THE INTERNATIONAL JOURNAL OF CREATIVITY & PROBLEM SOLVING
2015, 25(2), 47-59

Creativity, Emotion, and Art: Development and Initial Evaluation of a Workshop for Professional Adults

Marina Ebert, Jessica D. Hoffmann,
Zorana Ivcevic, Christine Phan and Marc A. Brackett
Yale University, USA

A workshop was designed to teach professional adults a set of creativity (problem finding and idea generation) and emotional intelligence (using emotions to facilitate thinking and understanding emotions) skills through engagement with the visual arts. Skills were developed and practiced over eight sessions and applied to real-life problems identified by participants. After participating in the workshop, participants showed more positive attitudes towards creativity, emotional intelligence, and art appreciation. Participants reported higher self-perceived creative and emotion skills and expressed high satisfaction with the workshop.

The links between emotions, creativity and the arts are numerous. Art evokes a variety of emotions (Silvia, 2005, 2009). Emotions can influence both the creative process and the way we interact with art, and can be both beneficial and detrimental to creativity (Amabile, Barsade, Mueller, & Staw 2005; George & Zhou, 2002; Isen, 1999). Art creation is universally acknowledged as a creative process (Feist, 1998). Recently, it has been proposed that the process of art appreciation is a similarly creative process that involves construction of meaning (Tinio, 2013). Thus, the premise of our work was to use art as a vehicle through which to teach both emotional intelligence and creativity skills. Workshop development and testing was promoted and done in collaboration with Botín Foundation, as a part of its educational programming in creativity, emotions and the arts that will be implemented in its new art center (The Botín Center, Santander, Spain).

Emotional intelligence skills, including successfully perceiving, understanding, using, and regulating emotions, have been taught in educational and workplace settings to improve social-emotional climate, and aid academic, professional, and social success (e.g., Rivers, Brackett, Reyes, Elbertson & Salovey, 2013; Slaski & Cartwright, 2003). For instance, the RULER approach to teaching emotion skills (Brackett & Rivers, 2014), improves students' academic achievement in language arts (e.g., Rivers & Brackett, 2011), as well as increases warmth and connectedness between teachers and students, sense of autonomy and leadership among students, and teachers' focus on students' interests and motivations (e.g., Rivers et al., 2013).

Correspondence concerning this article should be sent to Jessica Hoffmann, Yale Center for Emotional Intelligence, 340 Edwards St., New Haven, CT 06511 USA. E-mail: Jessica.Hoffmann@yale.edu

The work on this paper was funded and done in collaboration with the Botin Foundation (*Emotions, Creativity and the Arts* grant; Principal investigators: Zorana Ivcevic and Marc Brackett).

Interventions aimed to increase creativity have focused primarily on developing positive attitudes towards creativity and enhancing cognitive skills aiding creative problem solving. For example, creativity training designed by Basadur and colleagues focused on developing and improving attitudes towards creative problem solving and divergent thinking. Five core attitudes were found to be changed with training: preference for ideation, tendency to avoid premature critical evaluations of ideas, valuing new ideas, not being too busy for new ideas, and belief that creative thinking is not bizarre (Basadur & Finkbeiner, 1985; Basadur, Graen, & Scandura, 1986; Basadur & Hausdorf, 1996).

Another set of training programs addresses cognitive creativity skills, such as divergent thinking (Torrance, 1966), associative thinking (Mednick, 1962), and sustained observation (e.g., Hetland, Winner, Veenema, & Sheridan, 2013), among others (e.g., Scott, Leritz & Mumford, 2004; Rose & Ling, 1984). Rose and Ling (1984) conducted a meta-analysis to test whether systematic, long-term creativity training was effective in improving creative thinking skills. The skills of creative problem solving and divergent thinking have dominated such training programs and have been successfully improved with training. For instance, a creativity training paradigm developed by Osborn and colleagues focused on creative problem solving skills (Isaksen & Treffinger, 2004; Treffinger, Isaksen, & Dorval, 2000). The program's components included understanding the challenge (e.g., constructing opportunities, exploring data, framing problems), generating multiple ideas, and preparing for action (e.g., making decisions, developing promising alternatives, planning for successful implementations of ideas; Treffinger, Isaksen, & Dorval, 2000). In the 50 years since it was developed, multiple studies have supported the effectiveness of creative problem solving training (e.g., Basadur, Graen & Green, 1982; Mansfield, Busse, & Krepelka, 1978).

