Assessing Achievement Emotions and Connectedness

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Previous researches on achievement emotions of students have focused on different areas of the personality of the students, such as personal traits or values; however, learning and emotions are not only an individual phenomenon but shared with others. The present study tested whether connectedness is a predictor of positive or negative achievement emotions. Connectedness was measured as self-construal-independent and interdependent, school belongingness, loneliness of a person. There were 146 students ages 14 to 18 in the National Capital Region and Region IV in the Philippines who were requested to answer the Achievement Emotions Questionnaire (AEQ), Singelis Self Construal Scale, UCLA Loneliness Scale, and Psychological Sense of School Membership Scale. The results showed that school belongingness predicts positive emotions (enjoyment, hope, and pride). On the other hand, the study found loneliness as a predictor for negative emotions (anxiety, hopelessness, and boredom). Most of the factor correlations with positive emotions had a positive direction while negative direction for negative emotions.

Keywords: connectedness, independent construal, interdependent construal, school belongingness, loneliness, achievement emotions.

Emotions play an important role for human learning, development, achievement and health. Consequently, achievement-related emotions have a huge impact on learning and performance. Several researches in achievement emotions have considered achievement and the emotions related to it from an individual perspective (Howell & Buro, 2011; Huang, 2011; Soric, Penezic & Buric, 2013). However, learning usually occurs in a group and the emotions are not only a personal phenomenon but shared with others.

First, most of the learning experiences of a person are taking place in educational settings. Thus, individuals have acknowledged that many hours are spent in the classroom. Social relationships are created there and the attainment of important life goals depends on individual and collective agency in educational institutions. Because of their subjective

importance, educational settings are infused with intense with intense experiences that direct interactions, affect learning and performance and influence personal growth in both students and teachers (Pekrun, Frenzel, Goetz, & Perry, 2007).

A sense of connectedness to a group influences learning, thus has an impact on the learning-related emotions experienced by an individual. Pekrun, Frenzel, Goetz, and Perry (2007) stated that the impact of environments on individual achievement emotions is also largely mediated by control-value appraisals. By implication, environmental factors affecting students' appraisals should be important for their emotions.

Furthermore, Lutz (1988) argued that emotions can be viewed as cultural and interpersonal products of naming, justifying and persuading by people in relationship to each other. Emotional meaning is then a social rather than an individual achievement-an emergent product of social life.

Connectedness of a person may be defined as the feeling of belongingness or having a strong relationship with others. The individual's self-construal, the sense of school belongingness and the state of loneliness all measure the level of connectedness. These specific factors, we believe, are directly related to achievement emotions of a person.

Self-construal's–independent and interdependent should have a set of specific consequences for cognition, emotion and motivation. The experience of an emotion depends on the construal of the self. Emotional experiences should vary systematically with the construal of the self. With an interdependent construal, acts of fitting in and accommodating are often intrinsically rewarding, because they give rise to pleasant, other-focused emotions (e.g., feeling of connection) while diminishing unpleasant ones (e.g., shame) (Markus & Kitayama, 1991).

The sense of belongingness (connectedness) to a social relation may become burly that it makes better sense to think of the relationship as to functional unit of conscious reflection (Markus & Kitayama, 1997). A student might feel proud belonging to a certain school or might feel proud if the teachers in the school where he belong to are respecting him. On the other hand, Markus and Kitayama (1997) further stated that individuals seek to maintain their independence from other by attending to the self and by discovering and expressing their unique inner attributes. A certain student is much comfortable doing things on his own regardless of what other thinks of him. Moreover, some choose to act independently because it makes them feel so important. The description of connectedness is much more seen in the educational settings. Pekrun (1991), believes that educational settings are infused with intense emotional that direct interaction and significance of emotions experienced in educational settings (Zeidner, 1998).The process of learning as well as their achievement outcomes is expected to act back on student emotions (Pekrun, 1991).

The literature presented recognizes the relationship of a sense of connectedness to emotions. However, it is also necessary to explore whether the sense of connectedness will have the same relationship with achievement-related emotions. Achievement emotions are emotions tied directly to achievement activities or achievement outcomes. The differentiation of activity vs. outcome emotions pertains to the object focus of achievement emotions. In addition, as emotions more generally, achievement emotions can be grouped according to their valence - positive

vs. negative, and to the degree of activation implied- activating vs. deactivating (Pekrun et al., 2007). Achievement emotions are categorized into either positive or negative as resulted from doing a certain activity or results of the activity. It is also necessary to find out how connectedness is positively correlated with the two categories of achievement emotions: positive emotions (enjoyment, hope and pride) and negative emotions (anger, anxiety, shame, hopelessness and boredom). Thus a high sense of connectedness reflects positive emotions and low sense of connectedness.

