

Achievement Emotions in Secondary Education: Emotional Profiles and Gender Differences

Wan Nursyahida Wan Abd Malek*, Shahlan Surat

Faculty of Education, Universiti Kebangsaan Malaysia, 43600, Bangi, Selangor, Malaysia

*Corresponding Author Email: p161815@siswa.ukm.edu.my

DOI Link: <http://dx.doi.org/10.6007/IJARPED/v15-i4/29140>

Published Online: 24 October 2026

Abstract

Students experience a range of emotions while participating in classroom learning activities. These emotions influence how students engage with learning tasks and shape their overall learning experiences. Guided by the Control-Value Theory of Achievement Emotions, this study examined the emotional profiles of Malaysian secondary school students and explored gender differences in emotions experienced during classroom learning. The participants comprised 63 secondary school students aged 16 years, including 32 males and 31 females. Data were collected using the Achievement Emotions Questionnaire–Short Version (AEQ-S) which measures enjoyment, hope, pride, anger, anxiety, shame, hopelessness and boredom. Descriptive statistics, paired samples t-tests and independent samples t-tests were used to analyse the data. The findings showed that pride ($M = 3.94$, $SD = 0.64$), hope ($M = 3.69$, $SD = 0.52$) and enjoyment ($M = 3.58$, $SD = 0.71$) were the most frequently reported emotions during classroom learning. In contrast, hopelessness ($M = 2.07$, $SD = 0.79$), anger ($M = 2.13$, $SD = 0.62$) and shame ($M = 2.13$, $SD = 0.93$) recorded lower mean scores. Positive emotions scores were significantly higher than negative emotions scores, $t(62) = 12.69$, $p < .001$, $d = 1.60$. Female students also reported significantly higher levels of positive emotions than male students, whereas no significant gender differences were observed for negative emotions. The findings suggest that students generally experience classroom learning in a positive emotional context. Implications for classroom practice and future research are discussed.

Keywords: Achievement Emotions, Classroom Learning, Secondary School Students, Gender Differences, Control-Value Theory (Cvt)

Introduction

Learning is not solely a cognitive process. Students enter classrooms with expectations, beliefs and emotional responses that influence their engagement with learning activities. Previous research has highlighted the role of emotions in students' engagement and learning (Pekrun et al., 2002; Linnenbrink-Garcia & Pekrun, 2011). Attribution theory also explains how students' beliefs about the causes of success and failure are associated with emotional responses and motivation (Weiner, 2010). Classroom learning therefore provides an important context for examining students' emotional experiences which occur alongside their participation in academic activities and interactions with others (Alzaanin, 2025; Sarac et al., 2025).

Among the emotions experienced in educational settings, achievement emotions have received considerable scholarly attention. Achievement emotions refer to emotions arising during achievement-related activities or in relation to achievement outcomes (Pekrun, 2006). These emotions include enjoyment, hope, pride, anger, anxiety, shame, hopelessness and boredom. Such emotions are relevant to students' learning experiences because they are associated with different patterns of engagement, motivation and academic functioning. Understanding the range of emotions students experience can therefore provide insight into their emotional experiences in classroom settings.

The Control-Value Theory of Achievement Emotions (CVT) provides a theoretical framework for understanding achievement emotions. According to the theory, achievement emotions are associated with students' appraisals of control over achievement activities and outcomes and the subjective value they attach to them (Pekrun, 2006). Previous research has examined achievement emotions in various educational contexts including mathematics, science, foreign language learning, and other academic settings (Bieleke et al., 2023; Fierro-Suero et al., 2023; Macías León et al., 2022; Méndez-López, 2022; Wang et al., 2024; Zhao et al., 2025).

These studies provide a basis for examining the range of emotions experienced by students across different learning contexts. Although these studies provide valuable insights into students' emotional experiences across different learning contexts, their findings do not necessarily establish whether similar emotional patterns occur among Malaysian secondary school students across classroom learning more broadly. However, the present study did not directly measure perceived control or subjective task value. CVT is therefore used to inform the interpretation of the observed emotional profiles rather than to test relationships between students' appraisals and their achievement emotions. Accordingly, the findings are interpreted descriptively and are not used to establish causal relationships. In addition, examining individual emotions alongside overall positive and negative emotion scores, as well as gender differences, may provide a more comprehensive description of students' emotional profiles. To address this gap, the present study examines eight achievement emotions among 63 Malaysian secondary school students, compares their positive and negative emotion scores and investigates gender differences in these scores. By bringing these analyses together within one study, the research provides context-specific descriptive evidence on achievement emotions among Malaysian secondary school students. CVT is used to guide the interpretation of these findings, rather than to test relationships involving control and value appraisals which were not directly measured.

