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Learning through Laughter: Humor and Its Effects on Student Enjoyment & Engagement in Research Classroom

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ABSTRACT
Lecturers with empathy, patience, ethics, and good personality can encourage students to achieve better academic performance. This study aims to see the role of humor and the students' views on the lecturer's humor and its effect on engagement. Engagement is the drive from within the individual to get involved, and enthusiasm in every activity is proven by action. Several emotional variables influence engagement in students. This study aims to identify the effect of humor on student engagement in the classroom and the mediating effect of student enjoyment

towards the proposed relationship. This study was conducted on 217 undergraduate students in the Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA (UiTM). The samples are selected using systematic sampling. This study was conducted using descriptive questionnaires. The data analysis in this research uses Structural Equation Modeling (SEM) through the Analysis of Moment Structure tools (AMOS). The findings show that students are optimistic about the applicability and appropriateness of humor in teaching and learning. The findings found that student enjoyment mediates the relationship between humor and student engagement. This means emotions have an evaluation relationship with learning and performance. The implications and recommendations are also highlighted.

Keywords: humor, engagement, enjoyment, mediation, statistical analysis

INTRODUCTION

Continuing studies at the university level is the dream of every individual. Campus life is very different from the world of school. Everything is no longer the same, from daily routines to learning methods. University students tend to have mental problems due to various psychosocial changes and academic pressure (Mofatteh, 2021). The students must adapt to these changes to prepare for a more challenging professional career. Indirectly, this group of students experience pressure due to excessive expectations of them, thus endangering their physical and mental health (Noor et al., 2021; Sheldon et al., 2021). Thus, educators or lecturers are no longer relevant to using autocratic rules by forcing, scolding, raising their voices, or using harsh language to discipline students. Instead, educators need to create relationships with the students. One way is through a fun learning approach (St-Amand et al., 2021). Continuous learning sessions in the classroom sometimes cause students to feel bored and unenthusiastic about continuing to learn (Daumiller et al., 2020). Boring teaching and learning in class often makes students less interested in continuing to study the subject (Noor, 2023a). Student involvement in activities is also less because students are busy doing their work, whispering, disturbing, sleepy, or daydreaming (Tsukawaki & Imura, 2020). The students' attention was difficult to maintain after 10 minutes, even though an exciting induction set was introduced at the beginning of learning.

An educator plays a significant role in ensuring that students can entirely focus and be enthusiastic about learning (Tsakona, 2020). There are many examples of games and activities in class that can be done together with students to encourage students to enjoy learning. Interruptions during the learning session can help students stay focused and enjoy learning in class. Moreover, educators also can insert some elements of humor, comedy, and fun in their classes (Erdoğdu & Çakıroğlu, 2021). Life without humor is very dull, and imagine learning history, mathematics, and statistics without a joke from an educator. Of course, the class will be gloomy. Many students consider research and statistical analysis to be complicated subjects. The educators have used many ways to attract their attention but often end up with a feeling of disappointment. Effective teaching methods might help to attract and maintain student attention in class. Apart from that, students are also actively involved in teaching and learning. This can directly help them remember the facts that have been learned.

Previous studies have shown that using humor technique increases students' performance (Embalzado & Sajampun, 2020; Pretorius et al., 2020). Many approaches to learning styles are the basis of lecturer training. Educators need to ensure their teaching can capture the visual, auditory, and kinesthetic students, and there are many chances that the educators will fail at least one of those core student groups (Ishartono et al., 2021). Each lesson must ensure at least one activity for each learning style. Examples are illustrating concepts, taking notes, watching videos, playing quizzes (Visual), listening to podcast discussions, reading aloud, making music (Auditory), doing experiments, role-playing, and moving around the class (Kinesthetic). The humor technique can be applied to cater to all learning capabilities. For example, the educators use cartoon illustrations to create an interactive presentation that allows students to brainstorm about the topic or use cartoon videos where the educators can ask questions and receive student responses. In the context of teaching, elements of humor will make learning more meaningful to students. Educators need to use competent language to express a sense of humor and use graphics such as cartoons and body language that can create a fun atmosphere. Pranoto (2021) associates humor with the funniest possible cause of someone to be happy when they hear it. According to St-Amand et al. (2021), humor can reduce relationship limitations or formality between educator and student. As a result, students will be more comfortable, confident, and brave when meeting educators to discuss and interact.

