandering and remain unattached to your thoughts. Mindfulness pushes us to notice them in a non-judgmental way, to recognize their existence but not commit to them. Thus, Dr. Capurso notes that mind-wandering and mindfulness are not necessarily antithetical to each other, as long as there is an active state



of non-judgmental awareness while the mind is wandering, allowing us to notice and follow our creative wanderings and ideas. This is opposed to what often happens if we mind-wander or ruminate without awareness, simply getting distracted without noticing the flow of ideas (even missing creative ones). She provides an example of how this could play out as a kind of 'mindful mind-wandering' which supports creativity, as opposed to the mindless mind-wandering (which is antithetical to both mindfulness and creativity):

One could dedicate some minutes to watching thoughts and writing them down. That's typical mindfulness. There are many interesting solutions that can just arrive as an insight. Write them down and then you can evaluate later with an open mind because mindfulness is about not judging. This is a typical brainstorming activity. And you can record your ideas more successfully if you're aware of the content of your mind. That's one of the secrets of mindfulness.

This 'mindful mind-wandering' is not about letting your mind wander without any attention to the ideas appearing. Rather, it is a kind of purposeful mind-wandering that supports generation of ideas. Mind-wandering, then, can be either a support or an obstacle to creativity, depending on how it operates. Dr. Capurso notes that this is an interesting area for future research in education, studying the differences between "daydreaming, reverie, positive thinking, and rumination." Other researchers have considered the differences in types of mind-wandering and how they affect creativity, finding that certain forms of mind-wandering can be mindful/deliberate, while others are more uncontrolled/spontaneous. The more deliberative mind-wandering (which is helped by mindfulness) can support creativity (Preiss & Cosmelli, 2017).

### Stress, Creativity, and Mindfulness

One of the key points Dr. Capurso made was about the negative role played by stress in creativity. Specifically, she described the connection between stress, mindfulness, and creativity, noting Greenberg's research on cognitive flexibility and cognitive rigidity. Cognitive rigidity happens when our own experiences prevent us from seeing possible solutions or perspectives (Greenberg et al., 2012), leading to the inability to see alternative framings or solutions to a problem. She argues that mindfulness can support and strengthen cognitive flexibility, describing some relevant practices:

Every time you enter a room, you see something new. Every time you talk with a person, you discover something new. The ability to watch things with a new mind is strongly related to awareness. One of the basic exercises in meditation is to stare for three minutes at a candle thinking only about the candle. When you stare at a candle and try to think about it, your mind starts wandering in three seconds and you say, 'I feel so stupid staring at this candle. I'm not able to do it.' But the practice is essential, because if you're able to concentrate, you can see so many new things.

She described another activity that can be eye-opening for both children and adults:

Try to paint all the things that are in a room without being in a room. You just enter the room, you see every object, you get out and you paint the objects, and you probably forgot everything! You are going to forget all the things because you are missing the details. How many details are we missing in our life, in our everyday life? And could we work with it with mindfulness? This is one of many possible exercises to help us see a new approach, new things, or to see all things in a different way.

This highlights the attention training that mindfulness provides, and how we so often fail to actually notice what's in front of us. While it is common for practicing artists to view things from multiple perspectives, Dr. Capurso provides key insights into the role of creativity across disciplines, and how mindfulness offers an approach, a methodology, and a way of seeing and living that can support both wellbeing and creativity.

### **Mindfulness in Education**

Dr. Capurso also underlined the role of mindfulness in education; her early work included experiments on the role of mindfulness in executive functioning, and children's attitudes towards mindfulness. She recalled a moment from one of her first studies in a classroom:

I was asking, 'Why did you start practicing mindfulness?' One of the students raises his hand and says, "Because my mom says that we can train our attention, we can be more attentive, more silent, more concentrated, and we can have better results at school. And we can do better things in our life.'

Dr. Capurso noted that this response characterizes how people often see mindfulness as a means to an end, rather than its true purpose to help us understand our own minds. It is easy for people to misperceive mindfulness as a productivity tool, rather than a mental self-awareness method. Though there are practical benefits from mindfulness practice, her work in schools has taken a broader lens—not only for dealing with stress, but also for family relationships in working



with parents too. This breadth of engagement can pose significant challenges. She recalled that, "I remember parents staring at their mobile phones and asking me, 'I don't know why my son or my daughter is always distracted by something.' And they were staring at their smartphones while they were talking to me."

