
Title	International high school students' perceived creativity self-efficacy
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Source	<i>The Korean Journal of Thinking and Problem Solving</i> , 18(1), 105-115
Published by	The Korean Association for Thinking Development (KATD), www.creativity.or.kr

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Citation: Hill, A., Tan, A. G., & Kikuchi, A. (2008). International high school students' perceived creativity self-efficacy. *The Korean Journal of Thinking and Problem Solving*, 18(1), 105-115.

International High School Students' Perceived Creativity Self-Efficacy

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A total of 416 high school students rated their perceptions of creativity self-efficacy, emotions and achievement goal orientation. Three subscales of creativity self-efficacy were developed - abilities to generate novel ideas, tolerate uncertainty and focus. Affect was assessed using three scales: the Positive and Negative Affect Schedule, The Satisfaction with Life Scale and the Subjective Happiness Scale. An achievement goal-orientation scale was used to assess four possible achievement goal-orientations. Acceptable Cronbach's Alphas demonstrated the reliability of the scales and hence the appropriateness of using them with the international students. Creativity self-efficacy was positively correlated with positive affect and a mastery-approach orientation that was consistent with current theory and research findings. The relationships between the other three achievement goal-orientations (performance-approach, performance-avoidance, and mastery-avoidance) and creative self-efficacy were less clearly established. Each goal-orientation was positively correlated with some, but not all, aspects of creativity efficacy. The performance approach orientation was negatively correlated with the uncertainty subscale of creativity self-efficacy.

Creativity Self-Efficacy

Creative self-efficacy is coined to describe a person's self belief of his(her) capacity to produce creative outcomes (Tierney & Farmer, 2002). It was conceptualized with reference to Bandura's (1997) theory of self-efficacy and the contemporary understanding of creativity as a behavior that generates novel and useful ideas, products and performance (Sternberg & Lubart, 1999). Creativity self-efficacy is the underlying psychological process that influences an individual's level of self-confidence (Choi, 2004). With self-confidence, people likely are motivated to act towards their goals and persevere, especially when faced with difficulties (Bandura, 1997). Evidently, among employees with high creative self-efficacy, their self-expectations for creative behavior was more strongly related to creative work involvement than among employees with low creative self-efficacy (Carmeli & Schaubroeck, 2007). There

seems a reciprocal relationship between creative self-efficacy and job self-efficacy. Job tenure, job self-efficacy, supervisor behavior, and job complexity would contribute to creative efficacy beliefs. In turn, creative self-efficacy predicts creative performance beyond the predictive effects of job self-efficacy (Tierney & Farmer, 2002). It is noted that examining student' creative self-efficacy may prove useful in supporting the long-standing creativity enhancement efforts of educators and creativity researchers (Beghetto, 2006).

Our study examined the relationship between the concepts creativity self-efficacy and perceived creativity self-efficacy and motivation (i.e., positive emotions indicating the presence of task interest and achievement goal orientation as domain-relevant motivation). Multiple subscales of creativity self-efficacy (Tan, 2007) were developed incorporating that of Beghetto (2006) and with reference to Amabile's (1996) creativity-relevant process. Creativity comprises three components: Creativity-relevant process, domain-relevant process and task motivation. Creativity-relevant processes manifest in multiple ways such as in concept identification (e.g., analogies, "ahas" and transitions), in a wide focus on goal statements and utterances irrelevant to the task, in striving when facing difficulty and in questioning how to do something. These are positive *predictors* of performance (Ruscio, Whitney, & Amabile, 1998). The relevant sets of skills for creative performance and motivation operate at different levels of specificity. The higher the levels of each of the three components, the more creative the product will be (Amabile, 1983, 1996). *Creativity-relevant skills* operate on a *general* level, where they influence responses in any domain and determine the novelty of the response (Amabile, 1996).

Positive Affect

Affect is a broad concept referring to consciously accessible feelings (Fredrickson, 2001) encompassing moods and emotions (Linenbrink & Pintrich, 2002). Affect is represented by two dominant and independent dimensions of positive and negative affect (Watson, Clark, & Tellegen, 1988). Recently studies have pointed a positive relationship between positive affect and creativity (Amabile, Barsade, Mueller, & Staw, 2005; Pe & Tan, 2008). Positive affect promotes creative thinking (Isen, Daubman, & Nowicki, 1987). Feeling good is not simply an indicator of a person's well-being but that positive emotions actually contribute to the development of physical, intellectual, social and psychological resources (Fredrickson, 2001). Individuals with high self-efficacy are less prone to anxiety, stress and depression that results in impaired functioning (Bandura, 1989, 1993). Theories of affect may need to be revised in order to account for the role of affect in creativity (Amabile et al, 2005) and in promoting psychological well-being (Seligman, 2002). Our study employed three measures of affect developed by contemporary positive psychologists. It is hypothesized that creativity self-efficacy scales correlate positively with positive emotion scales.