Pekrun et al (2007) explained that achievement emotions are closely related with quality of activities that are evaluated through a set of standards. Achievement emotions can also be distinguished by the object of focus which can be activity emotions and outcome emotions (Pekrun, Goetz, Titz, & Perry, 2002). The differentiation of activity vs. outcome emotions pertains to the object focus of achievement emotions. In addition, as emotions more generally, achievement emotions can be grouped according to their valence - positive vs. negative, and to the degree of activation implied- activating vs. deactivating (Goetz, Pekrun, Hall, & Haag, 2006).

Emotions may have numerous of outcomes, and such can be characterized as predicted either positive or negative achievement emotions (Magno & Orillosa, 2012; Lichtefeld et al., in press). Motivation, flexibility learning strategies, and task related can result to a positive achievement emotion. On the other hand, poor student performance, slow processing of information and lack of motivation may sprout a negative achievement emotion.

There are two divergent construals of the self – an independent view and an interdependent view. Each of these divergent construals has a set of specific consequences for cognition, emotion and motivation (Markus & Kitayama, 1991). The theory of the self-construals affirms that some emotions arise from success or failure in achieving goals that relate to the construction of the self and the world view. This process emphatically occurs during the socialization, and the school plays an essential role in defining the self of the person (Markus et al, 2000).

According to Kitayama, Markus, and Kurokawa (2000), the interdependent self is made meaningful in reference to the relationships in which the self takes part. One of the people's cultural tasks is to belong to one group, adjust, and fit in the relationship. To become a member of a group provides the framework of reference while limiting internal desires is a mechanism that enables the self to maintain a harmonious relationship with the others. This conception of the self is more connected and less differentiated from others.

Markus and Kitayama (1991) believe that some emotions lead us to engage with others. Happiness, feelings of being respected, and positive emotions have a strong relationship with the group, while depression and unhappiness are related to disengagement.

School belongingness can be understood as a dimension of the engagement with others. Goodenow (1993) proposed that a sense of belonging at school reflects 'the extent to which students feel personally accepted, respected, included, and supported by others in the school social environment. This sense impacts the learning

process and its outcomes, and therefore, the emotions related to learning and achievement.

Loneliness and social connectedness can be understood as the two sides of a coin. Loneliness can be defined as the emotional response associated with isolation (Russell, 1996). In many individuals, the degree of loneliness influences the normal functioning and in students has been found to have an important impact in the learning outcomes (Ormrod, 2008). Social interaction with peers, the acceptance from classmates and teachers and a positive social environment are factors that favour the cognitive development of the children and adolescents. Loneliness, on the other hand, limits the learning experiences. For students, feeling outside the group can result in a broad range of negative emotions, as anxiety and depression, and of behavioural responses, as sleeplessness and academic failure.

The present study will explore the dimension of connectedness in the students and its relations with achievement emotions. Connectedness was measured from three different dimensions. First, looking into the self-construal dimensions of the students, the research observes whether the independent and interdependent views of the self-impact the emotions that the students feel during the learning process. Second, in consonance with the global sense of connectedness, we believe that the sense of belongingness to the school is correlated with positive achievement emotions. And third, the sense of isolation, measured through the feeling of loneliness, is correlated with negative achievement emotions.

Method

Participants

The participants in the study were 146 high school students, from ninth to twelfth grade, enrolled in public and private high schools in the NCR and Region IV-A in the Philippines. The ages of the participants range from 14-18 years old. Participation in the study was voluntary and anonymous. Students were informed about the purpose of the study, and had one hour and a half to complete the self-report questionnaires.

Instruments

Singelis Self-Construal Scale (SSCS). The Singelis (1994) Self-Construal Scale measures the cultural syndromes of independent and interdependent self-construals. The two subscales are measured by 15 items, using a Likert Scale that ranges from 1 (*strongly disagree*) to 7 (*strongly agree*), without any reverse-keyed items. Cronbach Alpha reliabilities range from the high .60's to the middle .70's.