The educators need to be creative and either use humor in a planned way or spontaneously when they realize that their students are visibly less interested or bored. Therefore, it is appropriate for educators to use humor elements even briefly, either at the beginning or during teaching (Tong & Tsung, 2020). Empirical studies have discovered that humor increases student enjoyment and engagement in classes. Students will have more interest in completing learning activities (Erdoğdu & Çakıroğlu, 2021; Daumiller et al., 2020; Tsukawaki & Imura, 2020). Pretorius et al. (2020) agree with the positive impact on engagement, motivation, and student performance through fun and humor learning. Therefore, this study aimed to assess the level of humor in teaching and learning, student enjoyment, and student engagement in the research classroom. The second is to examine the effect of humor on student engagement in research classrooms, and the third is to assess the indirect effect of student enjoyment on the relationship between humor and student engagement. The results of this study can help various parties deal with the problems and issues of students' low motivation in the classroom. At that time, it can help educators realize appropriate teaching techniques to improve teaching performance.

This follow-up is essential to create a learning environment and climate that is comfortable and conducive to both educators and students to avoid the emergence of pressure in the classroom. The study could deliver a significant contribution to the current literature since there is a need for more studies examining the effect of humor in the classroom, especially from the context of Malaysian higher learning institutions. Many studies have also examined the effect of comics or cartoon illustrations, yet the intangible humor characteristics owned by the educators have been ignored (Erdoğdu & Çakıroğlu, 2021; Daumiller et al., 2020). The use of causal research examination also helps to overcome the methodological deficiencies in past research. Causal research is a type of scientific research that aims to understand the cause-and-effect relationship between two or more variables. Understanding causality allows us to predict and control various events and develop new knowledge to improve human life quality.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Pekrun's (2006) Control-Value Theory of Achievement Emotions

Academic emotions are emotions that appear as students follow the learning process. Pekrun (2006) specifically stated that the emotions that appear along with learning activities include pleasure, boredom, or anger, which is related to learning outcomes. The theory explains that the impact of self-efficiency against academic emotions occurs through the appraisal process, where self-efficiency is the operationalization of the control component of the appraisal process. Furthermore, academic emotions influence individual performance in utilizing cognitive resources and, in turn, influence learning performance (Simonton & Garn, 2020). This study can be explained through the theory of value control from Pekrun (2006), which states that self-control is an antecedent of academic emotions that act as a driving force to get involved or stay away from academic situations. Emotions connect students to apply self-regulation strategies and deep involvement in tasks in a flow without considering the time and energy spent. Conversely, negative emotions are linked with boring activities and apathy (Pekrun, 2006). Emotion has a significant mediating effect on the relationship between self-efficacy and academic performance. Tze et al. (2022) state that individuals who have a practical view will grow intrinsic interest and a sense of pleasure in various activities. On the other hand, individuals who doubt their ability will avoid complex tasks that they perceive as a personal threat that will weaken their commitment to pursuing their desired academic goals (Forsblom et al., 2022).

Student Engagement

Student engagement is the time and energy involved in learning (Lowe & El Hakim, 2020). This includes time spent interacting with peers and instructors and engaging themselves actively and collaboratively in learning activities (Lowe & El Hakim, 2020). In addition, active student involvement will impact academic progress, and subsequently, the students will be more eager to succeed in their studies (Noor, 2023b; Tight, 2020). According to Al-Obaydi et al. (2023), student involvement has three aspects: cognitive, affective, and behavioral. These three aspects are essential criteria for student involvement (Wong & Liem, 2022). Student engagement can be assessed by considering these three aspects. The cognitive criterion measures how students use their mental abilities to complete a given task. Cognitive engagement refers to cognitive strategies that involve students' intellect and mastery in planning, evaluating the learning content, understanding ideas, and mastering complex skills (Reschly & Christenson, 2022). Students are willing to accept challenges and rationality when solving problems and evaluating the importance of learning will prepare them to live for the future. The second criterion, behavior, considers students' active response to the given task (Reschly & Christenson, 2022). According to Farrell and Brunton (2020), behavioral involvement refers to how students are involved in learning activities regarding attention, participation, effort, and diligence. In other words, this criterion sees student response in an assignment. At the same time, the affective criterion involves the students' emotional reactions because of the tasks performed. Emotions refer to students' feelings towards lecturers, peers, learning activities, experiences, and their sense of belonging (Reeve et al., 2020). Students with high affective involvement will enjoy learning or are happy to attend class (Chiu, 2022).