The Positive and Negative Affect Schedule (PANAS) is a 20-item self-report mood scale to measure the two dimensions of positive and negative affect (Watson, Clark, & Tellegen, 1988). The positive affect scale includes adjectives such as 'attentive', 'excited' and 'enthusiastic', whilst the negative affect scale includes terms such as 'afraid', 'hostile' and 'irritable'. Using a five point Likert scale, respondents rate the extent to which they have experienced each particular emotion, in general, within a specified time period.

The reliabilities of the PANAS scales are acceptably high, ranging from 0.86 to 0.96 for positive affect and .84 to .87 for negative affect (Watson et al., 1988). A study with 1003 participants in the United Kingdom confirmed the internal consistencies of the PANAS scale with Cronbach alphas of .89 and .85 for the PA and NA scales, respectively. Factor validity values were .94 for the PA scale and .93 for the NA scale (Crawford & Henry, 2004).

The Satisfaction with Life Scale (SWLS) is a five-item measure of global life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985). Two of the five items are; "In most ways my life is close to my ideal" and "The conditions of my life are excellent." Diener et al (1985) reported that the SWLS has favorable psychometric properties including high internal consistency (coefficient alpha = .87) and high temporal stability, with a two-month test-retest correlation coefficient of .82. The SWLS correlated (moderately to highly) with other measures of subjective well-being.

The Subjective Happiness Scale (SHS) is a 4-item scale of global subjective happiness (Lyubomirsky & Lepper, 1999). Two items are related to absolute ratings and ratings relative to peers. Two items describe briefly happy and unhappy individuals. Respondents rate the extent to which each characterization describes them. A seven-point Likert scale is used. The four items showed good to excellent internal consistency with alphas ranging from .79 to .94 ($M = .86$). Test-retest reliability over periods from three weeks to one year ranged from .55 to .90 ($M = .72$). Convergent validity of the SHS was established by comparison with published measures of happiness and well-being. Substantial correlations ranging from .52 to .72 ($M = .62$) were found between the SHS and other happiness measures.

Goal Orientation

Goal-orientation theories explain student motivation towards academic tasks in school settings (Schunk, Pintrich, & Meece, 2008). An achievement goal is an integrated pattern of beliefs, attributions and affect, which results in "different ways of approaching, engaging in, and responding to achievement type activities" (Ames, 1992, p.262). The theories postulate a taxonomy of four goal-orientations that is more or less adaptive in learning (Elliot & McGregor, 2001): mastery approach, mastery avoidance, performance approach and performance avoidance. The approach and avoidance distinction and development of the 2 x 2 framework provide the opportunity for greater predictive precision. The mastery orientation is a highly successful approach to academic attainment. Students with a mastery approach orientation are likely to focus on learning and mastering tasks according to self-set standards. A mastery goal-orientation is associated with positive outcomes and behaviors; and a positive correlation between creative self-efficacy and a mastery approach goal orientation (Beghetto, 2006). Our study hypothesized that creativity self-efficacy is positively correlated with a mastery approach goal orientation. Early conceptualizations suggested that a performance goal-orientation, with its focus on out-performing others led ultimately to a range of maladaptive behaviors that had a negative impact on learning and other educational outcomes. The indications are that a performance approach orientation is associated with a range of positive outcomes. In his study, Beghetto (2006) obtained a positive correlation between creative self-efficacy and a performance approach orientation. In contrast, the performance avoidance orientation is generally found to be maladaptive in terms of achieving academic success. Students with a performance-avoidance orientation are preoccupied with avoidance of failure in front of their peers. Con-

sistent in findings the performance-avoidance orientation associates with a range of negative outcomes. It seems reasonable to hypothesize that creativity self-efficacy is positively correlated with a performance approach goal orientation and is negatively correlated with a performance avoidance goal orientation.