Visual art has been successfully used as a medium for teaching not only art appreciation, but also social-emotional learning, critical thinking and communication, active discussion, argumentation, and problem-solving skills (Burnham & Kai-Kee, 2005; Burton, Horowitz, & Abeles, 2000; Funch, Kroyer, Roald, & Wildt, 2012; Hetland et al., 2013; Housen, 2001; Seifert, 1992). We build on this tradition and connect three previously unconnected areas – creativity, emotion, and the arts. Based on these connections across the domains, we hypothesize that practicing emotional intelligence skills and creativity skills through the engaging medium of visual arts may provide a unique opportunity to develop and use these skills. Art provides emotion-filled subject matter that can be observed and discussed. In this way, emotions can be examined in a psychologically safe space. Similarly, discussing the creative process in relation to art can remove concerns about negative social consequences of sharing original or unconventional ideas and thus facilitate the process of learning creativity skills.

The workshop presented in this paper was designed to teach two sets of emotion skills: (1) using emotions to facilitate thought, and (2) understanding emotions, (two branches of emotional intelligence), and two creativity skills: (1) problem finding and (2) idea generation. Using emotions refers to how people can harness their feelings to inform their thinking and behavior, leading to more effective problem solving, reasoning and creativity; understanding emotions refers to the skills of accurately labeling feelings and knowing their causes and consequences, which impacts self-understanding and social interactions (Mayer & Salovey, 2007). Problem finding and idea generation are central to the creative process. Problem finding is the act of formulating or restating

a problem so that it can be moved towards a solution (Getzels, 1979). While the technical skill of a painter and a copycat may be equivalent, problem finding distinguishes the artist as creative (Getzels, 1979; Getzels and Csikszentmihalyi, 1976). Idea generation is also central to creativity; the more ideas one can generate, the more likely one is to reach creative ideas. Idea generation is most often equated with creativity, as evidenced by the most popular creativity assessments (e.g. Torrance Tests of Creative Thinking; Torrance, 1966; Guilford's Alternative Uses Test; Guilford, Christensen, Merrifield & Wilson, 1978).

In this paper we describe the goals and activities in the workshop teaching creativity and emotional intelligence skills through visual arts. Then, we present results of the initial evaluation of the workshop based on experiences of two groups of professional adult participants. In a pre- and post- design, we tested changes in participants' attitudes and beliefs about creativity and emotional intelligence skills, as well as their self-perceived skills in these domains.

METHOD

Intervention

The main goal of the workshop is to teach emotional intelligence skills (using emotions to facilitate thought and understanding emotions) and creativity skills (problem finding and idea generation) through engagement with the visual arts (see Table 1). Over the eight sessions, lasting 60-70 minutes each, skills are developed and applied to real-life problems. In this workshop, creativity skills are taught using five techniques: sustained observation, perspective shifting, visualization, reflection, and associative thinking. Emotional intelligence skills are taught using the Mood Meter (Brackett & Rivers, 2014), as well as through the sustained observation and reflection techniques (see Table 2).

The workshop manual includes the description of the goals and objectives of the workshop and the role of the facilitator. Each session is described in detail, providing step-by-step guidance to the activities and including suggested language for facilitators (see Table 3).

Facilitator training spanned three days (total of 20 hours) and was led by two of the workshop developers (one with a Ph.D. in clinical psychology and a Master's level research assistant). Six individuals with extensive experience in delivering social-emotional learning, creativity, and art appreciation workshops at the Botin Foundation attended the training. The educational background of the facilitators ranged from art history, to social work and developmental psychology.

The facilitator training provided the conceptual and scientific background of the workshop and allowed ample time for the facilitators to practice delivering the activities. As the training took place in an art gallery, the facilitators had a chance to utilize the artworks on display to recreate the workshop experience very close to reality. Following the hands-on training, the instructors led coaching sessions with the facilitators before, during, and after the workshop run.

