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How University Students Cope with Class-related Boredom: A Profile Analysis

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Abstract

Studies have demonstrated that boredom hinders students' academic performance. Scholars and educators have started exploring how students cope with boredom. Recent studies have revealed that students' coping styles are influenced by culture; however, research conducted using culturally sensitive measurement tools remains extremely scarce. Therefore, this study aimed to adopt a person-centered data analysis approach by examining university students' strategies for coping with class-related boredom using a culturally sensitive scale. In the latent profile analysis, 1013 Turkish students were classified into four groups who used different combination of coping strategies: BEAV-AS oriented evaders, BEAV-SS oriented evaders, Reappraisers and BEAV-AS oriented mixed copers. While the Reappraisers align with previous findings, the other three profiles represent novel contributions. In earlier studies, the profile characterized by the intensive use of behavioral avoidance (BEAV) and cognitive avoidance (COAV) strategies was identified as a single profile, referred to as evaders. However, in this study, distinct profiles emerged based on the type of stimulus (simple vs. activating): BEAV-AS-oriented evaders and BEAV-SS-oriented evaders. The BEAV-AS-oriented mixed copers profile consists of students who frequently employ all coping strategies, including cognitive approaches. Additionally, to obtain a more profound understanding of the emerging boredom coping profiles, these profiles were examined for prospective predictors (e.g., boredom proneness, age, gender) and distal outcomes (e.g., GPA, class-related boredom).

Keywords: boredom coping strategies, boredom proneness, academic achievement, person-centered data analysis approach, three-step method

1. Introduction

Studies indicate that class-related boredom negative effects on students' academic achievement (Pekrun et al., 2014; Putwain et al., 2018; Tze et al., 2016). According to Pekrun's (2006) theoretical conceptualization of emotions, boredom is related to perceived control and value. The control-value theory suggests that boredom arises "when perceived control over achievement activities and the perceived value of these activities are too low" (Pekrun et al., 2014). Particularly in the classroom environment, students often feel they have

less control because teachers primarily manage the pace of instruction, the depth of inquiries, and the range of academic activities provided. Research by Mann and Robinson (2009) found that 58% of university students in England reported finding more than half of their lectures boring. Other studies revealed similar patterns, with around 40% of undergraduate students in Canada and 50% in Türkiye experiencing boredom at most or all a class time (Daniels et al., 2015; Kökçam & Satan, 2022). A boring lesson can have lasting effects beyond a single class period, potentially leading to reduced attendance in the following weeks. This decreased attendance can, in turn, negatively impact the student's overall success by the end of the semester or academic year (Mann & Robinson, 2009). Given the growing body of evidence, researchers and educators are starting to explore how students cope with boredom (But et al., 2023; Daniels et al., 2015; Nett et al., 2010; Tze et al., 2013).

Nett et al. (2010) identified four distinct boredom coping strategies based on a person's orientation (approach or avoidance) and response type (cognitive or behavioral): cognitive approach, behavioral approach, cognitive avoidance, and behavioral avoidance. A student uses cognitive approach strategies when managing boredom by re-evaluating and reminding themselves of the significance of the boring situation. Behavioral approach involves taking action to modify the situation to make it less boring. In cognitive avoidance, a student attempts to shift their focus away from the boring task, such as through daydreaming. Finally, behavioral avoidance entails engaging in activities unrelated to the boring task.

Nett et al. (2010) and Daniels et al.'s (2015) study, they identified three profiles for boredom coping from their German and Canadian sample: Reappraisers, Criticizers, and Evaders. Each of these profiles favored distinct combinations of coping strategies and experienced different levels of boredom. Reappraisers primarily used cognitive approach strategies to manage boredom in class, showing less preference for other methods. Criticizers relied mainly on behavioral approach strategies, while Evaders predominantly favored avoidance strategies, particularly behavioral ones. Nett et al. (2010) observed that academic performance was highest among Reappraisers, lowest among Evaders, and that Reappraisers experienced boredom less frequently than others.