Research Objectives

1. To identify the emotional profiles of Malaysian secondary school students during classroom learning.
2. To compare positive and negative emotions experienced during classroom learning.
3. To examine gender differences in achievement emotions during classroom learning.

Methodology

This study employed a quantitative survey design to examine achievement emotions experienced by secondary school students during classroom learning. The design was selected because it allows students' emotional experiences to be measured systematically and facilitates comparisons across different emotional dimensions and demographic groups. The

study involved 63 secondary school students aged 16 years. Of the total participants, 32 (50.8%) were male and 31 (49.2%) were female. The relatively balanced distribution of male and female students enabled meaningful comparisons of achievement emotions across gender. Students' achievement emotions were measured using the Achievement Emotions Questionnaire-Short Version (AEQ-S). The instrument assesses eight achievement emotions experienced during learning activities, namely enjoyment, hope, pride, anger, anxiety, shame, hopelessness and boredom. Each dimension reflects students' emotional responses while engaging in classroom learning rather than their general attitudes towards school or academic achievement.

For the purpose of analysis, enjoyment, hope and pride were grouped as positive emotions, whereas anger, anxiety, shame, hopelessness and boredom were grouped as negative emotions. Descriptive statistics were used to examine students' emotional profiles during classroom learning. Mean scores, standard deviations and skewness values were calculated for each emotional dimension. A paired samples t-test was conducted to compare positive and negative emotions while independent samples t-tests were used to examine gender differences. All statistical analyses were performed using BM SPSS Statistics, Version 29.0.

Findings

Emotional Profiles During Classroom Learning

Table 1 presents the descriptive statistics for the eight achievement emotions measured in this study.

Table 1

Descriptive Statistics of Students' Achievement Emotions

Emotion Dimension	Mean (M)	SD	Skewness
Enjoyment	3.58	0.71	0.07
Hope	3.69	0.52	0.05
Pride	3.94	0.64	-0.34
Anger	2.13	0.62	0.11
Anxiety	2.37	0.74	0.20
Shame	2.13	0.93	1.01
Hopelessness	2.07	0.79	0.42
Boredom	2.50	0.84	-0.10

Among the emotions examined, pride recorded the highest mean score ($M = 3.94$, $SD = 0.64$), followed by hope ($M = 3.69$, $SD = 0.52$) and enjoyment ($M = 3.58$, $SD = 0.71$). These findings indicate that positive emotions were commonly experienced by students during classroom learning activities. In contrast, hopelessness recorded the lowest mean score ($M = 2.07$, $SD = 0.79$) followed by anger ($M = 2.13$, $SD = 0.62$) and shame ($M = 2.13$, $SD = 0.93$). Although negative emotions were present, their mean scores were generally lower than those of positive emotions. The skewness values ranged from -0.34 to 1.01 indicating that the distributions of all emotional dimensions were within acceptable limits for further statistical analysis.

Comparison of Positive and Negative Emotions

To obtain a broader understanding of students' emotional experiences, the eight emotional dimensions were grouped into positive and negative emotions. Positive emotions recorded a mean score of 3.74 ($SD = 0.49$) whereas negative emotions recorded a mean score of 2.24 (SD

= 0.59). A paired samples t-test indicated a statistically significant difference between positive and negative emotions, $t(62) = 12.69$, $p < .001$. The mean difference was 1.50. In addition, the effect size was large (Cohen's $d = 1.60$), indicating a substantial difference between the two emotional constructs. These findings suggest that students were considerably more likely to experience positive emotions than negative emotions while participating in classroom learning activities.

Table 2

Descriptive Statistics of Positive and Negative Achievement Emotions Among Students

Construct	Mean (M)	SD
Positive Emotions	3.74	0.49
Negative Emotions	2.24	0.59

Gender Differences in Achievement Emotions

Table 3 presents the comparison of achievement emotions according to gender. For positive emotions, female students reported a significantly higher mean score ($M = 3.94$, $SD = 0.55$) than male students ($M = 3.53$, $SD = 0.31$). An independent samples t-test indicated that the difference was statistically significant, $t(46.74) = -3.62$, $p < .001$. The effect size was large (Cohen's $d = 0.92$), suggesting a substantial gender difference in positive achievement emotions. For negative emotions, male students reported a slightly higher mean score ($M = 2.33$, $SD = 0.44$) than female students ($M = 2.15$, $SD = 0.70$). However, the difference was not statistically significant, $t(50.20) = 1.21$, $p = .230$. The effect size was small (Cohen's $d = 0.31$), indicating a relatively minor difference between male and female students in negative achievement emotions. Overall, the findings suggest that female students experienced significantly higher levels of positive achievement emotions than male students whereas negative achievement emotions were relatively similar across gender.

