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LIGHTING THE SPARK: HOW TEACHERS AND SCHOOLS CAN PROMOTE GIFTED STUDENT CREATIVITY

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Introduction

The Massachusetts Institute of Technology is considered one of the top STEM universities in the world. In the "What We Look For" section of their admissions page, they include sections on both "hands-on creativity" and "risk-taking" (Massachusetts Institute of Technology, n.d.), wherein they equate success with "trying something new," "getting your hands dirty," and "mess[iness]." Why is it that this type of creativity among the next generation is so important? Anecdotally, few would disagree that creative thinking is a ubiquitous necessity during development – from a young boy drawing with sidewalk chalk to a teenager trying to deal with being locked out of her car for the first time. At a broader level, reviews of creativity studies have demonstrated its systemic significance across the literature infostering better social relationships, improving people's resilience and mental health, increasing employee satisfaction, promoting businesses' competitiveness, spurring the rapid development of technology, and catalyzing general sociopolitical progress (Forgeard & Kaufman 2016; Plucker, Beghetto & Dow, 2004).

Thus, of the many controversies in the modern psychology, cultural anthropology, and education fields, the importance of creativity for human survival and actualization does not seem to be one of them. "[I]n the creative age, memorization of facts and procedures is not enough for success" (Sawyer, 2016, p. 270). How then can we – as

researchers, teachers, administrators, parents, and mental health professionals – help our gifted youngsters be a generation of thoughtful innovators and problem-solvers? The goal of this chapter is to review the literature on creativity enhancement, with an emphasis on practical strategies for promoting creativity among gifted learners.

Creativity and Giftedness: The Basics Definitions

In many ways, scholars are still in the process of defining what creativity looks like and what it means to be creative. It would be outside the scope of this chapter to provide a thorough summary of the competing conceptions (see Kaufman, 2009). Still, it is necessary to provide a working definition for the purposes of the current discussion. One parsimonious and handy description of the creativity construct is provided by Sternberg and Lubart (1999, p. 3): “Creativity is the ability to produce work that is both novel (i.e., original, unexpected) and appropriate (i.e., useful, adaptive concerning task constraints)." This juxtaposition of novelty and usefulness of ideas is one common to many current definitions.

It is important for the reader to know at least two further conceptual premises from which the chapter will operate. First, creativity is seen as distinct from intelligence (Sternberg, 2003), and also then, from giftedness. Both types of abilities are essential to success in life; however, not all creative acts may be termed intelligent, and not all intelligent acts may be termed creative. Even highly intellectually gifted children vary in terms of creativity (Pfeiffer, 2015). This prefaces the second point: individuals are thought to vary in creative potential, which manifests itself in a complex interaction with the environment (Guilford, 1950; Russ & Fiorelli, 2010). In other words, creativity is considered an “individual differences” variable, influenced both by “nature” and “nurture.” Despite the myth that creativity is innate or something one is born with, there is a plethora of evidence that creative thinking and achievements can be encouraged by outside factors (Plucker et al., 2004), which is good news for this chapter.

Models

Beyond basic definitions, there is a rich literature on different ways to conceptualize creativity and creativity theories. Scholars (e.g., Kaufman, 2009) have tended to distinguish among four different

classifications of theories: those concerning the creative person, the creative product, the creative process, and the creative place (or press). As described by Kaufman (2009), person theories focus on the characteristics of individuals considered to be creative and tend to focus on knowledge, skills, personality traits, and motivation. Product theories, on the other hand, place the spotlight on the creative output (e.g., the painting, the poem, the scientific theory) and evaluation of how novel and original products are.

Place theories of creativity put the focus more on the environmental factors helping or hindering creativity. There are no popular formal theories of creative environments alone. However, Kaufman (2009) mentions the work of Amabile and colleagues, who describe factors conductive to creativity in the workplace. Finally, process theories emphasize the ingredients, steps, and experiential qualities of creativity. One major theory in this area has been that of Wallas' cognitive creative process. As described by Kaufman (2009), this theory traces the life of an idea through five stages: preparation, incubation, intimation (the anticipation of a breakthrough), illumination (breakthrough), and verification (confirming the idea). Of the four "p", place and process theories are the most relevant in terms of discussing outside intervention. To the extent that we want to describe ways to boost or foster creativity amongst our youth and in our classrooms, these are two main avenues to explore. The following is a review of a variety of creativity-enhancing strategies, starting with the least formal and ending with structured and established approaches.