But et al. (2023), in their research on the coping profiles of Canadian and international university students, identified distinct patterns among the groups. Canadian students were categorized as Reappraisers, Criticizers, and Thinkers, while international students were predominantly Persistent Students and Behaviourists. Thinkers primarily employed cognitive avoidance strategies, while Persistent Students shared a broadly similar approach but distinguished Thinkers by specifically refraining from behavioral avoidance strategies. In contrast to Thinkers, Behaviourists preferred behavioral strategies, especially avoidance-oriented ones. Unlike Evaders, Behaviourists eschewed cognitive avoidance strategies and, akin to Criticizers, they adopted behavioral approach strategies. Through this study, Butt et al. highlight the diversity in coping strategies despite boredom being a universal emotion. This variability may arise from micro-level factors like individual differences and macro-level influences such as cultural context.

Kökçam and Satan (2022) developed a scale to measure the boredom coping strategies of university students in Türkiye, which closely aligns with the four-dimensional framework used by Nett et al. (2010). While the cognitive type of approach and avoidance responses were parallel to the previous scale, the behavioral dimension showed a different pattern. The items developed for the behavioral approach dimension did not cluster to form a single construct, whereas the behavioral avoidance dimension split into two distinct factors. Upon examining these factors, the authors found that the type of stimuli that trigger behaviors differed (see Fromm, 1973): one factor was associated with simple stimuli, leading to

automatic, passive and immediate responses (e.g., browsing shopping and social media sites), while the other was linked to activating stimuli, prompting a person to think about the stimulus and associate himself with it, resulting in active and productive responses (e.g., reading books, solving puzzles).

It has been reported that emotional-focused coping strategies are more commonly used than problem-focused strategies in Eastern cultures, and that individuals in these cultures tend to be more pessimistic and frequently rely on avoidant coping strategies (But et al., 2023; O'Connor & Shimizu, 2002; Tze et al., 2013). Behavioral approach strategies, which generally involve communication with the teacher to alter the flow of the lesson, are not preferred by students because they are perceived as disrespectful to the teacher/lecturer as an authority figure. This study aims to explore coping profiles using the culturally appropriate coping with boredom in class scale (Kökçam & Satan, 2022). We also aimed to develop a better understanding of the profiles by examining key determinants such as boredom proneness, age, gender, and their distal outcomes, such as GPA.

2 Method

2.1 Participants

This study was approved by the university's ethics board and a total of 1013 university students participated in this study. Of the participants 716 were females, 290 were males, and 7 did not disclose their gender. The mean age of the students was 21.14 years (SD= 1.77). The participants' ages ranged from 18 to 28, with 92% falling between 18 and 24 years old. Participants are enrolled in programs across various fields, including educational sciences, health, social sciences, philology, engineering, theology, and fine arts. Participation was voluntary and informed consent was obtained from all participants prior to the study.

2.2 Measures

Coping Strategies with Boredom in Class Scale (CBCS)

The scale developed by Kökçam and Satan (2022) comprises 25 items rated on a 5-point Likert scale ranging from 1 (never) to 5 (always). It evaluates four coping strategies: cognitive approach (CAP, 10 items, α=.88), cognitive avoidance (CAV, 6 items, α=.81), behavioral avoidance based on simple stimuli (BAV-SS, 5 items, α=81), and behavioral avoidance based on activating stimuli (BAV-AS, 4 items, α=.70). A sample item for each strategy is as follows: 'When I feel bored in class, I try to focus on the lecture, thinking that I will fail the exam' (CAP); 'When I feel bored in class, I think about my problems' (CAV); 'When I feel bored in class, I hang out on social networking sites' (BAV-SS); and 'When I feel bored in class, I read a book' (BAV-AS)."