Table 3

Comparison of Achievement Emotions by Gender

Emotion Category	Gender	Mean (M)	SD	t	df	p	Cohen's d
Positive Emotions	Male	3.53	0.31	-3.62	46.74	< .001	0.92
	Female	3.94	0.55				
Negative Emotions	Male	2.33	0.44	1.21	50.20	.230	0.31
	Female	2.15	0.70				

Note: Independent samples t-test results are reported using the "equal variances not assumed" statistics because Levene's test was significant for both positive and negative emotions.

Discussion

The present study examined the emotions experienced by Malaysian secondary school students during classroom learning. Three key findings emerged from the analysis. First, pride emerged as the most prominent emotion followed by hope and enjoyment. This finding suggests that students generally experienced classroom learning in a positive emotional context characterised by feelings of accomplishment, optimism and engagement. Similar patterns have been reported in previous studies. Among Mexican secondary school students learning English, pride was identified as the most frequently experienced achievement emotion, exceeding enjoyment and all negative emotions measured using the Achievement

Emotions Questionnaire (Méndez-López, 2022). Likewise, in science education, pride recorded the highest mean score and exceeded both positive and negative achievement emotions (Macías León et al., 2022). The recurring prominence of pride across different educational settings suggests that feelings of accomplishment and success are central components of students' emotional experiences during learning. From the perspective of Control–Value Theory (CVT), pride is conceptualised as a positive, retrospective achievement emotion that arises when students attribute their success to themselves, including their own actions or attributes (Pekrun, 2006). Empirical studies have also reported associations between control and value appraisals and achievement emotions. Raccanello et al. (2026) found that perceived control and task value were positively associated with positive emotions and negatively associated with negative emotions among university students. Similarly, Zhao et al. (2025) reported significant correlations between control and value appraisals and eight achievement emotions among Chinese secondary school students learning English as a foreign language.

The relatively high levels of hope and enjoyment observed in the present study further support this interpretation suggesting that students generally approached classroom learning with confidence and positive expectations. In contrast, hopelessness, anger and shame recorded comparatively low scores indicating that negative emotional responses were present but did not dominate students' learning experiences.

Second, positive emotions were significantly higher than negative emotions. The large effect size observed in the present study suggests that the difference was not only statistically significant but also practically meaningful. This finding indicates that students were considerably more likely to experience positive achievement emotions and negative achievement emotions responses such as enjoyment, hope and pride than maladaptive emotions, including hopelessness, anger and shame during classroom learning. Similar trends have been reported in previous studies where positive achievement emotions consistently exceeded negative emotions across different educational contexts (Fierro-Suero et al., 2023; Méndez-López, 2022). The predominance of positive emotions is important because achievement emotions are closely associated with students' engagement and learning outcomes. Students who experience greater enjoyment and pride tend to demonstrate stronger participation, persistence and academic achievement whereas negative emotions are more frequently associated with less adaptive learning experiences (Fierro-Suero et al., 2023). Within the framework of CVT, the higher prevalence of positive emotions may indicate that students generally perceived classroom learning as both manageable and meaningful thereby fostering favourable emotional experiences. Collectively, these findings suggest that the classroom environment experienced by the participants was characterised more by positive emotional engagement than by emotional distress.

Third, female students reported significantly higher levels of positive achievement emotions than male students whereas no significant gender differences were observed for negative emotions. The magnitude of the difference was substantial, as indicated by the large effect size. This finding is consistent with previous studies reporting that female students tend to experience higher levels of positive activating emotions, particularly enjoyment, hope and pride than male students (Méndez-López, 2022; Wang et al., 2024). Collectively, these findings suggest that female students may be more emotionally responsive to positive

academic experiences and more likely to interpret academic success as evidence of competence and personal accomplishment. From the perspective of CVT, positive achievement emotions are more likely to emerge when students perceive themselves as capable of succeeding and attach value to learning activities and outcomes (Pekrun, 2006). Although control and value appraisals were not measured in this study, CVT provides a useful perspective for interpreting the higher positive emotion scores reported by female students. Previous studies have found associations between control and value appraisals and achievement emotions such as enjoyment, hope, and pride (Raccanello et al., 2026; Zhao et al., 2025). However, the present study cannot determine whether these appraisals contributed to the gender differences observed.