Our study used the Elliot and McGregor's (2001) *achievement goal questionnaire*. Three items for each of the four goals were devised to ask subjects to reflect on themselves in relation to a specific context (i.e., 'this class' or 'this course'). In total, there are two subscales of mastery goal orientation, of which one is the approach and the other avoidance orientation. The three items for the *mastery approach* subscale are; "I want to learn as much as possible from this class", "It is important for me to understand the content of this course as thoroughly as possible" and "I desire to completely master the material presented in this class." The three *mastery avoidance* items are; "I worry that I may not learn all that I possibly could in this class", "Sometimes I'm afraid that I may not understand the content of this class as thoroughly as I'd like" and "I am often concerned that I may not learn all that there is to learn in this class."

Likewise for performance goal orientation, there are two subscales, one being the approach and the other the avoidance orientation. For the *performance approach* subscale the three items are; "It is important for me to do better than other students", "It is important for me to do well compared to others in this class" and "My goal in this class is to get a better grade than most of the students." The three items for the *performance avoidance* subscale are; "I just want to avoid doing poorly in this class", "My goal in this class is to avoid performing poorly" and "My fear of performing poorly in this class is often what motivates me."

Exploratory factor analyses yielded four factors that confirmed the statistical independence of each set of items. All of the 12 items loaded above .70 on their primary factors and none of the secondary factors exceeded .35. Each index evidenced good reliability with Cronbach alphas of: mastery-approach goals ($\alpha = .87$), mastery-avoidance ($\alpha = .89$), performance-approach ($\alpha = .92$), performance avoidance ($\alpha = .83$). Thus, the four measures represent empirically separable and internally consistent achievement goal constructs.

METHOD

Participants

The participants consisted of 416 high school students attending British-style education in Singapore. The participants were consisted of 205 females and 211 males. Their age ranged between 12 and 16 years old ($M = 13.32$, $SD = 1.20$). The students surveyed represented at least 26 different nationalities, with more than half ($n = 253$) of them were British. Forty eight students of the study self reported dual nationality and twelve of them did not indicate a nationality.

Measures

Creativity Self-efficacy and Creativity Perceived-efficacy Scales. The *creativity self-efficacy* scale (Tan, 2007) comprised ten items of which three were adopted from Beghetto's (2006) creative self-efficacy scale: "I am good at coming up with new ideas" (#1), "I have a lot of good ideas" (#2), and "I have a good imagination" (#3). Seven items constructed with respect to cognitive style: "I can delay judgment (not making any evaluation) when coming up with ideas" (#4), "I can tolerate ambiguity" (#5), "I can wait patiently for good ideas to emerge" (#6); and working style, "I have

a strong will to master knowledge" (#7), "I constantly check to see how well I am doing" (#8), "I continue doing my task and never give up even if I face difficulty" (#9), and "I have a strong will to improve skills and techniques (#10)" (Amabile, 1983, 1996). The *creativity perceived-efficacy* scale comprised nine items, which were rephrased from the perspective of the peer's view. All items began with "my friends are confident that ...". The participants were requested to rated on a five-point Likert scale with anchors: 1 'very much unlike me', 2 'unlike me', 3 'moderately like me', 4 'like me', and 5 'very much like me'.

Achievement Goal-orientation Scale. The achievement goal-orientation scale was developed to assess students' achievement goal orientations in a specific subject or course of study. For the purposes of this study students were asked to indicate the degree to which each statement is true of them in their mathematics studies. Responses were taken from a 7-point Likert scale ranging from 1, 'not at all true of me' to 7, 'very true of me'.

Positive and Negative Affect Schedule (PANAS). The positive and negative affect schedule (PANAS) was designed to measure the respondent's positive and negative affect. Respondents indicated to what extent they feel this way 'in general' or 'on the average', with reference to a 5-point Likert scale, with anchors: 1 'very slightly', 2 'a little', 3 'moderately', 4 'quite a bit', 5 'extremely'.

Satisfaction with Life Scale (SWLS). The Satisfaction with Life Scale (SWLS) assessed an individual's satisfaction with their life as a whole. The SWLS used a 7-point Likert scale, ranging from 1, 'strongly disagree' to 7, 'strongly agree' yielding a possible score range of 5 (low life satisfaction) to 35 (high life satisfaction).