Boredom Proneness Scale Short-Form (BPS-SF)

The Boredom Proneness Scale (BPS), originally developed as a 28-item self-report measure by Farmer and Sundberg (1986), was revised and condensed into an 8-item version by Struk et al. (2017). The scale is rated on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Güner et al. (2021) translated and validated BPS-SF in Turkish. The adapted scale demonstrated satisfactory validity and reliability (α=.91).

Academic achievement

Each participant's GPA at the time of taking part in the study was reported on a 0 to 4 scale.

Class-related boredom

The single item used by Weybright et al. (2020) to measure general boredom was adapted to assess class-related boredom ("I am often bored in class."). Students rated their agreement on a 5-point scale from disagree (1) to agree (5).

2.3 Data Analytic Strategy

This study utilized a person-centered analytical approach to identify and group students who exhibited similar coping strategies. The analyses were conducted using Mplus software (Muthén & Muthén, 1998–2017). The selection of the number of profiles was guided by the Latent Profile Analysis (LPA) solutions, the simplicity and interpretability of the solutions, and alignment with theoretical frameworks. To identify the optimal model/solution, a series of models ranging from 1 to k latent profiles are estimated and evaluated by comparing their relative fit and classification diagnostics. Commonly used fit indices include the Bayesian Information Criterion (BIC), its sample-size-adjusted variant (SABIC), and the Akaike Information Criterion (AIC), where lower values indicate a better model fit. I compared the k-profile solution to the k-1 profile solution using the Lo-Mendell-Rubin Test (LMRT) and the Bootstrap Likelihood Ratio Test (BLRT). Significant results from these tests indicate support for the k-profile solution (Masyn, 2013; Nylund-Gibson & Choi, 2018).

Classification diagnostics offer valuable insights into the class enumeration process. The "Average Posterior Class Probabilities" provide a measure of classification accuracy for each latent class. These are calculated by averaging the model-estimated (posterior) probabilities of class membership for individuals most likely to belong to that class. Values of .70 or higher are considered desirable (Masyn, 2013). Another key diagnostic is the entropy index, which reflects the accuracy of individual classifications within the model. Similar to a reliability coefficient, entropy ranges from 0 to 1, with values closer to 1 indicating better classification accuracy and clearer separation between classes (Celeux & Soromenho, 1996).

Following the determination of the number of profiles, covariates (e.g., distal outcomes) were incorporated into the model using a three-step method that accounts for measurement error. In this study, the significance of covariates in predicting the profiles was assessed through logistic regression using the R3STEP approach. Additionally, differences between profiles in terms of the mean distal outcome (GPA) were analyzed using the BCH method (Asparouhov & Muthén, 2014, 2021; Muthén & Muthén, 1998-2017)

3 Results

Detailed descriptive statistics and the correlations among study variables are shown in Table 1. COAP was negatively associated with COAV but showed no significant relationship with BEAV-SS or BEAV-AS. In contrast, COAV demonstrated a moderate positive association with both BEAV-SS and BEAV-AS, which were also moderately positively correlated with each other. Boredom proneness was negatively associated with COAP but positively linked to the other three coping strategies. GPA was positively associated with COAP and negatively associated with both avoidance-type coping strategies and boredom proneness. Furthermore, cognitive approach strategies were more commonly employed by female students, whereas behavioral avoidance-type coping strategies were more prevalent among males, irrespective of stimulus type.

Table 1: Descriptive Statistics and Correlation Matrix

	1	2	3	4	5	6	7	8
1 COAP		-.21***	-.002	.004	-.10**	.13***	.02	-.18***
2 COAV			.38***	.38***	.23***	-.18***	-.05	.01
3 BEAV-SS				.39***	.33***	-.12***	-.02	.13***
4 BEAV-AS					.08**	-.07*	.01	.15***
5 Boredom proneness						-.15***	-.01	.02
6 GPA							.05	-.03
7 Age								.03
8 Gender								
M	3.30	3.16	2.45	1.90	3.25	3.46	21.14	-
SD	.75	.82	.83	.78	1.22	.56	1.77	-
α	.86	.75	.79	.68	.84	-	-	-

Note. *p<.05; **p<.01; ***p<.001. COAP: Cognitive Approach, COAV: Cognitive Avoidance; BEAV-SS: Behavioral Avoidance based on Simple Stimuli; BEAV-AS: Behavioral Avoidance based on Activating Stimuli.