Students engage with lecturers who know their words and exude confidence. Although the projector can display clear and concise slides, the lecturer is the main ingredient of every presentation. A well-planned lesson presentation helps the lecturer maintain students' attention and interest, which is essential for effective learning (St-Amand et al., 2021). To increase students' enthusiasm, educators can provide humor amid the teaching. Unfriendly relationships between lecturers and students cause various problems in the classroom (Weisi & Mohammadi, 2023). This can also cause students to dislike their lecturers. According to a study by Daumiller et al. (2020), students like educators who are good at humor. However, many educators are unable to do it in the classroom. Factors such as gender, subjects, and personality are why educators are not funny.

A lecturer's humor can have a close effect between students and lecturers (Pretorius et al., 2020). The closer the students feel to their lecturer, the easier it will be for them to absorb what the lecturer says. Fun learning is expressed in the elements of the educator's disposition (Daumiller et al., 2020). This standard outline that educators must create a cheerful atmosphere and stimulate learning (Tsukawaki & Imura, 2020). The role of the educator is vital to create an effective teaching and learning process. Therefore, educators must know the importance of fun learning elements in teaching. According to Tsakona (2020), educators need to use language capable of expressing funny feelings, cartoon-like graphics, and body language that can create a fun atmosphere for students. Relaxed learning sessions are full of exciting and diverse activities that can attract student engagement toward teaching and learning. Tsukawaki and Imura (2020) relate humor to the fun that can cause a person to be happy when listening to it.

The practice of humor can create a fun learning environment (St-Amand et al., 2021). However, some educators could be better at humor with the students. This situation can be channeled through other means, such as the use of teaching aids that have elements like cartoons and comics that have attractive caricatures (Erdoğdu & Çakıroğlu, 2021). Directly, this creativity can help educators make the teaching and learning process take place in a fun, cheerful, and effective atmosphere. Among the examples of fun education is a fun learning session with elements of humor, aesthetics, games, music, and acting. Therefore, this way can reduce the level of anxiety and fear among educators and students. Thus, the students always look forward to the next session. In addition, a whole learning session with various exciting activities allows a complete student-centered role (Tsukawaki & Imura, 2022). The element of humor can also play a complementary role in the intimacy of the relationship between educators and students. The potential use of humor is one of the elements that can help educators shape the student's behavior. The educator's responsibility is to form students' emotions inside the classroom. Therefore, educators need to be wise in inculcating social skills to promote self-awareness skills, empathy, self-monitoring, and self-motivation (Erdoğdu & Çakıroğlu, 2021). Through fun learning elements, educators will always like students when they are confident that their educators are student-friendly (St-Amand et al., 2021).

A study by Embalzado and Sajampun (2020) shows that humor in the classroom helps the educator-student interaction happen more smoothly to increase teaching effectiveness. This act does not require a professional comedian. Jokes can help students increase their communication

skills and help shy students interact (Pranoto, 2021). It also allows teaching and learning activities to be more accessible. St-Amand et al. (2024) suggest that humor be used as best as possible because this practice can help overcome some personal problems. Student feedback on the study conducted by Pranoto (2021) confirmed that the practice of humor can help students' learning process. Jokes improve students' attitudes toward subjects and reduce anxiety, stress, tension, and boredom. This practice learns and improve understanding, memory, interest, motivation to learn, and learning satisfaction and encourage creativity and divergent thinking (Embalzado & Sajampun, 2020).

The research courses are the core subjects that must be undertaken by undergraduate students in the Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA (UiTM). These subjects are core subjects for the program, and students must pass to award their respective Bachelor's Degrees. However, this subject is seen as one of the most complex subjects. Although no empirical study proves the cause of the achievement of results for this subject, it is believed to be primarily driven by student interest. The lecturer utilized humor techniques in teaching and learning, such as cartoon illustrations and jokes in the classroom. The lecturer also won the faculty's Most Popular Lecturer in 2023. Figure 1 illustrates examples of humor elements used in the research classes.