Psychological Sense of School Membership scale (PSSM). The PSSM, created by Goodenow (1993), is a five-item instrument, with one reverse-keyed item, aimed to measure the sense of school membership among adolescents. It uses a five point Likert Scale, from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale has a good reliability (internal consistency of Cronbach's alpha = .88).

UCLA Loneliness Scale. This is instrument is a 20-item scale designed to measure one's subjective feelings of loneliness as well as feelings of social isolation (Russell et. al., 1978). Participants rate each item on a scale from 0 (*Never*) to 3 (*Often*). It was used the second version that contains no reverse-keyed item, recommended for no-college students (Russell, 1996). The measure of the scale was highly reliable, both in terms of internal consistency (coefficient a ranging from .89 to .94) and test-retest reliability over a 1-year period (r = .73). Convergent validity for the scale was indicated by significant correlations with other measures of loneliness. Construct validity was supported by significant relations with measures of the adequacy of the individual's interpersonal relationships, and by correlations between loneliness and measures of health and well-being.

Achievement Emotions Questionnaire (AEQ). The AEQ is a multidimensional self-report instrument designed to assess students' achievement emotions (Pekrun, 2000). It is composed by three subscales: class-related, learning-related, test-related emotions. For the present study, only the learning subscale was used. This subscale has 75 items that measure eight different emotions, namely enjoyment, hope, pride, anger, anxiety, shame, hopelessness, and boredom. Students rate their emotional experiences on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The reliabilities of the scales range from adequate to very good (alpha = .75 to .93, with alpha > .80 for 20 of the 24 scales). Most of these correlations are low to medium, thus indicating discriminant validity.

Procedure

A letter of permission was given to the school's principal to administer the questionnaires. Once approval was secured, the group proceeded with test administration. Before administration of the test, the purpose of the study was debriefed to the students and confidentiality was assured. The participants were requested to answer all the questionnaires (UCLA-LS, SS-CS, PSSM, and AEQ). The participants were reminded not to leave any items unanswered. The initial part of the questionnaire asked about their individual backgrounds such as age, year level, school, and gender.

Results

The means, standard deviations and cronbach alpha levels were obtained for achievement emotions and the three measures of connectedness – independent and interdependent self-construals, school belongingness and loneliness. The relationships among these variables were also obtained through correlation and simple regression.

Table 1
Descriptive Statistics for the Connectedness Measures and Achievement Emotions

	N	M	SD	Cronbach's α
Singelis Independent Self-Construal	146	5.11	0.62	0.64

Interdependent Self-Construal	146	5.24	0.63	0.66
PSSM: School Belongingness	146	3.71	0.69	0.72
UCLA Loneliness	146	1.16	0.53	0.89
AEQ				
Enjoyment	146	3.73	0.63	0.81
Hope	146	3.69	0.72	0.77
Pride	146	3.73	0.68	0.67
Anger	146	2.48	0.70	0.81
Anxiety	146	3.03	0.61	0.76
Shame	146	2.89	0.65	0.80
Hopelessness	146	2.65	0.70	0.83
Boredom	146	2.74	0.75	0.86

Note. Singelis = 7 point scale, PSSM = 5 point scale, UCLA = 4 point scale, AEQ = 5 point scale, AEQ = Achievement Emotions Questionnaire

Table 1 presents the descriptive statistics for the three measures of connectedness and achievement emotions. The mean scores obtained for both self-construals: independent (*M* = 5.11) and interdependent (*M* = 5.24) are relatively close to each other, while the mean scores for loneliness fall on the low level (*M* = 1.16). Positive achievement emotion mean scores are higher than those of negative achievement emotion mean scores. Standard deviation values show that scores' distribution is not very dispersed. Values of cronbach alpha indicate acceptable to excellent internal consistency.