Dr. Capurso has taught parents mindfulness strategies to be practiced during daily life. For example, at lunch time a parent might say, "Okay, lunch is here. Everybody stop now, close your eyes and just smell what we cooked today. Just pay attention, just watch what you have in your dish."

In keeping with this broad view of the concept, she conducted a study on mindfulness for reducing stress and burnout for teachers and students. This was especially evident during the pandemic. She described her experience, "I was working in Spain and I remember my students getting angry, and mindfulness was the solution to help them accept their reality. We were all angry, we were afraid." One thing she tried to do was reframe the narrative. Instead of complaining about the reality and viewing it with misery:

We started saying, 'We are lucky in this situation. We are safe. We are home. Of course, we can't go out. How can we look at this situation in a different way?' We created this blog, called *Optimism is Contagious*. We asked, 'What can I do for the community? Am I able to cook for instance?' Or, 'I will do a short video teaching people how to do this particular dish.' Or, "Am I able to do yoga? I will teach people with a video how to do yoga.' We were trying to do something for the local community to be aware of the situation, to accept anger, fear, all the negative emotions that were obviously there.

As we collectively reflect on the years of the pandemic, the response that Dr. Capurso and her colleagues had, and the support they provided, are a reminder that stress, anger or frustration, rarely offer ideal environments for creativity. If the present environment is a struggle, it may help to non-judgmentally accept the reality of it before acting to change it; and that alone can open the doors to creative thinking.

# Implementing Mindfulness Practices in Schools

When it comes to implementing mindfulness practices in schools, Dr. Capurso believes that people should understand the *reasons* for implementing mindfulness practices in any school setting. For example, it might be to reduce stress levels in students or to have a happier school climate. She also believes that the successful implementation of mindfulness

practices in an educational system requires that all stakeholders, including teachers, administrators, parents, and students, be informed and trained. Dr. Capurso has shown that when these practices are put in place there are positive academic outcomes as well. If students and teachers are able to bring a different level of awareness to and acceptance of their thoughts and emotions, then that can work towards decreasing stress and supporting student and teacher wellbeing (Crescentini et al., 2016).

She contrasted the current reality that students face in most schools, of heavy academic loads and continuous testing, with her time working in a Montessori school. In the latter school the day started with five minutes of silence, a sustained time of quiet concentration. Just spending a few minutes daily being silent can have a significant impact. Dr. Capurso also emphasized the importance of moments of fun, playing, etc. Mindfulness does not mean that you are controlled and silent all the time. Implementing those small moments of awareness can reduce stress and support teachers' and students' enjoyment of school (Fabbro et al., 2020).

Dr. Capurso acknowledges the challenges that teachers and students face in schools such as small overcrowded classrooms, and lack of time to cover an ever-expanding curriculum. In England many schools have sought to mitigate these challenges by implementing mindfulness strategies and routine practices. Or for example, our previous column reported on a school district mindfulness project in East Phoenix. Devoting 5 or 10 min a day is a relatively small investment of time but it can have a significant impact on students and teachers. The presence of benefits to students and teachers alike is supported by a range of recent research on mindfulness in school settings (Henriksen et al., 2020). Dr. Capurso's insight helps us realize that the relationship of mindfulness to creativity is not that mindfulness just makes you more creative, but that mindfulness sets the stage for more nuanced and effective creative engagement and thought processes, by increasing awareness and empathy and decreasing judgment and fear.

# The Role of Technology in Mindfulness Practices

Dr. Capurso believes that the impact of technology on students' stress and self-awareness is largely negative. This is not necessarily a function of the attributes of the technology itself but rather connected to how children use technology. As a society, we have become more dependent on and engrossed with technology. She noted that, "children are watching too much internet or television and doing too many things at the same time. This is behavior they see in parents and in teachers too, because we are all human." This is not a surprise as many programs and apps have



been designed to be addictive (Alter, 2017), to give a quick dopamine rush for a "like" or a "share" on social media. Algorithms are continuously studying our preferences and intentionally presenting us images, links, ads, and more—engineering distraction by design to keep us hooked onto these devices. This emphasizes Dr. Capurso's point on the importance of developing the ability to focus one's attention, as it is increasing being challenged through these tools.