Providing a Creativity-Friendly Environment

Process-level strategies have much to do with deliberately planting the seeds of creativity. However, place or environmental strategies have more to do with cultivating the soil in which minds can grow, providing space for new ideas to flourish naturally. Although no two environments need look the same, the literature suggests a variety of creativity-friendly adjustments that can be made.

A first consideration for a creative classroom is the physical space. First, the environment must meet basic needs, such as safety and shelter, with a comfortable setting for both learning and reflecting (Fairweather & Cramond, 2010; Richards, 2010). This is an important stipulation considering the sometimes aging and underfunded classrooms available in public schools. Furthermore, to promote imagination, the

environment should include a variety of interesting and stimulating resources, materials, objects, and experiences (Fairweather & Cramond, 2010; Richards, 2010). Thinking outside the box, newer researchers have begun to consider the effects of natural and outdoor settings on creativity enhancement, finding positive results in initial studies (Ferraro, 2015; Palanica, Lyons, Cooper, Lee & Fossat, 2019). Thus, it is completely within the name of creativity promotion that a teacher may choose to hold class outside on a nice day.

In addition to providing a physical space, educators must also strive to establish the mental space for creativity. One must maintain a psychologically safe classroom in order to see creativity thrive. Originality is not for the faint of heart, as the birthing of new ideas often involves experimentation and taking chances (Sternberg, 2016). As such, being creative can be a daunting, even scary process for gifted youth (Russ & Fiorelli, 2010). In order to mitigate such anxieties, teachers can set the right tone, promptly shutting down criticism (Fairweather & Cramond, 2010).Generally, a student must feel safe and encouraged to express themselves, to be intellectually brave (Richards, 2010), to take risks (Fairweather & Cramond, 2011; Fletcher, 2011; Nickerson, 1999), to be resilient in the face of setbacks, and to confidently champion their own ideas to others (Sternberg, 2016). Teachers can guide the development of independent thinking by encouraging students to ask all manner of questions and byrewarding a broad range of answers, solutions, and attempts (non-optimal answers should be framed as a step in the process, not a halting failure; Nickerson, 2010). They also are advised to limit formal assessment when students are brainstorming and exploring to let novel new ideas flourish without confinement (Renzulli, 2016).

Similar to the concept of psychological safety, another key component to the creative classroom is freedom. Freedom might look like self-government, such as allowing students some level of self-determination in their assignments, due dates, grading criteria, or even self-evaluation of their work (Fairweather & Cramond, 2010; Nickerson, 1999; Renzulli, 2016; Sternberg, 2016). Self-direction of this kind is particularly important because intrinsic motivation andsincere passion for a subject (versus being compelled by outside factors) are well-known keystones of creative achievement (see Kaufman, 2009 for a summary of Amabile's work on motivation). Freedom may also look like play or free time. Play has been found to serve an important role in creativity development and enhancement (Plucker, Guo & Makel, 2018), with many studies showing that unstructured play time is a direct, longitudinal

correlate of individual creativity (e.g., Garaigordobil, 2006; Mullineaux & Dilalla, 2009). Freedom might look like creating movement in the classroom. Physical activity ranging from aerobic activities during PE (Latorre Román, Pantoja Vallejo & Berrios Aguayo, 2018; Ruiz-Ariza, Suárez-Manzano, López-Serrano & Martínez-López) to squeezing stress balls or a hand gripper have been found to boost performance on creativity tests (Kim, 2015; Rominger, Papousek, Fink & Weiss, 2014). Yes, freedom may look a bit louder and wilder than the typical classroom setting (Renzulli, 2016), but if one wants to incite untamed, new ideas, the environment may have to mirror the mindset, at least temporarily.

With this call for needed play and respite, educators are charged with protecting time for innovative pursuits, which to an outsider, may indeed look like "wasted time." However, creativity does take time, and not just as a figure of speech. As discussed, innovation thrives on play, mind wandering, experimentation, and iterations (Fairweather & Cramond, 2010; Nickerson, 1999). In fact, meta-analysis shows that performance improves on creativity tasks and tests with longer time limits (Said-Metwaly, Fernández-Castilla, Kyndt & Van den Noortgate, 2019). However, in the current K-12, educational milieu, time is already in short supply. How does a lone teacher, already charged with stacking up so many content areas, standards, and benchmarks, fit in yet another? It seems as though teachers may want to call on the powers of creativity, not only to help their students, but themselves.Can theycleverly cut back on 20 minutes of "busy work" (Fletcher, 2011)? Can they create long-range projects that portion out that needed incubation time into digestible bites (Fairweather & Cramond, 2010)? Can they infuse creativity nuggets into their current curriculum (discussed further below)? If creativity is not just a buzzword or trendy psychological imperative to which we pay lip service, we ultimately do have to prioritize it somehow.