Table 2: Model fit statistics, entropy and profile proportions for latent profile analyses of class-related boredom coping

k	AIC	BIC	aBIC	Entropy	LMR (p)	BLRT (p)	Profile proportions
2	23596.65	23660.61	23619.33	.79	<.001	<.001	.73/.27
3	23394.35	23482.92	23425.75	.70	<.001	<.001	.45/.38/.17
4	23326.35	23439.53	23366.48	.73	.04	<.001	.27/.22/.41/.10
5	23274.79	23412.57	23323.64	.77	.008	<.001	.11/.41/.21/.25/.02
6	23243.36	23405.75	23300.94	.78	.195	<.001	.02/.39/.13/.08/.25/.13

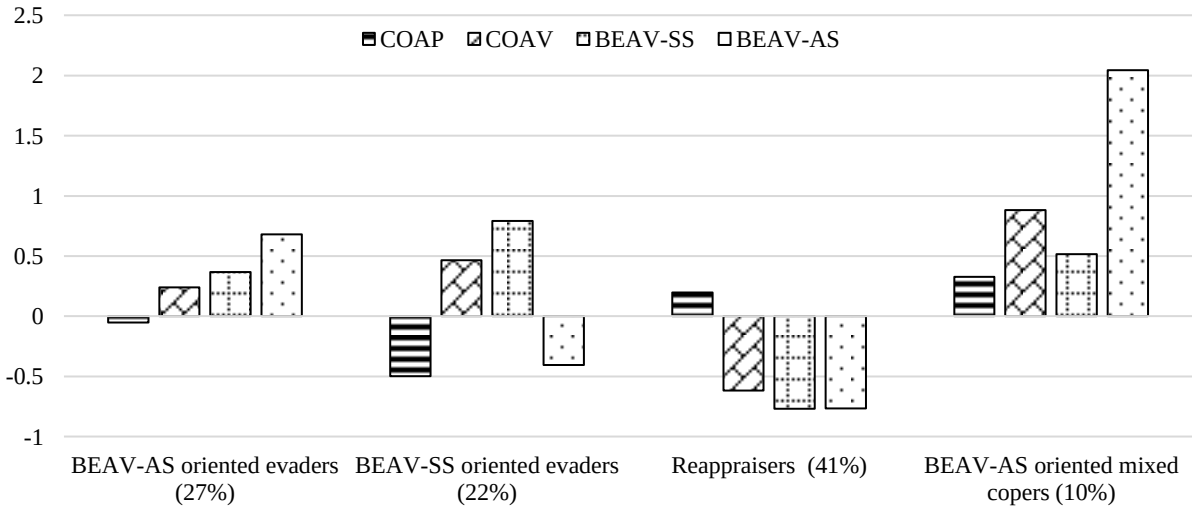
Note. k: Number of latent profiles, AIC: Akaike Information Criterion, BIC: Bayesian Information Criterion, aBIC: Sample-size adjusted BIC, LMR: Lo-Mendell-Rubin Likelihood Ratio Test, BLRT: Bootstrap Likelihood Ratio Test.