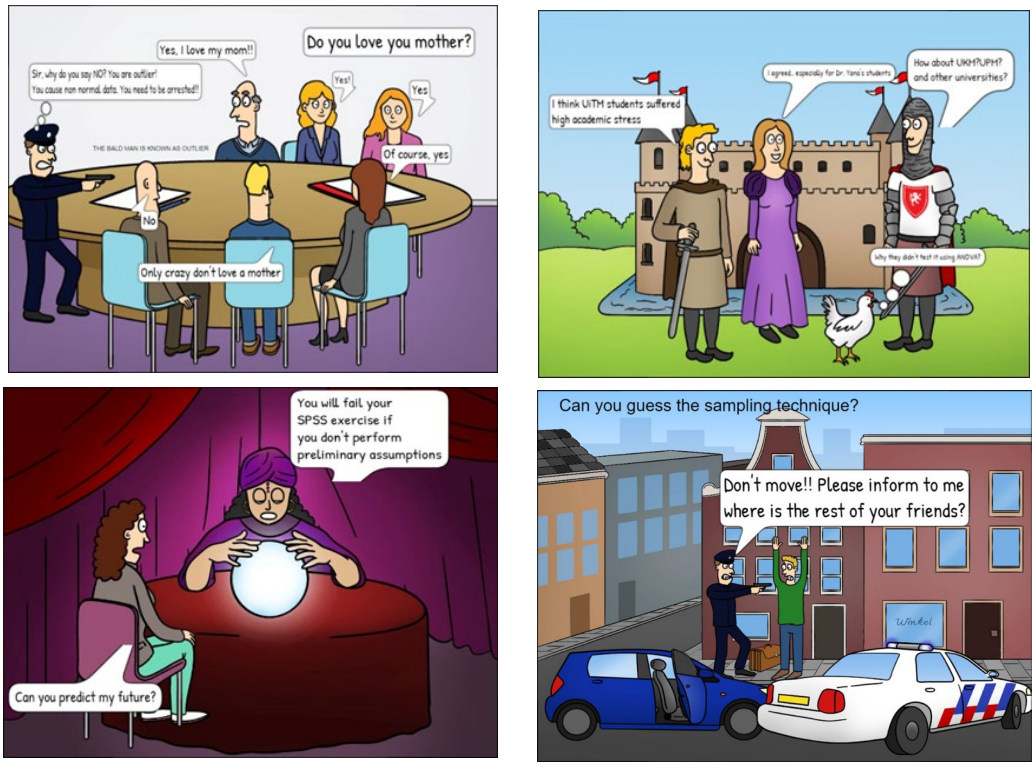

Figure 1. Examples of teaching contents used in research classroom

The Mediation Effect of Student Enjoyment

The feeling of enjoyment contrasts with sadness, which is an essential element of human feelings (Dewaele & Li, 2021). Hettinger et al. (2021) defined enjoyment as a powerful feeling that motivates the human drive for success despite obstacles and insufficient skills. Traditionally, most studies in psychology have looked at aspects of negativity in an event, cause, or factor that help humans achieve social functionality while improving the well-being of life (Okada & Sheehy, 2020). Therefore, positive psychology takes a balancing study to unearth the secret of high individual motivation, is at an optimal level of well-being, and always seems happy. Positive psychology scholars look at the quality of human life from various angles, including culture and human differences. One of the areas of positive psychology is well-being, which is also linked with quality of life. The well-being components studied include life satisfaction, luxury, personality, political stability, mortality rate, service, and enjoyment. Enjoyment is part of the positive effect most individuals commonly experience. Reinforced by hedonic theory and eudaimonic, enjoyment increases individual potential in life. A study conducted by Pedler et al. (2022) shows that most people show emotional levels from moderate to neutral. Individuals sometimes go through life more cheerfully than in previous days. This enjoyment seems characterized by body language, whether facial expressions such as smiles or other behaviors such as energy. It is also measured based on cognitive assessment of individual life. Scholars argue that frequency measures reflect the individual's emotional level (Hettinger et al., 2021).

Past studies have found that the possibility of social support contributes to students' enjoyment. Social support refers to various materials that support the student's emotions (Pedler et al., 2022). It can be seen based on social relationships or networks that look at the number of people who relate to individuals. Typically, social support is measured based on the structure or function of social relationships. The social networks of undergraduate students are limited to parents, peers, and lecturers. Less anxiety and depression and positive emotions in the classroom and on campus help students live life to the fullest. These positive feelings are referred to as enjoyment. Past studies have proved that a happy student is a student who can get the correct grade and excel in academics compared to less cheerful students. Student engagement is also influenced by positive emotions and resources (Kulakow & Raufelder, 2020). Based on these factors, emotion is one of the variables affecting student engagement. Emotions are the basis of the psychological system of individual adaptation to the environment. Emotion is a multidimensional construct with affective, cognitive, motivational, and psychological components, and educational emotions affect students' learning process, performance, and personal growth (Kulakow & Raufelder, 2020). Based on the above reasoning, the following hypotheses are developed:

H1: Humor in teaching and learning significantly affects student engagement.
H2: Humor in teaching and learning significantly affects student enjoyment.
H3: Student enjoyment mediates the relationship between humor in teaching and learning and student engagement.