Workshop evaluation

Participants and Location. Participants were 20 adults, aged 18-68 (M = 43.7, SD = 12.67; median age = 43; 13 females) recruited in the community of Santander, Spain. Two groups of ten participants each were run in March-April 2015. The workshop sessions took place twice a week for four weeks at the exhibition space at the Botin

Table 1
Overview of Target Skills

Domain	Skill	Definition	Example
Emotional intelligence	Using emotions to facilitate thinking	Applying information provided by emotions to direct attention, facilitate thinking and problem solving, appreciate points of view achieved when experiencing different emotions	*Example: Remembering a sad autobiographical episode from childhood when comforting a sad child*
	Understanding emotions	Recognizing the source of emotions in oneself or others; understanding the course of emotional experience	*Example: Knowing differences among varying levels of emotional experience, e.g., from amusement, to joy, to elation; knowing how anticipation can turn into disappointment*
Creativity	Problem finding	The process of identifying problems or opportunities through exploration, change of perspective and problem redefinition	*Example: Manipulating materials or props when working on an art project*
	Idea generation	Thinking of multiple ideas, through making broad associations and considering multiple perspectives	*Example: Making an extensive list of potential birthday gifts for a friend before settling on the final decision*

Foundation. The exhibited art was diverse in topic and style and was drawn from the Foundation's collection of modern art.

Two trained facilitators led each session. One of the workshops took place during the day on the weekends, and the other one was scheduled on weekday evenings.

Table 2
Overview of Target Techniques

Techniques	Description
Sustained Observation	Observing a piece of art for an extended time, allowing one to notice details and gain insights from the work
Perspective Shifting	The purposeful use of changing positions, angles, attitudes so as to view an object, person, situation or problem from an alternative angle or point of view
Visualization	Imagining that one is somewhere else (e.g., within the scene of a painting, in someone else's position)
Reflection	The act of looking back on an experience with curiosity to verbalize what happened and why; noticing patterns and building insight
Associative Thinking	Making associations among concepts; connecting disparate elements into a meaningful whole
Mood Meter	The tool and visual space comprised of four quadrants obtained by the intersection of pleasantness and activation/energy dimensions of emotional experience

Materials and Procedure. Participants completed a self-report questionnaire designed for this study, both before and after attending the 8-session workshop. At pre-test and post-test, participants were presented 7 statements assessing their attitudes and beliefs about emotions (e.g., "Identifying feelings accurately and understanding where they come from can be improved with practice"), creativity (e.g., "Creative problem solving is a skill that can be improved with practice"), and engaging with art (e.g., "Looking at artwork, a person could learn a lot about how they think and feel"). Participants used a 6-point Likert scale with response options ranging from 'strongly disagree' to 'strongly agree'.

Another block of 8 questions asked participants to rate their creativity skills (e.g., "How good are you at making connections or seeing similarities where others see unrelated things?), emotional intelligence skills (e.g., "How good are you at noticing feelings in yourself while observing a piece of art?"), and art engagement skills (e.g., "How good are you at using multiple perspectives to understand a piece of art?"). Participants used a 6-point Likert scale, from 'I have never done this before' to 'I am excellent at doing this'.

Before the workshop, participants were also asked an open-ended question about their expectations and hopes for the workshop. After completing the workshop, satisfaction was assessed, and participants were given an opportunity to share the most useful and interesting parts of the workshop, provide recommendations for improving the workshop, and indicate the most salient learning experiences from this workshop (7 items rated on a 6-point scale, from 'strongly disagree' to 'strongly agree'; and 4 open-ended questions).

Table 3
Overview of Workshop Sessions

Session	Overview
1	• Introduction to goals and techniques of the workshop • Engagement with visual arts: sustained observation of a piece of art (painting), observing art from multiple perspectives and angles
2	• Engagement with visual arts: techniques of sustained observation, perspective shifting, and reflection are practiced with facilitator's guidance; a technique of visualization is introduced • Technique for labeling and understanding emotions (Mood Meter) is introduced
3	• Techniques learned in Session 1 and 2 are practiced with the facilitator's guidance (sculpture as a medium)
4	• Techniques of sustained observation, perspective shifting, and visualization are practiced independently, without the facilitator's guidance • Problem finding skills are taught through understanding unpleasant/ challenging emotions associated with artwork • Integration of target skills and techniques; real life application (participants associate a real life situation to selected artwork)
5	• Idea generation/problem solving: associative thinking technique; participants make connections between a challenging and a pleasant piece of art
6	• Integration of target skills • Real-life application: selecting a challenging artwork and a pleasant artwork and using them to represent everyday problems and possible solutions
7	• Participants consider an everyday problem and its ideal outcome before engaging in art observation and creative problem solving • Participants work with a partner to get an outside perspective
8	• Participants work from problem identification to creative problem solving, using all learned techniques independently • Final wrap up discussion