Latent profile analyses were conducted to identify class-related boredom coping profiles (see Table 2). The determination of the number of profiles was guided by model fit statistics (e.g., AIC, LMR), classification diagnostics (e.g., entropy, average posterior class probabilities) and profile sizes. AIC, BIC, and aBIC values were observed to decrease with an increasing number of profiles, while the BLRT value remained significant. According to Nylund-Gibson and Choi (2018), profile sizes should exceed 5-8% of the sample to ensure stable solutions. However, in the 5- and 6-profile solutions, at least one profile accounted for less than 5% of the sample, making these solutions unstable. Comparing the 3- and 4-profile models, the 4-profile model was identified as an extension and improvement of the 3-profile solution. Considering both interpretability and reliability (e.g., classification diagnostics), the 4-profile solution was selected as the most appropriate. The AvePPk values in Table 3 are above .70, suggesting clear distinction between profiles.

Table 3: Average posterior class probabilities (AvePPk) for most likely latent class membership in the four-profile solution

Profil	Profile 1 N = 272 (27%)	Profile 2 N = 211 (22%)	Profile 3 N= 421 (41%)	Profile 4 N= 109 (10%)
Profile 1	**.82**	.11	.03	.04
Profile 2	.10	**.74**	.16	.00
Profile 3	.02	.09	**.89**	.00
Profile 4	.08	.00	.00	**.92**

Figure 1: Profiles based on standardized mean scores (N = 1013)



The first profile is referred to as BEAV-AS oriented evaders, characterized by their frequent use of avoidance strategies, particularly BEAV-AS. The second profile, labeled BEAV-SS oriented evaders, predominantly employs avoidance strategies other than BEAV-AS, especially BEAV-SS. The third profile, the largest in size, is named Reappraisers, comprising students who primarily adopt cognitive approach strategies while steering clear of avoidant coping methods, aligning with findings from previous studies (e.g., Daniels et al., 2015). Finally, the smallest profile group is termed BEAV-AS oriented mixed copers. Members of this group utilize all coping strategies extensively, with a notable emphasis on BEAV-AS.

Table 4: Covariates predicting class-related boredom coping profiles

Profile	**Covariates**	**B (SE)**	**p**	**OR**	**%95 CI**
BEAV-SS evaders (BEAV-AS evaders)	Age	-0.22 (0.08)	.007	0.80	0.68 – 0.94
Reappraisers (BEAV-SS evaders)	Age	0.20 (0.08)	.014	1.22	1.04 – 1.42
BEAV-SS evaders (BEAV-AS evaders)	Gender	-0.76 (0.32)	.019	0.47	0.25 – 0.88
Reappraisers (BEAV-AS evaders)	Gender	-0.92 (0.21)	.000	0.40	0.27 – 0.61
BEAV-AS mixed copers (Reappraisers)	Gender	0.64 (0.27)	.018	1.89	1.12 – 3.21
BEAV-SS evaders (BEAV-AS evaders)	BP	0.03 (0.01)	.025	1.03	1.01 – 1.06
Reappraisers (BEAV-AS evaders)	BP	-0.03 (0.01)	.002	0.97	0.95 – 0.99
Reappraisers (BEAV-SS evaders)	BP	-0.06 (0.01)	.000	0.94	0.91 – 0.96
BEAV-AS mixed copers (Reappraisers)	BP	0.05 (0.01)	.000	1.05	1.02 – 1.07

Note. Profile in parentheses is the reference group. Gender variable is coded as Female=1, Male=2. B: unstandardized regression coefficient, SH: Standard Error, OR: Odds Ratio, CI: Confidence Interval, BP: Boredom proneness.

BEAV-SS oriented evaders were younger, more prone to boredom than BEAV-AV oriented evaders and Reappraisers, and more commonly female compared to BEAV-AS oriented evaders. Reappraisers are more common among females than BEAV-AS oriented evaders, while BEAV-AS oriented mixed copers are more common among males than Reappraisers. Reappraisers also have a lower tendency to boredom compared to the other three profiles.