Figure 2 portrays the study's conceptual model.

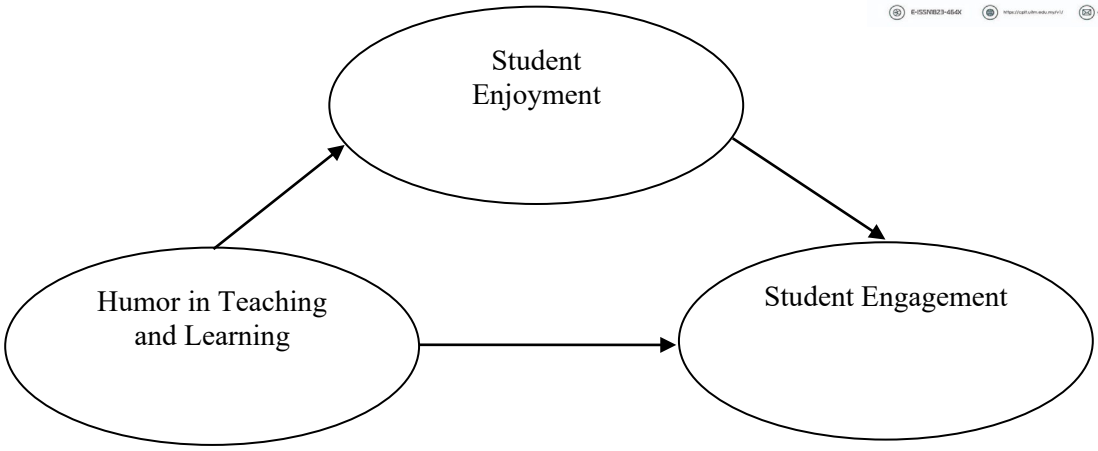

Figure 2. Conceptual framework

METHODOLOGY

This research instrument is a questionnaire survey approach. The population in this study is undergraduate students in the Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA (UiTM), who undertook research methodology subjects (ADS511, ADS651, and ADS555). The sample size was determined based on the table made by Krejcie and Morgan (1970). At a population size (N) of 500, the sample size (n) is 217. The study employed a systematic sampling technique. The instructors utilized humor in the classroom research methodology. The questionnaire used was modified from the past studies. Humor in teaching and learning was measured based on 8-items adapted from Alkhattab's (2012) study. Next, 5-item student enjoyment was adapted from Morrison's (2008) and Dewaele et al.'s (2018) studies. Finally, the student engagement measure of 8 items was adapted from Darr's (2012) study. Corresponding to Nunnally (1978), the tool of a study is contemplated to have satisfactory internal consistency if the value of Cronbach's alpha coefficient surpasses the value of 0.70 (α value > 0.70). Based on Cronbach's alpha values shown in Table 1, this study fulfilled the assumption of reliability. In this study, tests of Skewness and Kurtosis were used to see the normality of the data. Table 1 shows that the study's findings are normally distributed; this coincides with the value presented by Kline (2005). The attained values for skewness and kurtosis were within ±3 and ±10, respectively.

Table 1. Items in the study questionnaire

Variables	Items	Skewness	Kurtosis	Cronbach's Alpha Coefficient
Humor in Teaching and Learning	1. I appreciate my lecturer's use of humor in the research methodology classroom. 2. Humor interferes with my learning. 3. Humor makes me more relaxed in my research methodology classes. 4. I feel more comfortable with the lecturer who uses humor in the classroom.	-0.867	0.3220	0.812