While teaching, she often advocates for students to question and challenge their patterns of behavior, and disrupt their habitual uses of technology. She says that small changes can help people better regulate their digital technology habits, suggesting:

Set the alarm clock not on your mobile phone, but on a real alarm clock. Change the fact that you wake up in the morning and the first thing you do is go to your mobile phone. If you want to be disruptive, turn off the notifications of Instagram, Twitter, or Facebook.

Thus, it may not be technology itself that is causing negative behaviors, but the habits we have formed around it. Technologies are tools which can be used differently depending on how people approach it. Dr. Capurso noted that technologies helped us, through the pandemic, to connect with people and allowed for distance learning. That said, it is also critical to pause and be aware of mindless or habitual use of tools. She discussed recent studies that showed how participants felt a need to immediately interact with social media, saying that:

And yet, if they waited 30 minutes, their answer was different. That's a matter of awareness. We are so aggressive, so impulsive. If we could just sit down and wait for a couple of minutes just to be aware of what we are saying about what we are writing on the web, maybe our mentality could change in a totally different way.

Dr. Capurso also mentioned the wide array of meditation apps that are available and some of their design aspects that may actually undermine mindfulness. Thus, it becomes critical to recognize and be aware of the kinds of behaviors that these apps are actually encouraging. She recommends being cautious about which apps one is using and being aware of how they are impacting one's practices. Ironically, many apps claim to support mindfulness but actually serve as a distraction, designed to ensure that users do not go too long without paying attention to their devices. As she said:

I think apps can be useful, but many of them have constant notifications. 'Are you aware now? Are you more mindful? Are you meditating? Are you doing this?' It becomes another stress of your life. Of course, they could be helpful, for example, after a meditation course, because they can just be a kind reminder of how your day was, for instance, like writing down a diary of gratitude.

Dr. Capurso also appreciates technology because it allows her to teach mindfulness classes online, but that has its challenges as well. For instance, she noted that her students appear to be more easily distracted when they are at home. In addition, she does see positive aspects in that technology can easily fuel our curiosity, which is useful for creativity, by bringing access to a range of new ideas and possibilities. Most importantly though, Dr. Capurso hopes that mindfulness can help us remember that there is life beyond the internet. She shared a quote from one of her favorite writers, Erma Bombeck, who said, "If I could live my life over again, I would have cried and laughed less when watching television, and more when watching real life." For Dr. Capurso this is a fundamental challenge of using technology. As she shared:

We are living a life on the web. We are living our life on Instagram, on Facebook. We are not watching, laughing, and crying in our real life. That's a challenge we could face with mindfulness too. We need to ask ourselves, 'What is reality, right now?'

Dr. Capurso shared a final thought with us that describes her core beliefs around mindfulness and creativity:

I would like to underline again, one of the sayings of Erma Bombeck. She said, "If I could live my life over again there would be less 'I'm sorry,' more 'I love you,' and more 'I'm listening." Mindfulness and creativity are about listening to people, watching reality and really seeing it.

In keeping with these references to the broader culture, and speaking to the broader issue of why mindfulness is requires, she referenced the lyrics from Simon and Garfunkel's song *The Sound of Silence*: "People talking without speaking, people hearing without listening." And then she asked us to consider:

Are we going to turn in this kind of person? Or can we really listen to people and talk to them? This is one of the challenges set out by mindfulness, and this is fundamental for creativity as well as for well-being. A creative person often has a good mood and wellbeing, and can take a different approach to life, to problems. And we are facing new problems every day. This could be one of the secrets of mindfulness.

**Acknowledgements** This column series on creativity, learning, and technology is a collaborative effort by the Deep Play Research Group.



Its members include Danah Henriksen, Punya Mishra, Natalie Gruber, Sarah Keenan-Lechel, Rohit Mehta, Carmen Richardson, and Melissa Warr. Different individuals take turns in authoring the pieces in this series.