Table 5: Differences of academic achievement and class-related boredom between profiles

	BEAV-AS oriented evaders (a)	BEAV-SS oriented evaders (b)	Reappraisers (c)	BEAV-AS mixed copers (d)	Overall test
Academic achievement	3.38_{c}	$3.31_{c,d}$	$3.60_{a,b,d}$	$3.47_{b,c}$	27.72^{***}
Class-related boredom	$3.42_{b,c}$	$3.97_{a,c,d}$	$3.10_{a,b,d}$	$3.51_{b,c}$	109.21^{***}

Note. N = 1013, ***p<.001. Pairwise comparisons for the profiles whose means differed significantly (at least p<.05) as a result of the Wald test are shown with subscripts.

Reappraisers exhibited significantly higher academic achievement than the other profiles. Additionally, BEAV-AS mixed copers demonstrated higher academic achievement than BEAV-SS oriented evaders. However, BEAV-AS oriented evaders did not show significant differences in academic achievement compared to either BEAV-SS oriented evaders or BEAV-AS oriented mixed copers. BEAV-SS oriented evaders reported significantly higher levels of class-related boredom compared to other profiles, whereas Reappraisers experienced the lowest levels of boredom. Although BEAV-AS oriented mixed copers reported lower levels of class-related boredom compared to BEAV-AS oriented evaders, this difference was not statistically significant.

4 Discussion

Although there are many studies showing that class-related boredom negatively affects students' academic achievement, there are very few studies on how students cope with this affective state (But et al., 2023; Daniels et al., 2015; Nett et al., 2010). Furthermore, existing studies suggest that coping styles for boredom vary across cultures (e.g., But et al., 2023). In this study, students' coping profiles were identified using a culturally sensitive Coping Strategies with Boredom in Class Scale (Kökçam & Satan, 2022). This study examined whether age, gender, and boredom tendency predicted boredom coping profiles and explored whether these profiles significantly differed in terms of academic achievement.

Latent profile analysis identified an optimal 4-profile solution within the sample: BEAV-AS-oriented evaders, BEAV-SS-oriented evaders, Reappraisers, and BEAV-AS mixed copers. Consistent with previous studies, Reappraisers emerged as a profile, primarily preferring cognitive approach (COAP) coping strategies over other strategies. The profile identified as evaders in previous studies showed differences in this study based on the preference for different types of stimuli (activating vs. simple) in the behavioral avoidance strategies used to cope with class-related boredom: BEAV-AS-oriented evaders and BEAV-SS-oriented evaders. BEAV-AS-oriented evaders generally relied on avoidance strategies but specifically favored behavioral coping strategies involving activating stimuli. In contrast, BEAV-SS-oriented evaders preferred cognitive avoidance strategies and particularly behavioral avoidance strategies involving simple stimuli, rather than those based on activating stimuli. BEAV-AS-oriented mixed copers, similar to BEAV-AS-oriented evaders, frequently resort to all avoidance strategies, with a particular emphasis on behavioral coping strategies involving activating stimuli. BEAV-AS-oriented mixed copers reported using cognitive approach strategies more frequently than any other profile.

Boredom often arises from a sense of diminished value and lack of meaning in one's current situation. Overcoming this discomfort requires re-establishing a sense of purpose and meaningfulness in one's activities (van Tilburg & Igou, 2012). Evaders tend to alleviate the boredom they feel during lessons by cognitively disengaging and turning to behaviors that

involve alternative stimuli for distraction. However, different types of stimuli influence boredom in distinct ways. Simple stimuli often elicit passive and automatic responses, whereas activating stimuli encourage active and productive responses. According to Fromm (1978), simple stimuli lose their effectiveness when repeated beyond a certain threshold. To regain their stimulating effect, either their intensity must be increased, or their content must be altered. Bertrand Russell (1930/2013) warned that passive stimulation could exacerbate boredom susceptibility over time. In contrast, activating stimuli remain dynamic and ever-changing due to the productive responses they evoke. The stimulated individual uncovers new aspects within these stimuli, "changes them by always discovering new aspects in them" (Fromm, 1983, p.240).