RESULTS

Paired samples t-tests examined pre- and post-workshop differences in attitudes and beliefs about emotional intelligence and creativity skills, as well as self-assessed emotion and creative skills (see Table 4). After the workshop, participants showed more positive attitudes towards emotional intelligence skills, such as a greater belief that identifying feelings accurately and understanding where they come from can be

improved with practice, $t(19) = -2.98$, $p = .01$, and acknowledging the value of negative emotions for everyday problem solving, $t(19) = -3.45$, $p = .003$. Similarly, participants showed a decrease in the belief that creativity is something that cannot be changed, $t(19) = 2.13$, $p = .05$, an increase in the belief that creativity skills can be enhanced with practice, $t(19) = -2.85$, $p = .01$, as well as an increased belief in the utility of engagement in art for self-understanding, $t(19) = -3.58$, $p = .002$. Medium effect sizes were found for greater belief that identifying feelings can be improved with practice and belief that artwork is useful for self-understanding (Cohen's $d = -0.52$ and -0.56, respectively). All effect sizes are reported in Table 3.

Participants also showed an increase in self-assessed skills, including maintaining sustained attention when observing art, $t(19) = -2.38$, $p = .03$; using multiple perspectives to understand art, $t(19) = -2.90$, $p = .01$, and using imagination and visualization during art observation, $t(19) = -3.45$, $p = .003$.

Satisfaction with the workshop was very high (i.e., "I enjoyed attending this workshop": $M = 6.00$, $SD = .00$; "I would recommend this workshop to others": $M = 5.95$, $SD = .23$; "I learned something about myself": $M = 5.58$, $SD = .48$; "I feel more confident in my ability to solve problems creatively": $M = 5.40$; $SD = .60$), as well as interest in similar workshops in the future (i.e., "I am interested in more workshops": $M = 5.95$, $SD = .23$; "I am likely to return to Botin Center": $M = 6.00$, $SD = .00$), and participants evaluated facilitators as highly knowledgeable ($M = 5.94$, $SD = .24$).

Open-ended responses to exploratory questions about expectations (pre-workshop) and educational experiences (post-workshop) were coded for the presence or absence of four themes: emotional intelligence skills, creativity skills, art appreciation, and self-knowledge or social interaction. Responses were parsed and each idea present in the response was coded separately. For example, if a person wrote that they expected to learn about art and creativity, these would be coded as two separate responses, accounting for the art appreciation and creativity skills categories. Responses not fitting these themes were assigned a code 'Other/Miscellaneous'. Two coders independently evaluated each response to pre- (88.4% agreement) and post-test (87.4% agreement) questions and all inconsistencies were resolved by discussion.

Participants most often expected to learn art appreciation skills, indicated a desire to "develop the capacity to analyze, feel, and appreciate art" and "see works of art from different perspectives" (47%; 9 people), followed by hoping to learn about emotional intelligence skills, such as to "know how to explain emotions" and "understand emotions better" (42%; 8 people). Expectations associated with self-knowledge or social interaction, such as to "know myself better" and "experiment in group settings" were noted by 21% (4 people), and 16% (3 people) expected to develop creativity skills, described as wanting to "learn how to develop my creativity" and to "resolve situations in life using creativity". Approximately a third of participants (37%; 7 people) had more general expectations, such as to "have fun", "be surprised", and "learn new things" (coded as Other/Miscellaneous).

After the workshop, participants shared their thoughts on the workshop experiences. Participants considered emotional intelligence skills (e.g., "the use of the Mood Meter to be able to describe a mood"; 53%, 9 people) most useful in the workshop, followed by creativity skills (e.g., "the association of real problems with possible solutions shows the utility it has in practice") and art appreciation (e.g., "extrapolating art to personal life"; both categories mentioned by 41%, 7 people). Self-knowledge or

social interaction category, such as "to share experiences" and "to improve personal abilities you generally don't work on" were noted as most useful by 29% (5 people).