#### References

- Alter, A. (2017). Irresistible. Vintage.
- Baird, B., Smallwood, J., Mrazek, M. D., Kam, J. W., Franklin, M. S., & Schooler, J. W. (2012). Inspired by distraction: Mind wandering facilitates creative incubation. *Psychological Science*, 23(10), 1117–1122.
- Breedvelt, J. J., Amanvermez, Y., Harrer, M., Karyotaki, E., Gilbody, S., Bockting, C. L., ... & Ebert, D. D. (2019). The effects of meditation, yoga, and mindfulness on depression, anxiety, and stress in tertiary education students: a meta-analysis. Frontiers in Psychiatry, 10, 193
- Capurso, V., Fabbro, F., & Crescentini, C. (2014). Mindful creativity: The influence of mindfulness meditation on creative thinking. *Frontiers in Psychology, 4*, 1020.
- Crescentini, C., Capurso, V., Furlan, S., & Fabbro, F. (2016). Mindfulness-oriented meditation for primary school children: Effects on attention and psychological well-being. Frontiers in Psychology, 7, 805.
- Fabbro, A., Fabbro, F., Capurso, V., D'Antoni, F., & Crescentini, C. (2020). Effects of mindfulness training on school teachers' self-reported personality traits as well as stress and burnout levels. Perceptual and Motor Skills, 127(3), 515–532.
- Greenberg, J., Reiner, K., & Meiran, N. (2012). "Mind the trap": Mindfulness practice reduces cognitive rigidity. *PLoS ONE*, 7(5), e36206. https://doi.org/10.1371/journal.pone.0036206
- Henriksen, D., & Gruber, N. (2022). Mindful and Creative: Building educational systems for individual and community wellbeing. *TechTrends*, 66(2), 125–130.
- Henriksen, D., Richardson, C., & Shack, K. (2020). Mindfulness and creativity: Implications for thinking and learning. *Thinking skills* and creativity, 37, 100689.

- Henriksen, D., Heywood, W., & Gruber, N. (2022). Meditate to create: Mindfulness and creativity in an arts and design learning context. *Creativity Studies*, 15(1), 147–168.
- Kemper, K. J., & Khirallah, M. (2015). Acute effects of online mind-body skills training on resilience, mindfulness, and empathy. *Journal of Evidence-Based Complementary & Alternative Medicine*, 20(4), 247–253.
- Mann, S., & Cadman, R. (2014). Does being bored make us more creative? Creativity Research Journal, 26(2), 165–173. https://doi.org/10.1080/10400419.2014.901073
- Mishra, P., Henriksen, D., The Deep-Play Research Group. (2012). On being (in)disciplined. *Tech Trends*, 56(6), 18–21.
- Preiss, D. D., & Cosmelli, D. (2017). Mind wandering, creative writing, and the self. In M. Karwowski & J. Kaufman (Eds.), *The creative self* (pp. 301–313). Academic Press; Cambridge.
- Ray, M. L., & Myers, R. (1989). Creativity in business. Main Street Books.
- Richardson, C., Mishra, P., the Deep-Play Research Group. (2016). Navigating the tensions inherent in understanding creativity: An interview with Mark Runco. *Tech Trends*, 60(5), 415–418.
- Runco, M. A., & Jaeger, G. J. (2012). The standard definition of creativity. Creativity Research Journal, 24(1), 92–96. https://doi.org/10.1080/10400419.2012.650092
- Schooler, J. W., Mrazek, M. D., Franklin, M. S., Baird, B., Mooneyham, B. W., Zedelius, C., & Broadway, J. M. (2014). The middle way: Finding the balance between mindfulness and mind-wandering. *Psychology of Learning and Motivation*, 60, 1–33.
- Shonin, E., Van Gordon, W., & Griffiths, M. D. (2014). The emerging role of Buddhism in clinical psychology: Toward effective integration. *Psychology of Religion and Spirituality*, 6(2), 123.
- Stouffer, B., & Russell, J. (2004). Making the strange familiar: Creativity and the future of engineering education. In 2004 Annual Conference (pp. 9–883)
- Sun, J. (2014). Mindfulness in context: A historical discourse analysis. *Contemporary Buddhism*, 15(2), 394–415.
- Suzuki, S., & Dixon, T. (2010). Zen mind, beginner's mind. Shambhala.

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