	5. The use of humor makes me relax and helps me reduce stress. 6. Humor bridges the gap between lecturers and students. 7. The use of humor encourages the students to attend the class. 8. Using humor helps me understand and remember the material being taught easily.			
Student Enjoyment	1. The research classroom is fun. 2. The lecturer is encouraging. 3. There is a good atmosphere. 4. I enjoy the research classroom. 5. In the research classroom, I am excited about the learning activities.	-0.218	-0.684	0.850
Student Engagement	1. I pay attention in class. 2. I follow the rules of my institution. 3. I usually complete my assignments on time. 4. I feel excited about the university work. 5. My classroom is an exciting place to be. 6. When I read a book, I question myself to understand the subject. 7. I integrate the acquired knowledge in solving new problems. 8. I integrate subjects from different disciplines into my general knowledge.	-0.037	-0.988	0.799

This study used the structural equation model (SEM). SEM involves the analysis of the measurement model and the structural model. The measurement model assesses the latent (unobserved) variable as a linear function of the indicator (observed variable). Analysis of the measurement model in confirmatory factor analysis (CFA) was conducted to determine which items measure the study constructs. In SEM, several fitness indices describe the model's fit, as obtained from the statistics. To determine the model fit, the value for Comparative Fit Index (CFI), Goodness Fit Index (GFI), and Tucker Lewis Index (TLI) is expected to be ≥ 0.90 (Hair et al., 2010). The Root Mean Square Error of Approximation (RMSEA) explains the residual found in the model. The size of the expected RMSEA value ≤ 0.05. A value of RMSEA ≤ 0.05 indicates a close fit, whereas if the value is in the range of $0.05<\text{RMSEA}\leq 0.08$, the model can still be assumed as a good fit (Hair et al., 2010). The value of chi-square ($\chi 2/df$) ≤ 3 It is considered acceptable.

RESULTS

Demographic Profile

Out of 217 respondents, valid data from 200 respondents were obtained with a return rate of 81.2%. Based on Table 2, many respondents were female (n=132, 66%), and the rest were male respondents (n=68, 34%). Then, there were 143 respondents (71.5%) aged 21 and above, while 57 respondents (28.5%) aged less than 21. Next, in terms of living area, most respondents live outside campus (n=188, 94%), and the rest live in hostel (n=12, 6%). Finally, in terms of Cumulative Grade Point Average (CGPA), many of them achieved a CGPA of 3.00-3.49 (n=163, 81.5%), followed by <3.00 (n=23, 11.5%) and 3.50 and above (n=14, 7%).

Table 2. Demographic profile

No.	Profile	Frequency (n)	Percentage (%)
1	Gender		
	Male	68	34
	Female	132	66
2	Age		
	Less than 21	57	28.5
	21 and above	143	71.5
3	Living Area		
	Hostel Residents	12	6
	Non-residents	188	94
4	CGPA		
	<3.00	23	11.5
	3.00-3.49	163	81.5
	3.50 and above	14	7

Level of Assessment

Table 3 shows that the items for humor in teaching and learning were analyzed descriptively. In assessing the level of the item measurement, the researchers used the following indicators: 1) 1.00– 1.99 (Weak), 2) 2.00– 2.99 (Low), 3) 3.00– 3.99 (Medium), and 4) 4.00– 5.00 (High). The results show that the respondents have a medium level for the following items: 1) appreciating the lecturer's use of humor in the research methodology classroom, 2) feeling humor makes them more relaxed, 3) feeling more comfortable with the lecturer who uses humor in the classroom, 4) believes humor makes them relax and helps in reducing stress, and 5) feel humor bridges the gap between lecturers and students. Next, the mean results indicated a high level for the following items: 1) humor interferes with learning, 2) the use of humor encourages the students to attend the class, and 3) the use of humor helps them understand and remember the material being taught easily.

Table 3. Descriptive analyses of humor in teaching and learning

Humor in Teaching and Learning	M	SD	Remark
1. I appreciate my lecturer's use of humor in the research methodology classroom.	3.77	0.98	Medium
2. Humor interferes with my learning.	4.05	0.94	High
3. Humor makes me more relaxed in my research methodology classes.	3.97	1.70	Medium
4. I feel more comfortable with the lecturer who uses humor in the classroom.	3.91	0.98	Medium
5. The use of humor makes me relax and helps me reduce stress.	3.84	0.85	Medium
6. Humor bridges the gap between lecturers and students.	3.90	1.20	Medium
7. The use of humor encourages the students to attend the class.	4.07	1.11	High
8. Using humor helps me understand and remember the material being taught easily.	4.04	0.98	High

Table 4 shows that the items for student enjoyment were analyzed descriptively. The respondents agreed that the enjoyment items were at the medium level.