The most interesting material was described as pertaining to art appreciation, such as to "analyze the art with another perspective and see what emotions it creates in me" (72%; 13 people), followed by the category of self-knowledge or social interaction (e.g., "empathize with others to try to find a solution to their problem"; 56%, 10 people). Emotional intelligence skills (e.g., "recognizing emotions in myself ") and creativity skills (e.g., "creating bridges to associate ideas") were both mentioned as most interesting by 33% of the participants (6 people).

Finally, people described to have learned about art appreciation (e.g., "the great capacity of the artistic experience"; 53%, 10 people), creativity skills (e.g., "reaching a resolution to a problem in a creative way", "knowing that creativity uses elements that you can practice in day to day life"; 47%, 9 people), emotional intelligence skills (e.g., "to put names to the feelings"; 42%, 8 people), and self-knowledge or social interaction skills (e.g., "the true power of solitary and serene reflection"; 42%, 8 people).

DISCUSSION

A workshop was designed to teach professional adults a set of creativity and emotional intelligence skills through engagement with the visual arts. After participating in the 8-session workshop, participants showed both more positive attitudes towards creativity, emotional intelligence, and art appreciation and improved in their self-perceived abilities associated with these target skills.

Several effects of the workshop are noteworthy. Participants showed an increase in their beliefs that both emotional intelligence skills and creativity skills are malleable (growth or incremental mindset; Dweck, 2006). The belief that a particular set of abilities is changeable provides a foundation for successful learning and further mastery of skills and inoculates against the detrimental effects of failures (Dweck, 2006). The results of the pre- and post-surveys also indicate that participants saw the value of art observation as a tool for improving emotion and creativity skills. While prior research on implicit theories of abilities largely focused on intelligence, recent research supports the importance of the growth mindset for creativity. People who believe that creativity is not fixed and can be improved with learning and experience have higher creative self-concept (creative self-efficacy and creative personal identity) and show a greater ability to solve problems creatively (Karwowski, 2014; O'Connor, Nemeth, & Akutsu, 2013).

Two emotional intelligence abilities were taught in the workshop -- emotion understanding and using emotions to facilitate thought (Mayer & Salovey, 1997). Participants developed a strong belief that these skills can be improved with practice and started to master them through the workshop's activities, such as labeling emotions with the Mood Meter tool (Brackett & Rivers, 2014). Participants were taught to view emotions in themselves and in others as useful information, regardless of their valence (Martin, Ward, Achee, & Wyer, 1993; Schwarz, 1990). For instance, feeling calm and serene indicates that one's environment is benign and safe, while a feeling of anxiety reveals that the demands of the situation exceed one's perceived capacity to deal with it. Additionally, emotions play a role in creativity, such that positive emotions are associated with the ability to generate many ideas, while negative emotions

Table 4

Target Attitudes And Abilities at Pre- And Post-test

	Pre-test		Post-test				Cohen's *d*
Target attitudes	M	SD	M	SD	*t*	*p*	
Identifying feelings accurately and understanding where they come from can be improved with practice.	5.35	0.75	5.90	0.31	-2.98	.01	-0.52
When people are feeling unpleasant or negative feelings, it can make them better at noticing and solving problems in their everyday lives.	3.30	1.63	4.30	1.78	-3.45	.003	-0.29
Unpleasant or negative emotions are a healthy part of life than can make people good at creative problem solving.	3.80	1.91	4.35	1.73	-1.68	.11	-0.14
When people are feeling pleasant or positive emotions, they can usually think of more creative ideas.	5.45	0.76	5.65	0.49	-1.17	.26	-0.16
Creative problem solving is a skill that can be improved with practice.	5.60	0.50	5.90	0.31	-2.85	.01	-0.37
Creativity is something you either have or you don't.	3.05	1.53	2.15	1.53	2.13	.05	0.29
Looking at artwork, a person could learn a lot about how they think and feel.	5.10	0.72	5.75	0.44	-3.58	.002	-0.56
Target abilities							
Maintaining my attention while observing a single piece of art for approximately 10 minutes.	3.75	0.85	4.50	1.10	-2.38	.03	-0.38
Noticing feelings in myself while observing a piece of art.	3.60	1.14	4.15	1.04	-1.53	.14	-0.25
Using multiple perspectives to understand a piece of art.	3.70	0.98	4.40	0.82	-2.90	.01	-0.39
Seeing an opportunity for change, growth or new ideas when I am feeling negative or unpleasant feelings.	4.00	1.02	4.33	1.14	-0.95	.36	-0.15
Imagining myself going into a painting or sculpture to explore the scene.	3.30	1.46	4.30	0.98	-3.45	.003	-0.41
Making connections or seeing similarities where others see unrelated things.	4.00	0.73	4.25	1.12	-1.10	.29	-0.14
Solving everyday problems or challenges in creative ways.	4.20	0.62	4.30	0.80	-0.44	.67	-0.07
Discussing my emotional experiences with a group of people.	3.85	0.88	4.35	0.88	-2.24	.04	-0.28