Subjective Happiness Scale (SHS). The Subjective Happiness Scale (SHS) is a 4-item measure of an individual's global subjective happiness. Two items ask respondents to characterize themselves; firstly using an absolute rating (from 'not a very happy person' to 'a very happy person') and secondly, rating themselves relative to their peers (from 'less happy' to 'more happy'). The other two items offer brief descriptions of happy and unhappy individuals and ask respondents the extent to which each characterization describes them (rating from 'not at all' to a great deal'). Each item used a 7-point Likert scale.

Procedure

The questionnaire was distributed to the participants in October 2007 by their tutors at the beginning of a 'Life Studies' lesson. The students were asked to write their particulars on the questionnaire but were assured of the confidentiality of the responses. Printed instructions were included to the questionnaire. The participants spent approximately 15 minutes to complete the survey.

RESULTS

Reliability and Validity

The Cronbach alpha reliabilities for all the scales ranged between .80 and .89: Creativity self-efficacy scale .82, perceived creativity efficacy scale .89, achievement goal-orientation scale .80, positive affect scale .85, negative affect scale .83, satisfaction with life scale (SWLS) .81, and subjective happiness scale (SHS) .82.

Creativity self-efficacy: From the exploratory factor analysis (EFA), all measures were with a high Kaiser-Meyer-Olkin Measure (KMO) of sampling adequacy, .79, and an approximate Chi-square from the Bartlett's test of sphericity, 811.45 (df = 45, $p < .0001$). The eigen-values for three component factors for the creativity self-efficacy of the participants were 3.13 (component 1, focus, #7, 8, 9, 10), 1.46 (component 2, idea generation, #1, 2, 3), and 1.20 (component 3, uncertainty, #4, 5, 6) accounted for 31.26% (component 1), 14.56% (component 2) and 11.98% (component 3) of variance. Factor loadings of all items (oblimin rotation) ranged between .61 and .82.

Perceived creativity self-efficacy: Using the same analysis, all measures were with a high Kaiser-Meyer-Olkin Measure (KMO) of sampling adequacy, .83, and an approximate Chi-square from the Bartlett's test of sphericity, 1273.73 (df = 45, $p < .0001$). The eigen-values for three component factors for the creativity self-efficacy of the participants were 4.07 (component 1, focus, #7, 8, 9, 10), 1.31 (component 2, uncertainty, #5, 6, 7), and 1.05 (component 3, idea generation, #1, 2, 3) accounted for 40.68% (component 1), 13.12% (component 2) and 10.46% (component 3) of variance. Factor loadings of all items in oblimin rotation were between .57 and .93.

The reliabilities of these sub-scales according to Cronbach alphas were: Idea generation .71, uncertainty .49, and focus .75; and for peer perceived creative efficacy scales: Ideas generation .82, uncertainty .65 and focus .77, respectively.

The achievement goal orientation scale: Factor analysis of the achievement goal orientation scale yielded the expected four factors of 'mastery approach', 'performance approach', 'mastery avoidance' and 'performance avoidance'. Cronbach alphas of: mastery approach .78, performance approach .86, mastery avoidance .74 and performance avoidance .59 indicated internal consistency.

The means, standard deviations, skewness and kurtosis of the subscales were computed (Table 1). All items were subjected to further analyses, as none possessed a value of skewness and/or kurtosis of 1.69 or above.

Pearson Correlations between Creativity Efficacy Scales and Emotions, and Goal Orientation

There were positive correlations between all creativity self efficacy and perceived creativity self efficacy subscales and all the positive emotion scales (PA, SWLS and SHS) at the $p < .05$ and $p < .01$ levels. Negative correlation was observed between the sub-scale of creativity self-efficacy (uncertainty) and NA at the $p < .05$ level, as well as between perceived creativity self-efficacy (focus) and NA at the $p < .01$ level.

For mastery orientation, positive correlations were observed between all creativity and perceived creativity self efficacy scales and all mastery approach and mastery avoidance (except uncertainty) scales, at the $p < .05$ and $p < .01$ levels.

Positive correlations were observed between creativity self-efficacy (focus) and perceived self-efficacy (focus) and the performance approach, at the $p < .01$ level, but a negative correlation between creativity self-efficacy (uncertainty) and performance approach, at the $p < .05$ level. In addition, positive correlations were observed for creativity self-efficacy and perceived creativity self-efficacy (idea generation, focus) and performance avoidance, at the $p < .05$ and $p < .01$ levels.