Before we get swept away with Pollyannaish ideas of boundless imagination and brainstorming sessions without rules or ends, we need to revisit the definition of creativity for some guidance. As discussed, creative work is both novel and appropriate (Sternberg and Lubart, 1999), meaning it has to conform to some expectations or "constraints" (Stokes, 2010). Thus, productive creativity is, in fact, aided by certain types of structure. For instance, if one wants to see creativity in the classroom, one must expect creativity in the classroom. Today's learners often spend much of their time engaged in rote memorization, prepping for standardized tests, and doing exercises with a single "right answer" (Renzulli, 2016). Divergent thinking is not necessarily intuitive in many of these tasks (Baer & Garrett, 2017). However, as Baer and Garrett point out, increasing accountability in schools does not preclude a focus on

critical, original thinking, and studies show that one simple way to increase imagination in the classroom is to expect it and verbalize that expectation. A study of high school students showed that simply adding the instruction to "be creative" enhanced their performance on a divergent thinking task (Forthmann, Wilken, Doebler & Holling, 2016), and subsequent meta-analysis has confirmed that making instructions for creative performance explicit in both divergent thinking and creative product tasks improves outcomes (Said-Metwaly et al., 2019). Additionally, most creative output is the result of deliberate time and effort, not magical "aha" moments (Plucker et al., 2018). In expertise research, evidence suggests that approximately 10,000 hours of "deliberate practice" in a domain is needed to master a skill or field (Ericsson, Krampe & Tesch-Romer, 1993). Thus, teachers should help normalize the long and deliberate road to becoming a successful creator.

Aside from telling students what to expect with the creative process, educators can also work to show them. As will be discussed further below, social learning and modeling play a strong role in creativity development. Having samples or examples to look at while completing creative work can stimulate more original responses (and unique brain activations!; Fink, Grabner, Gebauer, Reishoger, Koschutnig & Ebner, 2010); however, it is recommended that educators use multiple, diverse examples to best model divergent thinking and prevent students from locking into a prematurely narrow schema of the desired outcome (Stokes, 2010). Notably, both creative attitudes and actual products can serve as models (Plucker et al., 2018), and both successes and failures are important learning tools (Sternberg, 2016). Many different figures can provide good examples, including famous creators, teachers, parents, other community adults, and even peers (Plucker et a., 2018; Richards, 2010). Beyond simply facilitating activities and cultivating positive attitudes, teachers can practice what they preach. They may participate in creative classroom activities, themselves, to model the process, an open (even vulnerable) attitude, and a problem-solving approach, and alsoto show that they value and enjoy creative pursuits (Nickerson, 1999; Renzulli, 2016).

A final way to engineer an innovation-friendly classroom is to incorporate more group assignments, which, again, also capitalizes on the power of modeling – peer modeling. A long tradition of creativity research has focused on the role of groups, with the thought that group members stimulate and feed off each other's ideas (Nickerson, 1999). However, more recent inquiry into group work suggests that it is not a magic cure-all (Nickerson, 1999). Commenting on the continued mixed evidence in the realm of group creativity enhancement, Plucker and colleagues (2018)

suggest that unstructured groupwork alone is not sufficient to produce effects. Teachers can scaffold this work by setting parameters, such as grouping students of compatible socio-cognitive development and encouraging them to set goals together, exchange ideas freely, and openly discuss their social dynamics. There is also evidence that hybrid models, wherein students get time to process independently, as well as with a group, optimize outcomes (Korde & Paulus, 2017; Nickerson, 1999).

Fostering the Creative Process

The creative process is a mysterious one; yet there are many programs, methods, and models claiming to be able to influence this process at different points. Two main process-type, direct interventions are enrichment programs and creativity training programs. The first approach, enrichment, suggests that educators "infuse creativity" into their existing day-to-day routines and lesson plans (Fairweather and Cramond, 2010). Enrichment programs, though slightly more structured, draw on many of the same ideas discussed above with regard to creative environments.

One prime example of an enrichment approach is the School-wide Enrichment Model (SEM; Reis & Renzulli, 2009). While the program was developed as a broader talent development program for gifted learners, it puts a high priority on promoting creativity, specifically. There are several preliminary steps general to the program, including evaluating talent potential, assessing the individualized interests and needs of each student, and presenting accelerated academic content. However, the step most relevant to creative thinking is the final step, the Enrichment Triad Model (ETM).