Overall, the findings suggest that positive emotions were more prevalent than negative emotions among the students in this study. Given the importance of emotions in learning, creating supportive and engaging classroom experiences may help foster positive emotional experiences among secondary school students.

Conclusion

This study examined achievement emotions experienced during classroom learning among Malaysian secondary school students. The findings revealed that pride, hope and enjoyment were the most frequently experienced emotions, whereas hopelessness, anger and shame were reported less frequently. Positive emotions were significantly higher than negative emotions indicating that students generally experienced classroom learning in a positive emotional context. The study also found that female students reported higher levels of positive emotions than male students although no significant gender differences were observed for negative emotions. These findings highlight the importance of understanding students' emotional experiences during classroom learning and suggest that positive emotional engagement should be considered an important aspect of effective teaching and learning.

Limitations and Future Research

Several limitations should be acknowledged. The study involved a relatively small sample from a single secondary school limiting the generalisability of the findings. Furthermore, the study relied on self-report measures which may be influenced by participants' perceptions and response tendencies. Future research could involve larger samples from different educational settings and examine how achievement emotions relate to other classroom variables such as engagement, motivation, learning strategies and academic performance.

References

- Alzaanin, E. (2025). Achievement emotions: Their relationship with academic performance and learning styles in EFL learners. *Australian Journal of Applied Linguistics*, 8(1), 102451. <https://doi.org/10.29140/ajal.v8n1.102451>
- Bieleke, M., Goetz, T., Yanagida, T., Botes, E., Frenzel, A. C., & Pekrun, R. (2023). Measuring emotions in mathematics: The Achievement Emotions Questionnaire–Mathematics (AEQ-M). *ZDM–Mathematics Education*, 55(2), 269–284. <https://doi.org/10.1007/s11858-022-01425-8>
- Fierro-Suero, S., Almagro, B. J., Sáenz-López, P., & Ibáñez, S. J. (2023). *Achievement emotions, intention to be physically active, and academic achievement in physical education*. *European Physical Education Review*, 29(4), 1008–1024. <https://doi.org/10.1177/1356336X231170432>
- Linnenbrink-Garcia, L., & Pekrun, R. (2011). Students' emotions and academic engagement: Introduction to the special issue. *Contemporary Educational Psychology*, 36(1), 1–3. <https://doi.org/10.1016/j.cedpsych.2010.11.004>
- Macías León, K., de las Heras Pérez, M. Á., Romero Fernández, R., González Castanedo, Y. & Sáenz-López, P. (2022). Validation of the Achievement Emotions Questionnaire for Experimental Science Education (AEQ-S). *Behavioral Sciences*, 12(12), 480. <https://doi.org/10.3390/bs12120480>
- Méndez-López, M. G. (2022). Emotions experienced by secondary school students in English classes in Mexico. *Colombian Applied Linguistics Journal*, 24(2), 219–233.
- Pekrun, R. (2006). The control-value theory of achievement emotions: Assumptions, corollaries, and implications for educational research and practice. *Educational Psychology Review*, 18(4), 315–341. <https://doi.org/10.1007/s10648-006-9029-9>
- Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002). Positive emotions in education. In E. Frydenberg (Ed.), *Beyond coping: Meeting goals, visions, and challenges* (pp. 149–173). Oxford University Press.
- Raccanello, D., Vicentini, G., & Putwain, D. W. (2026). How perceived control and task value relate to achievement emotions in academic study settings. *Behavioral Sciences*, 16(5), 791. <https://doi.org/10.3390/bs16050791>
- Sarac, E., Bektas, F., At, E., Karadag, E. & Ciftci, S. K. (2025). Achievement emotion in warvictim children: A study on Syrian primary and secondary school students in Turkey. *Cambridge Prisms: Global Mental Health* 12: e129. <https://doi.org/10.1017/gmh.2025.10089>
- Wang, K., Wu, Y., & Kang, X. (2024). Investigating latent mean differences in achievement emotions among Chinese secondary EFL learners: A gender and grade perspective. *PLOS ONE*, 19(5), e0303965. <https://doi.org/10.1371/journal.pone.0303965>
- Weiner, B. (2010). The development of an attribution-based theory of motivation: A history of ideas. *Educational Psychologist*, 45, 28–36. <https://doi.org/10.1080/00461520903433596>
- Zhao, Y., Curle, S., & Yang, L. (2025). Expanding the emotional spectrum: Validating the Achievement Emotions Questionnaire for multiple emotions in Chinese EFL learning. *Asian-Pacific Journal of Second and Foreign Language Education*, 10, Article 17. <https://doi.org/10.1186/s40862-025-00321-4>