Table 2
Correlation Matrix of Connectedness Measures and Achievement Emotions

Variable	IND	INT	SB	LO	JO	HO	PR	AN	AX	SH	HL	BO
Independent	---											
Interdependent	0.22**	---										
School Belongingness	0.33**	0.15	---									
Loneliness	-0.14	-0.11	-0.07	---								
Enjoyment	0.33**	0.32**	0.71**	-0.07	---							
Hope	0.29**	0.23**	0.55**	-0.12	0.70**	---						
Pride	0.32**	0.13	0.99**	-0.06	0.71**	0.54**	---					
Anger	-0.03	-0.12	-0.20*	0.14	-0.37**	-0.38**	-0.20*	---				
Anxiety	0.18*	0.17	0.21*	0.16	0.22**	0.03	0.21*	0.57**	---			
Shame	0.17*	0.15	0.15	0.17	0.16	-0.02	0.16	0.48**	0.78**	---		
Hopelessness	0.04	0.06	-0.05	0.21	-0.10	-0.21*	-0.04	0.71**	0.75**	0.74**	---	
Boredom	0.06	-0.03	-006	0.16	-0.23**	-0.31**	-0.05	0.78**	0.60**	0.50**	0.65**	---

*p < .05.   **p < .01.

Table 2 presents the correlation matrix of the three connected measures and achievement emotions. When the measures of the connectedness and achievement

emotions were correlated, independent construal is significantly related to positive achievement emotions: enjoyment ($R = .33$), hope ($R = .29$) and pride ($R = .32$). It is also significantly related to anxiety ($R = .18$) and to shame ($R = .17$).

Table 3
Summary of Simple Regression Analyses for Variables Predicting Positive Achievement Emotions (N = 146)

	Enjoyment			Hope			Pride		
Variable	*B*	*SE B*	*B*	*B*	*SE B*	*B*	*B*	*SE B*	*B*
Independent Self-Construal	0.07	0.06	.07	0.10	0.09	.09	-0.01	0.02	-0.01
Dependent Self-Construal	0.21	0.06	.21*	0.15	0.08	.13	-0.01	0.02	0.01
School Belongingness	0.59	0.05	.65**	0.51	0.08	.50**	0.98	0.02	0.99**
Loneliness	0.01	0.07	.01	-0.08	0.09	-.06	0.02	0.02	0.01
R^2			.54			.32			.97
F			43.47**			17.74*			1193.5**

*$p < .05$.   **$p < .01$.

Table 2 shows that interdependent construal is significantly related to enjoyment ($R = .32$) and to hope ($R = .23$) but not to negative achievement emotions. School Belongingness is positively correlated with the three positive emotions: enjoyment, hope and pride ($R = .71$, $R = .55$, $R = .99$) and negatively correlated with anger ($R = -.20$).

Table 2 shows that positive and negative emotions subscales of the AEQ were significantly related to each other. The three positive emotions (enjoyment, hope and pride) significantly increase with each other. In the same way the negative emotions (anger, anxiety, shame, hopelessness and boredom) also significantly increases with each other.

Table 4
Summary of Simple Regression Analyses for Variables Predicting Negative Achievement Emotions (N = 146)

	Anger			Anxiety			Shame			Hopelessness			Boredom		
Variable	B	SE B	B	B	SE B	B	B	SE B	B	B	SE B	ß	B	SE B	B
Independent Self-Construal	0.08	0.10	.06	0.13	0.08	.13	0.14	0.09	.14	0.09	0.10	.08	0.14	0.11	.11
Dependent Self-Construal	-0.10	0.09	-.09	0.13	0.08	.13	0.14	0.09	.13	0.09	0.09	.08	-0.03	0.10	-.02
School Belongingnes s	-0.20	0.09	-.20*	0.14	0.07	.16	0.10	0.08	.10	-0.07	0.09	-.07	-0.09	0.10	-.08
Loneliness	0.17	0.11	.13	0.23	0.09	.20*	0.25	0.10	.20*	0.30	0.11	.23**	0.24	0.12	.17*

R^2	.04	.09	.07	.03	.01
F	2.52	4.47	3.62	2.23	1.43

*p < .05.   **p < .01.

Multiple regression analysis was used to test if the measures of connectedness significantly predicted participants' achievement emotions. Table 3 shows the regression analysis for connectedness and the three positive emotions (enjoyment, hope and pride). The results of the regression indicated that 4 predictors explained 54% of the variance for enjoyment (R^2 =.54, $F_{(4,146)}$=43.47, $p < .01$), hope 32% (R^2 = .32, $F_{(4, 146)}$ = 17.74, $p < .05$) and pride 97% (R^2 =.97, $F_{(4, 146)}$=1193.5, $p < .01$). It was found that school belongingness significantly predicted enjoyment ($B = .65$, $p < .01$), as well as hope ($B = .50$, $p < .01$) and pride ($B =.99$, $p < .01$).