The Enrichment Triad Model has three levels (Reis & Renzulli, 2009): General Exploratory Activities (Type I), Group Training Activities (Type II), and Investigations of Real Problems (Type III). General Exploratory Activities are just that and are meant to help students explore or be exposed to a variety of people, fields, and ideas. This might involve field trips, speakers, or special school activities (e.g., a science demonstration). Group Training Activities involve group-based exercises intended to develop many of the skills and qualities discussed earlier regarding successful group innovation (e.g., problem solving, critical thinking, reference skills, communication skills). The final level, Investigations of Real Problems, involves students taking on an authentic problem or project, such as conducting a chemistry experiment or writing a piece of music.

The goal behind SEM and ETM is to provide gifted students the chance to develop their thinking skills and learn about diverse fields, with

the hope of sparking interest, passion, and self-directed creative engagement. Reis (n.d.) has summarized the implementation and research base of SEM in practice, stating that it has been adopted in at least 2,500 schools domestically, demonstrating successful use with diverse ethnic and socioeconomic populations, as well as international populations. SEM has been shown to increase students' creative production (in school and otherwise), both immediately and into the future. Most recently, the SEM project has recently launched an online extension called Renzulli Learning, which assesses individuals' interests and provides tailored recommendations for creative enrichment exercises and projects.

Beyond the SEM and system-level enrichment models, there are more à la carte options. Renzulli (2016) provides a very practical model, the Creative Idea Generator, as a step-by-step strategy for teachers to work creativity training into their existing curriculum, on a lesson-by-lesson basis. Also, it should be noted that existing arts programs within schools have been found to increase performance on divergent thinking tasks among large samples of young children (Hui, He & Ye, 2015). For those attempting to save arts education from budgetary cuts, creativity enhancement efforts aren't a bad platform to argue from. Sawyer (2016) asserts that arts education benefitscognitive skills such as creativity, and, when merged with other content areas (e.g., visual arts and math), art simply helps students engaged and learn better.

Finally, at the highest level of creativity intervention, creativity training programs typically have an underlying foundation in creativity theory and purport to specifically enhance performance. These programs first surfaced in the 1960s (Sawyer, 2016) and typically involve a structured curriculum, with worksheets, projects, and activities emphasizing different elements of creative thinking. Examples of programs include the Purdue Creative Thinking Program (Feldhusen, 1983), the New Directions in Creativity Program (Renzulli, 1973), and Khatena's Training Method (Khatena, 1970). Such programs focus on a variety of tactics, including developing cognitive processes, practice, receiving feedback, teamwork, and real-world problem solving (Beghetto, 2008). Although the efficacy of such programs has previously been questioned (Nickerson, 1999), more recent evidence suggests that they produce positive effects in divergent thinking, creative attitudes, problem-solving, and creative production (Beghetto, 2008). Furthermore, meta-analyses of creativity training – formal and informal—have shown effect sizes in the .60-.70 range (Huang, 2005; Ma, 2006; Scott, Leritz & Mumford, 2004), which are considerate moderate in terms of practical significance.

For those interested in the specifics of such programs beyond the theoretical, the analyses provide some guidance on the pros and cons of different approaches. With regard to general effects, the Creative Problem-Solving Program (CPS; Osborn, 1963; Parnes, 1967) showed above average effects (particularly for a relatively short duration) in two meta-analyses (Ma, 2006; Huang, 2005). New Directions in Creativity and Khatena's Training Method also showed effects above the mean in Ma's (2006) meta-analysis. Regarding non-program specific factors, training has been found to benefit from including attitude training, simple ideation, cognitive skills development, real-life exercises, and combinations of various techniques (Ma, 2006; Scott et al., 2004). However, programs tended to falter if they only focused on components like problem identification or incubation (Ma, 2006). Conflicting results were found as to the ideal age-level or duration for implementation of programs (Huang, 2005; Ma, 2006; Scott et al., 2004). Even more crucial, criticism has been aimed at formal creativity training programs because they typically measure outcomes via divergent thinking tasks, which don't always correlate with real-world creativity (Sawyer, 2016). Further research is certainly needed to clarify these points and many others to provide guidance to consumers wanting to make informed, real-world decisions.