Table 1
The Mean, Standard Deviation, Skewness And Kurtosis of Scales

Sub-scales	N	M	SD	Skewness	Kurtosis
Creativity self-efficacy (CSE)					
CSE_idea generation	414	11.13	1.92	-.25	.07
CSE_uncertainty	402	9.46	2.05	.84	-.21
CSE_focus	400	14.03	3.07	-.17	-.24
Perceived creativity self-efficacy (PCSE)					
PCES_idea generation	401	10.65	2.41	-.37	.50
PCES_uncertainty	391	9.61	2.43	-.09	-.05
PCES_focus	386	13.87	3.19	-.14	-.06
Positive emotions					
Positive affect, PA	397	34.77	6.79	-.51	.57
Negative affect, NA	366	20.30	6.81	.77	.72
SWLS	406	23.06	6.43	-.38	-.38
SHS	399	2.55	.55	-.69	.37
Goal orientation					
Mastery approach	405	16.04	3.73	-.69	-.04
Performance approach	404	12.69	4.78	-.23	-.62
Mastery avoidance	407	12.01	4.25	.06	-.59
Performance avoidance	404	14.36	4.25	-.62	-.09

Note: CSE = creativity self efficacy scale, PCES = perceived self efficacy scale from peer, PA = ten positive affect items from the positive affect and negative affect schedule, NA = ten negative items from the positive affect and negative affect schedule, SWLS = satisfaction with life scale, SHS = subjective happiness scale.

Significant Differences

Two-sample independent t-tests were computed for all scales according to gender. Girls ($M = 10.95$, $SD = 2.24$) scored significantly higher the perceived creativity self-efficacy- ideas generation subscale than did boys ($M = 10.38$, $SD = 2.55$): $t(397) = 2.39$, $p < .05$. They scored creativity self-efficacy - uncertainty sub-scale ($M = 9.75$, $SD = 1.99$) significantly higher than did their male counterpart ($M = 9.17$, $SD = 2.07$): $t(398) = 2.85$, $p < .01$. The results showed that boys ($M = 14.46$, $SD = 4.16$) scored significantly higher than did girls ($M = 14.24$, $SD = 4.34$) on the performance approach sub-scale: $t(400) = -4.24$, $p < .01$.

DISCUSSION

Moderate Creativity Self-efficacy

Our study aimed to explore the relationship between the concept of creativity self-efficacy (from one own and from the peer's perspective) and emotion as well as between the concept of creativity-self efficacy and achievement goal-orientation. Apart from adopting one subscale (idea generation) from Beghetto (2006), two additional

Table 2
The Correlations Between Subscales of the Creativity Self-efficacy and Perceived Creativity Self-efficacy Scales and Affect, as well as Goal Orientation

Scales	PA	NA	SWLS	SHS	Mastery approach	Performance approach	Mastery avoidance	Performance avoidance
CSE_idea generation	.42**	.09	.14**	.19**	.18**	.07	.17**	.11*
CSE_uncertainty	.16**	-.10*	.12*	.11*	.22**	-.12*	.06	.05
CSE_focus	.50**	-.07	.24**	.23**	.47**	.16**	.12*	.17**
PCES_idea generation	.38**	-.05	.28**	.35**	.21**	.05	.11*	.18**
PCES_uncertainty	.30**	-.07	.24**	.26**	.27**	-.00	.10*	.09
PCES_focus	.46**	-.15**	.35**	.33**	.42**	.19**	.13*	.14**

Note: CSE = creativity self efficacy scale, PCES = perceived self efficacy scale from peer, PA = ten positive affect items from the positive affect and negative affect schedule, NA = ten negative items from the positive affect and negative affect schedule, SWLS = satisfaction with life scale, SHS = subjective happiness scale. Pearson correlation, ** $p < .01$ (2-tailed); * $p < .05$ (2-tailed).

subscales (uncertainty and focus) of creativity self-efficacy were employed (Tan, 2007). The reliability of the 'idea generation.' subscale was consistent with that reported by Beghetto (2006) and thus confirmed that it was reliable in an international student context. The study established internal consistency for creativity and perceived self-efficacy sub-scales focusing on cognitive style and work style. Scales of positive emotions and achievement goal orientations in general showed internal consistency. The participants of the study rated their ability to generate ideas as 'moderately high', to focus as 'moderate' and to cope with uncertainty as 'low'.