BEAV-SS-oriented evaders were generally younger, female, and more prone to boredom compared to BEAV-AS-oriented evaders. BEAV-AS-oriented evaders and BEAV-AS-oriented mixed copers tended to be male and exhibited a higher proneness to boredom than Reappraisers. Reappraisers, on the other hand, were more commonly found among older females. The findings suggest that age play a significant role in determining the preference of strategies for coping with boredom, particularly among females. On the other hand, the role of gender in the preference of coping strategies is also salient. The BEAV-SS dimension encompasses coping behaviors such as sleeping, playing games on the phone, browsing social networking sites, and chatting with a friend. In contrast, the BEAV-AS dimension includes coping behaviors like reading books, solving puzzles or Sudoku, reading the news, and writing down one's thoughts. Clearly, coping strategies based on activating stimuli require significantly more cognitive effort than those based on simple stimuli. Additionally, cognitive approach strategies (COAP) demand intense cognitive effort, as they involve both reconstructing the meaning of the lesson and making a deliberate effort to focus on it despite the boredom. Females, it seems, tend to believe that if they are going to exert cognitive effort during class, it should be directed towards the lesson itself. When they abandon the effort, they prefer coping methods that minimize cognitive effort. Evidence in the literature indicating that males are more likely to use active problem-solving strategies, rather than passive approaches like emotional coping (Meléndez et al., 2012), suggests that males tend to favor active strategies—even when these strategies are avoidance-oriented.

When academic achievement levels are analyzed across different profiles, Reappraisers, consistent with previous findings, emerge as the most successful group (Butt et al., 2023; Nett et al., 2010). Following them are BEAV-AS mixed copers, who employ a combination of cognitive coping strategies and avoidance strategies. The GPA difference between BEAV-AS mixed copers and simple stimuli-oriented evaders is significant; however, it is not significant when compared to activating stimuli-oriented evaders. Furthermore, no significant difference in GPA was found between simple stimuli-oriented evaders and activating stimuli-oriented evaders. The predominant use of activating-stimuli-based strategies, may be more effective in reducing boredom compared to simple-stimulus-based strategies, as it leads to disengagement from the lesson. However, this disengagement comes at the cost of negatively impacting academic achievement.

It is clear that the most effective strategy for reducing class-related boredom is to re-establish the meaning of the lesson/course. While avoidance strategies may help alleviate boredom, they can negatively impact focus on the lesson. In contrast to the classroom setting, the use of avoidance strategies may be beneficial during self-study time. After successfully coping with boredom through these strategies, an individual can focus more effectively on homework. While the strategies used to cope with boredom may influence future boredom levels, the reverse can also be true. The strategies chosen by individuals who are more prone to boredom may differ from those selected by those who report experiencing less boredom.

Reappraisers' lower tendency toward boredom, compared to other profiles, may enable them to tolerate higher levels of boredom in class more effectively. Although simple-stimulus-oriented evaders have a high boredom tendency, their reliance on the most passive strategies may temporarily alleviate their boredom, but ultimately exacerbate it over time.

Limitations and future directions

The primary limitation of this study is its cross-sectional design, which does not allow for the examination of causal relationships. To capture the causal processes effectively, the time lag must be sufficient. Given the reciprocal relationship between coping strategies and class-related boredom, future research employing a longitudinal panel model would yield more valid and reliable results (see Keith, 2019). Another limitation of the study is the use of a single item to measure class-related boredom. Employing a validated and reliable scale, such as the one developed by Pekrun et al. (2005), would enhance the validity of the findings.

5 Conclusion

This study, utilizing a culturally sensitive scale for coping with class-related boredom, reveals that Turkish students' coping styles differ from those of other cultures. Additionally, boredom coping profiles were found to be influenced by factors such as age, gender, and boredom tendency. Consistent with previous research, students who predominantly employed cognitive approach strategies demonstrated higher academic achievement compared to others.

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