Readiness and Social-Emotional Considerations

Having these types of strategies available is invaluable to invested adults hoping to boost student creativity. However, it also important to understand when and how it is developmentally appropriate to implementthem, and to what end. It is generally accepted that children are capable of being creative in the sense that they can produce novel and appropriate thoughts and products, but not to the extent that they would typically make revolutionary contributions to a field (Stokes, 2010).Research has generally been mixed as to whether creative development proceeds in stages or a more continuous evolution (Pfeiffer & Thompson, 2013). A study of over 2,000 Chinese school children shows scores increasing across the elementary and middle school years (Lau & Cheung, 2010). Others have argued that it waxes and wanes (e.g., the well-documented "fourth-grade slump") or even remains constant, as a stable IQ-like ability (Russ & Fiorelli, 2010). Despite disagreement over the course of its development, there is one point of consensus: most agree that the path to creativity begins early in life (Pfeiffer & Thompson, 2013; Stokes, 2010).

Modern theoretical approaches to creativity development typically explore how creative thinking dovetails with general cognitive, physical, social, or language development. Lesner & Hillman (1983) draw from Piaget's ideas, suggesting a child would need to be at the preoperational stage (age 2-7) or later to have developed the cognitive processes (e.g., symbolic representation, ego decentration) necessary for imagination. In more modern cognitive terms, the dynamic developments in neural plasticity, working memory, processing speed, response inhibition, and mental sets throughout childhood each limit (or enable) a child's creative expression at different points in growing up.

Regarding socio-creative development, peer pressures to fit in may affect children's willingness to take risks and stand out as creators. Kohlberg's model of changes in conventionality posits that children gradually develop from conventionality (the height of which may be middle childhood) to unconventionality into their teen years, eventually moving beyond strict adherence to social norms (Kohlberg, 1987). Furthermore, Erik Erikson's psychosocial stage theory of development presents a series of challenges across the lifespan (e.g., for infants, developing trust versus mistrust; for adolescents, developing identity versus role confusion; Erikson, 1968). Lesner and Hillman (1983) propose that successful resolution of these conflicts is crucial for the development of creative personality and behavior. Finally, Russ and Fiorelli (2010) highlight Vygotsky's theories on social learning to the extent that creative problem-solving is learned in play and discussion with peers. At the same time, there is anecdotal evidence that some children (and adults) who "don't fit in well" may be in a heightened position to create creatively (Pfeiffer, 2015), so various courses of social development may, in fact, be normative for later achievement.

Overall then, it seems that creativity development leans heavily on other developmental processes, such as cognitive and social maturation. Adequate levels of skill, passion, motivation, and emotional regulationare needed for successful creative exploration and talent development. Indeed, a variety of theoretical models – such as Bloom's taxonomy (Amer, 2006), Ericsson's deliberate practice expertise model (Ericsson et al., 1993), and our own talent development model (Pfeiffer and Thompson, 2013) – all couch creativity as a higher order, culminant ability. Years of skill-building, practice, learning, and trial-and-error are needed with an activity before one can be expected to start generating novel ideas. A young child must learn to grasp a crayon before he can create unique drawings. A teenager may want to learn the history of climate change before she decides what kind of meteorological data she

might want to collect for a class project. Thus, again, creativity takes time. Although there is some mixed evidence as to the efficacy of creativity promotion efforts at different ages (Ma, 2006; Scott et al., 2004), evidence seems to suggest that interventions should begin at young ages to leave ample time – as early as the elementary or preschool years (e.g., Hui et al., 2015) – but keeping cognitive and emotional limitations in mind.

A Summary of Creativity Enhancement Strategies for the Classroom

Although there is certainly much more room for scholarship in the area of creativity promotion and talent development, the reader can see that there is already a sizeable toolbox of techniques available for those wanting to grow the young minds in their classes. To summarize, the following is a short list of evidence-based suggestions for promoting creativity in the schools:

- Ensure that the physical space of the classroom is safe, comfortable, interesting, and stimulating. Consider outdoor activities.
- Cultivate a psychologically safe space, free of peer ridicule and rewarding of off-the-wall questions, answers, and creations. Also, strive to limit formal, stringent assessment procedures in purely creative activities.
- Emphasize freedom during imagination-focused exercises, allowing students to daydream, play, move, and determine their own project parameters in the hopes of developing their passion for specific pursuits.
- Protect and prioritize time for creativity in the classroom. Perhaps even more important, brainstorm ways to incorporate creativity-building strategies into your existing curriculum and lesson plans.
- Make expectations for creativity explicit! Students do not always understand when and to what extent using their imagination is desirable.
- Normalize the hard work of innovation. Students need to grasp that true achievement typically derives from extended effort, as well as trial and error.
- Provide plenty of examples, models, and role models of creators and creative work. Don’t forget to include yourself as an

excellent and accessible potential role model of both creative attitudes and products.