The Relation of Positive Affect and Creativity Self-efficacy

As hypothesized, students' creativity self-efficacy and perceived creativity-efficacy were positively correlated with positive affect, satisfaction with life and subjective happiness. These findings were consistent with the claim that positive affect facilitates creativity (Amabile et al, 2005; Fredrickson, 1998; Isen et al, 1987) and affect is related to self-efficacy through its influence on an individual's levels of anxiety and subsequent performance (Bandura, 1989, 1993). The 'uncertainty' subscale of the creativity efficacy and "focus" subscale of the creativity perceived self-efficacy negatively correlated with negative affect. This suggests that students who had high self-efficacy in coping with uncertainty would less prone to negative moods and emotions.

The Relation of Achievement Goal Orientation and Creativity Self-efficacy

The findings support our hypothesis that students' mastery approach beliefs were positively correlated with their creativity self-efficacy in 'idea generation', "uncertainty" and "focus". Our findings were consistent with previous evidence (Beghetto, 2006) that a mastery-approach orientation was associated with positive outcomes that are related to creativity. The results suggest that students who perceived that they can

focus on learning and self-improvement (mastery approach) would think that they have a good imagination and are capable of generating novel and useful ideas. Similarly, the results suggest that these students would regard themselves as capable of coping with uncertainty, being patient and able to delay judgment, persistent in the face of difficulty, and having a strong will to master new knowledge, skills and techniques.

Elliot and McGregor (2001) hypothesized that the mastery avoidance orientation should result in outcomes that are more negative than the mastery approach orientation but more positive than the performance avoidance orientation. The current data provides partial support for this hypothesis in that the mastery avoidance orientation was positively correlated with two of the three creative self-efficacy scales whilst the mastery approach orientation was correlated with all three subscales of creativity self-efficacy and of perceived creativity self-efficacy.

Students' performance approach beliefs were correlated positively with the focus subscales of the creative self-efficacy and perceived-efficacy subscales, but negatively with the uncertainty subscale of creativity self-efficacy. This suggests that students motivated by performance approach goals believe they are capable of exerting strong focus on tasks and persistent in the face of difficulty. Students with a performance approach orientation likely believed that they were less capable of coping with uncertainty and lack patience or the ability to delay judgment. No correlation was found between a performance approach orientation and the 'ideas generation' subscale of the creative self-efficacy scale. This differs from the Beghetto (2006) study, which found a positive correlation between a performance approach orientation and creativity self-efficacy (idea generation).

Students' mastery-avoidance and performance-avoidance beliefs were correlated positively with the "idea generation" and "focus" subscales of the creativity self-efficacy and perceived creativity self-efficacy. Could it be that avoidance behavior is not always negatively correlated with adaptive outcomes or perhaps the peculiar nature of creativity is such that its links with student goal orientations are not easily predicted? The findings of Cury, Elliot, Da Fonseca and Moller (2006) provide an indication to date of the possible relations between a mastery avoidance goal orientation and creative self-efficacy. The study reported that the predictive patterns of goal orientations to intrinsic motivation, that is known to be a key element in creativity (Amabile, 1996), differed according to the valence aspect of competence.

Previous findings have associated a performance avoidance approach with negative outcomes (Beghetto, 2006), but differences were observed between different age groups and academic settings. For example, Elliot et al (1999), in a study of high ability college students found that a performance approach orientation was positively associated with self-reported effort and persistence whilst a performance avoidance orientation was not. In contrast, Wolters' (2004) study of Junior High School students discovered that neither performance approach-nor avoidance-orientations predicted effort and persistence. The findings of the current study add weight to the assertion of Wolters (2004) for the need to be cautious when generalizing the research on goal theory from one age group or academic setting to another.

CONCLUSION

The validity of the 2 x 2 framework of achievement goal-orientations will need to be researched further. In particular, the characteristics of the mastery avoidance orientation need to be confirmed (Régner, Escribe, & Dupeyrat, 2007). Further, some gender differences were observed in students' perceptions of creativity self-efficacy (idea generation and uncertainty, girls scored higher than boys) and performance approach (boys scored higher than girls). Girls seemed to be confident in cognitive process (idea generation) and style (uncertainty), which demanded individualized cognition and emotional regulation. Boys seemed to adopt the performance-approach goal orientation that demanded them to compare their engagement with those of their peers. Future studies shall find out if such difference will affect actual creative performance.

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Key words: Affect, Creativity self-efficacy, Goal orientation, High school, Students