Note: df = 19; Cohen's d effect sizes - .2 = small effect, .50 = medium effect, .80 = large effect (Cohen, 1988).

are associated with critical thinking (Amabile, Barsade, Mueller, & Staw 2005; George & Zhou, 2002; Isen, 1999; Salovey & Palfai, 1993). By the end of the workshop, participants developed an understanding that both pleasant and unpleasant emotions can be beneficial in everyday creative problem solving.

Along with beliefs about the malleable nature of emotion and creativity skills, the participants reported changes in their self-perceived abilities, including higher ability for sustained observation, perspective shifting, visualization, and associative thinking. Participants also indicated being more confident in their ability to solve problems creatively after the workshop, suggesting that the tools and techniques offered through the art-related activities were perceived as applicable to the real life situations.

Visual arts have been chosen as a medium to teach emotion and creativity skills, based on the premise that art is both creative in nature and filled with emotion. Furthermore, examining emotional content and the creative process in a work of art can be psychologically safer for an individual than to start learning from personal life experience. After completing the workshop, participants expressed a belief that engagement with art may help them learn about how they think and feel, facilitate self-discovery and personal growth, learn about other people's perspectives, and create new solutions to everyday life situations. Indeed, those parts of the workshop encouraging participants to examine emotions and real-life problems through the medium of art were described as the most useful. While many participants indicated that engagement with art was their goal, they were not expecting to consider its application to their personal lives.

A significant limitation of the current study is a small sample size. Also, we have collected only limited information on participants' background and we are not able to discuss how potential differences in occupation, or background in arts might have affected the results. A stronger evaluation test would involve a meta-analysis of the results from a larger number of workshop runs. However, since the initial sample consisted of professional adults who already had positive attitudes towards improving emotion and creativity skills, detecting significant positive changes is especially encouraging. Additionally, the most important limitation of the present evaluation study pertains to the change in participants' skills. We only assessed self-perceived creativity, emotion, and art appreciation skills. Self-assessed skills correlate only weakly with psychometrically measured abilities and this is a robust finding both in the areas of emotional intelligence (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006) and creativity (Silvia, Kaufman, & Pretz, 2009). Thus, future research will have to go beyond assessment of self-reported skills and test creativity and emotional intelligence skills before and after the workshop.

The initial pilot of the workshop teaching creativity and emotional intelligence skills through the use of visual arts has proved feasible and enhanced positive attitudes and self-assessed skills in both creativity and emotional intelligence domains, while satisfying participants' curiosity and providing them with an enjoyable experience. Throughout the workshop, participants learned to observe, reflect, and identify emotions in art, as well as in real-life situations, use emotions to guide their understanding of the problem and search for solutions, and employ creative idea generation skills, such as associative thinking strategies, to reach desired outcomes. Combining the teaching of emotional intelligence and creativity skills through art as a medium proved successful in subsequently applying these skills towards solving a real life problem. The reported

results provide a foundation for further testing of the developed workshop for building creativity and emotional intelligence skills in adults.