- Incorporate well-designed group work to help students build off each other's ideas. Successful groups typically have guidelines and monitoring from a teacher and also involve some kind of individual processing time.
- For large-scale or long-term educational programming, consider purchasing a well-established creativity program (e.g., CPS), incorporating evidence-based practices (e.g., attitude training,real-life exercises), or implementing school-wide enrichment activities (e.g., SEM).
- For further ideas, Reisman (2016) provides an excellent review of a variety of specific activities and tips aimed at promoting originality, flexibility, risk-taking, divergent thinking, convergent thinking, elaboration, fluency, tolerating ambiguity, resistance to premature closure, and creative problem-solving.

Future Directions

The current review is, by no means, intended to be an exhaustive summary of all creativity enhancement efforts, but instead, an overview of some of the most common themes. Although creativity promotion research has a fairly well-developed base at this point, new research questions are constantly presenting themselves. The following are just a few up-and-coming areas forward-thinking educators may want to start tracking on:

Mindfulness: Put simply, mindfulness involves focus on and acceptance of one's own thoughts, and practicing mindful meditation has increasingly found a home in many services dedicated to personal wellness (Baer & Krietemeyer, 2006). Exact guidance on how to incorporate mindfulness activities in the classroom should probably be considered preliminary at best; however, new evidence is promising. For instance, for adults, creativity on divergent thinking tasks was high in groups having longer exposure to mindfulness practices relative to those with less or no mindfulness history (Berkovich-Ohana, Glicksohn, Ben-Soussan & Goldstein, 2017). Also, in a recent meta-analysis, mindfulness practice was weakly but positively ($r = .22$) associated with creativity (Lebuda, Zabelina & Karwowski, 2016).

Technology: According to Renzulli (2016), the proliferation and ubiquity of new technologies have blown the roof off the possibilities for gifted talent development, with a vast trove of information available at the fingertips of many (though not all) students via electronic devices. Initial studies in this area have shown the promise of integrating technology into creative endeavors. For instance, learning design and creative problem solving via computer programming has been shown to enhance the performance of middle school and high school aged gifted students (Kim, Chung & Yu, 2014). Furthermore, undergraduates simply participating in a PowerPoint design project was found to boost their divergent thinking test scores relative to a control group (Mokaram, Al-Shabatat, Gong & Abdallah, 2011).

Multicultural Competence & Generalizability: As discussed above, being exposed to the novel ideas of others helps to stimulate one's own thought processes. Thus, it makes sense that engaging with different cultures (e.g., living abroad, speaking more than one language, engaging meaningfully with those different from oneself) may enhance creative thinking (Leung & Chiu, 2010; Leung, Maddux, Galinsky & Chiu, 2006). However, even with increasing globalism and emphasis on intersectional identities, very little of the creativity enhancement research pays attention to these issues. Psychology research, in general, has been slow to tackle issues of diversity and intersectionality (Cole, 2009). Creativity studies rarely seek out diverse samples or couch their findings in terms of participant demographics — issues which prompt questions about generalizability and whether any findings are culture-bound. Thus, teachers wanting to best serve their diverse student bodies should pay attention as research remedies these gaps.

Conclusion

> "The challenges we currently face are without precedent. […] we're going to need every ounce of ingenuity, imagination, and creativity to confront these problems. Also, we're living in times of massive unpredictability. The kids who are starting school this September willbe retiring—if they ever do—around 2070. Nobody has a clue what the world's going to look like in five years, or even next year actually, and yet it's the job of education to help kids make sense of the worldthey're going to live in".
> Interview with Sir Ken Robinson (Azzam, 2009, p. 23).

Indeed, though the whiplash speed of modern technological advancements may have some believing we have it all figured out and

future generations are set for life, creativity has not suddenly become optional. Industrialization and automatization have made obsolete many ways that people have occupied themselves, earned income, and made meaning of their lives in the past, and creativity is rising as one of the last unique uses of people (Guilford, 1950). In order to start lighting the sparks of creative young minds to burn throughout their own lifetimes, this chapter has proposed a variety of strategies ranging from day-to-day "teachable moments" to rigorous, formal training programs. It should be noted that experimenting with and combining these types of strategies is encouraged to optimize their effects (Plucker, Runco & Hegarty, 2011). If one wants to be in the business of creativity promotion, the rules seem to be to intervene early, often, and with a good dose of imagination, oneself!

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