Table 4 presents the regression analysis for connectedness and the five negative emotions (anger, anxiety, shame, hopelessness and boredom). The results of the regression shows that loneliness significantly predicted anxiety ($B = .20$, $p < .05$), as well as shame ($B =.20$, $p < .01$), hopelessness ($B =.23$, $p < .05$) and boredom ($B = .17$, $p < .01$).

The results also indicated that school belongingness significantly predicted anger ($B = -.20$, $p < .01$). School belongingness has significant negative weight, implying that students with higher scores in school belongingness are expected to obtain lower scores in anger.

Discussion

The study is primarily proposed to test whether connectedness (independent and interdependent self-construal, school belongingness and loneliness) has the relationship with positive and negative achievement emotions. Second, it seek to determine whether individual's self – construal influences achievement emotions and lastly, if school belongingness is related to positive achievement emotions likewise whether loneliness is connected to negative achievement emotions. The findings of the multiple regression showed similar patterns of relationship between connectedness and achievement emotions. Obtained mean score of both self – construal are relatively close to each other. These findings are consistent with the view of Hallowell (1995), that self – construal view that people everywhere likely to develop an understanding of themselves as physically distinct and separable from others. Moreover, Markus and Kitayama (1997), believe that in achieving independence, an individual requires construating oneself whose behaviour is organized and made meaningful primarily by reference to one's own internal repertoire of thoughts, feelings and actions yet individuals also are seeking independence from others by attending to the self and by discovering and expressing their unique inner attributes.

The result shows that achievement emotions and connectedness are found significantly correlated to each other. The present study contributes to theorizing on achievement emotions in three aspects: (1) independency might have an impact of having a feeling of anxiety and shame yet it can achieve positive emotions at the

same time, and being interdependent is prone in achieving enjoyment and hope most of the time, (2) positive emotions such as enjoyment, hope, and pride are highly express or clearly seen, though there are anger included, in school belongingness, and (3) negative emotions such as anger, anxiety, shame, hopelessness and boredom are consistently seen in loneliness.

Before discussing the results, there are several limitations in the study. First, there is a strong criticism about the lack of validity of the self-construals scales (Levine et al, 2003). According to the authors, the evidence for the predicted cultural differences is weak, inconsistent, or nonexistent. This critic includes the instrument of Singelis used in the present research. The research states that self-construal scales might often reflect situational priming rather than stable level cultural tendencies. However, we have opted for including other two instruments that measure the connectedness of the individual with the environment, in this case the school, or the lack of it. Even in the case of reflecting the current situation of the students in relation to the group, the self-construal scales fulfill the needs of the present study that focuses on the students' current state. Second, this study is only directed to test the relationship between the sense of connectedness to others and achievement emotions; therefore, no conclusions can be extrapolated to the practice of the education process in which learning occurs.

The results of the study also shows that dependent self – construal significantly predicts enjoyment. Students are likely to feel good when cooperating with others and others give important to the relationships with their classmates rather than their own that makes them feel more accomplished. Meanwhile, school belongingness significantly predicts enjoyment, hope and pride. Most of the students feel important and proud knowing they are belongs to their school while others are having hope if there is at least one teacher or adult in the school where they can confide or talk about their problems. On the other hand, school belongingness predicts negative emotion specifically anger. Students who feel that their classmates do not respect them or treated them the way they are expected to be treated bring out annoyance or irritation to their classmates. Likewise, belonging to a certain group in school who did not appreciate their uniqueness or certain talent could bring resentment to others and to themselves. In addition if their teacher is the one who always bring punishment instead of understanding their situation could also bring a negative impact on their emotions. Lastly, loneliness is significantly associated with shame, anxiety, hopelessness and boredom. Student who is withdrawn or isolated with other students could develop shame in reaching out or communicating with other students. Moreover, a student who lack companion often times feels anxious because he feels that other students are shutting him out or excluded him. Likewise, student who feels completely alone is always having the feeling that nobody will really understand him. In addition, student who lack companionship are having the consistent feeling of being unhappy and bored doing things alone all by himself.

In the present study, not only did it explain construct validity of the three measures of connectedness but also both the conceptual and statistical evidences are obtainable.

Lastly, the current study opens for studies to investigate further hypothesis on positive and negative emotions with connectedness. Others areas can be examine to check the consistency of relations such as when connectedness and achievement emotions are treated as Socio-economic status, race, family background and other dispositional context.

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