REFERENCES

Amabile, T.M., Barsade.,S.G., Mueller, J.S., Staw. B.M. (2005). Affect and creativity at work. *Administrative Science Quarterly, 50,* 367-403. doi:10.2189/asqu.2005. 50.3.367

Basadur, M. S., & Finkbeiner, C. T. (1985). Measuring preference for ideation in creative problem solving training. *Journal of Applied Behavioral Science*, 21, 37-49. doi:10.1177/002188638502100104

Basadur, M. S., Graen, G. B., & Scandura, T. A. (1986). Training effects on attitudes toward divergent thinking among manufacturing engineers. *Journal of Applied Psychology, 71*, 612-617. doi:10.1037/0021-9010.71.4.612

Basadur, M. S., Graen, G. B., & Green, S. G. (1982). Training in creative problem solving: Effects on ideation and problem finding in an industrial research organization. *Organizational Behavior and Human Performance, 30*, 41-70. doi:10.1016/0030-5073(82)90233-1

Basadur, M., & Hausdorf, P. A. (1996). Measuring divergent thinking attitudes related to creative problem solving and innovation management. *Creativity Research Journal, 9*, 21-32. doi:10.1207/s15326934crj0901_3

Brackett, M. A., & Rivers, S. E. (2014). Transforming students' lives with social and emotional learning. In R. Pekrun & L. Linnenbrink-Garcia (Eds.), *International handbook of emotions in education* (pp.368-388). Routledge.

Brackett, M. A., Rivers, S. E., Shiffman, S., Lerner, N., & Salovey, P. (2006). Relating emotional abilities to social functioning: A comparison of self-report and performance measures of emotional intelligence. *Journal of Personality and Social Psychology, 91*, 780–795. doi:10.1037/0022-3514.91.4.780

Burnham, R., & Kai-Kee, E. (2005). The art of teaching in the museum. *The Journal of Aesthetic Education, 39*, 65-76. doi:10.1353/jae.2005.0001

Burton, J. M., Horowitz, R., & Abeles, H. (2000). Learning in and through the arts: The question of transfer. *Studies in Art Education, 41*, 228-257. doi:10.2307/ 1320379

Cohen, J. (1988). *Statistical power analysis for the behavior sciences.* (2nd ed.). Hillsdale, NJ: Erlbaum.

Dweck, C. (2006). *Mindset: The new psychology of success*. Random House.

Feist, G. J. (1998). A meta-analysis of personality in scientific and artistic creativity. *Personality and Social Psychology Review, 2*, 290-309. doi:10.1207/ s15327957pspr0204_5

Funch, B. S., Kroyer, L. L., Roald, T., & Wildt, E. (2012). Long-term effect of aesthetic education on visual awareness. *Journal of Aesthetic Education, 46*, 96-108. doi:10.5406/jaesteduc.46.4.0096

George J.M., Zhou, J. (2002). Understanding when bad moods foster creativity and good ones don't: The role of context and clarity of feelings. *Journal of Applied Psychology, 87*, 687-697. doi:10.1037/0021-9010.87.4.687

Getzels, J. W. (1979). Problem finding: A theoretical note. *Cognitive Science, 3* 167-172.

Getzels, J. W., & Csikszentmihalyi, M. (1976). *The creative vision: A longitudinal study of problem finding in art. J*ohn Wiley and Sons.

Guilford, J. P., Christensen P. R., Merrifield, P. R., Wilson, R. C. (1978). Alternative uses: manual of instructions and interpretations. Orange, CA: Sheridan Psychological Services.

Hetland, L., Winner, E., Veenema, S., & Sheridan, K.M. (2013). *Studio Thinking 2: The real benefits of visual arts education*: Teachers College Press: New York, NY.

Housen, A. (2001). Aesthetic thought, critical thinking and transfer. *Arts and Learning Research Journal, 18*, 99–131.

Isaksen, S. G., & Treffinger, D. J. (2004). Celebrating 50 years of reflective practice: Versions of creative problem solving. *The Journal of Creative Behavior*, *38*, 75-101. doi:10.1002/j.2162-6057.2004.tb01234.x

Isen, A. M. (1999). On the relationship between affect and creative problem solving. In S.W. Russ (Ed.), *Affect, creative experience and psychological adjustment* (pp. 3-17). Philadelphia: Brunner/Mazel.

Karwowski, M. (2014). Creative mindsets: Measurement, correlates, consequences. *Psychology of Aesthetics, Creativity, and the Arts, 8*, 62-70. doi:10.1037/a0034898

Mansfield, R. S., Busse, T. V., & Krepelka, E. J. (1978). The effectiveness of creativity training. *Review of Educational Research, 48,* 517-536.

Martin, L. L., Ward, D. W., Achee, J. W., & Wyer, R. S. (1993). Mood as input: people have to interpret the motivational implications of their moods. *Journal of Personality and Social Psychology*, *64*, 317. doi:10.1037/0022-3514.64.3.317

Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), *Emotional development and emotional intelligence: Implications for educators* (pp. 3–31). New York: Basic.

Mayer, J. D., & Salovey, P. (2007). *Mayer-Salovey-Caruso Emotional Intelligence Test*. Multi-

Health Systems Incorporated.

Mednick, S. (1962). The associative basis of the creative process. *Psychological Review*, *69*, 220-232. doi:10.1037/h0048850

O'Connor, A. J., Nemeth, C. J., & Akutsu, S. (2013). Consequences of beliefs about the malleability of creativity. *Creativity Research Journal, 25*,155–162. doi:10.1080/10400419.2013.783739

Palfai, T. P., & Salovey, P. (1993). The influence of depressed and elated mood on deductive and inductive reasoning. *Imagination, Cognition and Personality*, *13*, 57-71. doi:10.2190/FYYA-GCRU-J124-Q3B2

Rivers, S. E., & Brackett, M. A. (2011). Achieving standards in the English language arts (and more) using The RULER Approach to social and emotional learning. *Reading & Writing Quarterly*, *27*, 75-100. doi:10.1080/10573569.2011.532715

Rivers, S. E., Brackett, M. A., Reyes, M. R., Elbertson, N. A., & Salovey, P. (2013). Improving the social and emotional climate of classrooms: A clustered randomized controlled trial testing The RULER Approach. *Prevention Science, 14*, 77-87. doi:10.1007/s11121-012-0305-2

Rose, L. H., & Lin, H. T. (1984). A meta-analysis of long-term creativity training programs. *The Journal of Creative Behavior*, *18*, 11-22. doi:10.1002/j.2162-6057.1984.tb00985.x

Schwarz, N. (1990). Feelings as information: Informational and motivational functions of affective states. In E.T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition* (pp. 527-561). New York: Guilford Press.

Scott, G., Leritz, L. E., & Mumford, M. D. (2004). The effectiveness of creativity training: A quantitative review. *Creativity Research Journal*, *16*, 361-388. doi:10.1080/10400410409534549

Seifert, L. S. (1992). Experimental aesthetics: Implications for aesthetic education of naive art observers. *The Journal of Psychology: Interdisciplinary and Applied*, *126*, 73-78. doi:10.1080/00223980.1992.10543342

Silvia, P. J. (2005). Emotional responses to art: From collation and arousal to cognition and emotion. *Review of General Psychology*, *9*, 342-357. doi:10.1037/1089-2680.9.4.342

Silvia, P. J. (2009). Looking past pleasure: Anger, confusion, disgust, pride, surprise, and other unusual aesthetic emotions. *Psychology of Aesthetics, Creativity, and the Arts*, *3*, 48-51. doi:10.1037/a0014632

Silvia, P. J., Kaufman, J. C., & Pretz, J. E. (2009). Is creativity domain-specific? Latent class models of creative accomplishments and creative self-descriptions. *Psychology of Aesthetics, Creativity, and the Arts*, *3*, 139-148. doi:10.1037/a0014940

Slaski, M., & Cartwright, S. (2003). Emotional intelligence training and its implications for stress, health and performance. *Stress and Health*, *19*, 233-239. doi:10.1002/smi.979

Tinio, P. P. (2013). From artistic creation to aesthetic reception: The mirror model of art. *Psychology of Aesthetics, Creativity, and the Arts*, *7*, 265-275. doi10.1037/a0030872

Torrance, E. P. (1966). *Torrance tests of creative thinking*. Lexington, MA: Personnel Press, Inc.

Treffinger, D. J., Isaksen, S. G., & Dorval, K. B. (2000). *Creative problem solving: An introduction* (3rd Ed.). Waco, TX: Prufrock Press.

Key words: Emotional intelligence, Creativity, Emotions, Visual art