Table 4. Descriptive analyses of student enjoyment

Student Enjoyment	M	SD	Remark
1. The research classroom is fun.	3.60	1.07	Medium
2. The lecturer is encouraging.	3.49	1.10	Medium
3. There is a good atmosphere.	3.50	1.05	Medium
4. I enjoy the research classroom.	3.65	0.78	Medium
5. In the research classroom, I am excited about the learning activities.	3.70	0.56	Medium

Table 5 shows that the items for student engagement were analyzed descriptively. The respondents agreed that some items were at the medium level. These include 1) attention in class, 2) adherence to the rules of the institution, 3) understanding of the subject, 4) ability to integrate the acquired knowledge in solving new problems, and 5) ability to integrate subjects from different disciplines into general knowledge. On the other hand, the respondents agreed that the ability to complete the assignments on time and feel excited about the university work was at a high level.

Table 5. Descriptive analyses of student engagement

Student Engagement	M	SD	Remark
1. I pay attention in class.	3.46	0.95	Medium
2. I follow the rules of my institution.	3.27	0.92	Medium
3. I usually complete my assignments on time.	4.04	1.14	High
4. I feel excited about the university work.	4.11	1.21	High
5. My classroom is an exciting place to be.	3.70	1.00	Medium

6.	When I read a book, I question myself to understand the subject.	3.28	0.90	Medium
7.	I integrate the acquired knowledge in solving new problems.	3.11	0.95	Medium
8.	I integrate subjects from different disciplines into my general knowledge.	3.30	0.97	Medium

Confirmatory Factor Analysis (CFA)

In SEM, several fitness indices describe the model's fit obtained from the data. For this study, various indicators of the confirmatory model were acceptable (χ^2/df = 2.230, $p < 0.001$, GFI = 0.930, TLI = 0.920, CFI =0.910, and RMSEA = 0.054). Figure 3 shows the basic model using confirmatory factor analysis (CFA).

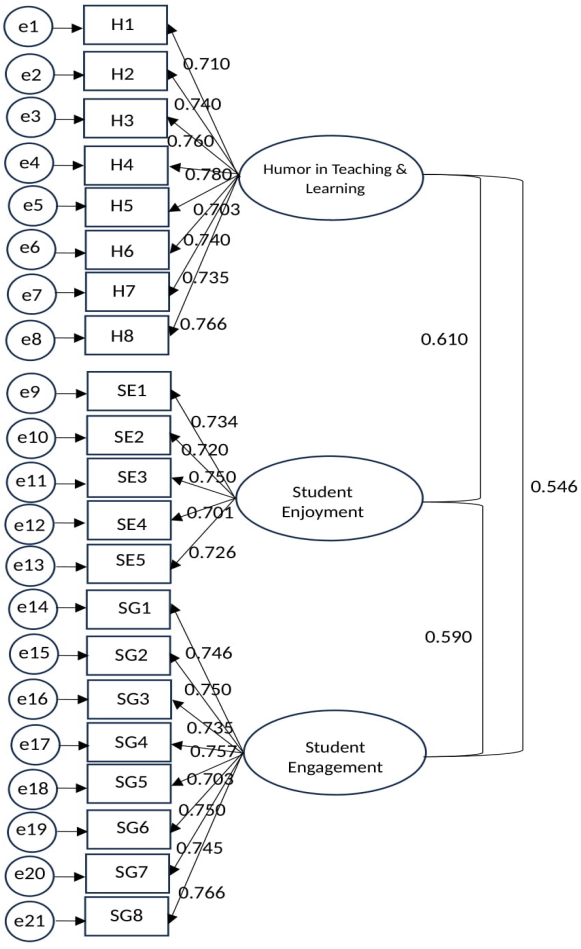

Figure 3. CFA model

Convergent and Discriminant Validity

To identify the convergent validity, the researchers need to ensure that the Composite Reliability (CR) value is ≥ 0.60 and the Average of Variance Extracted (AVE) values are ≥ 0.05 (Hair et al., 2010). Table 6 describes the Factor Loading, AVE, CR, and Cronbach's alpha for the study variables. Based on Table 6, the factor loading for each study item was more than 0.60 and was within the acceptable range (Hair et al., 2010). The study then assesses the discriminant validity by looking at the diagonal value. According to Fornell and Larcker (1981), a diagonal value is said to have discriminant validity when it is ≥ 0.85. From Table 7, the discriminant validity is achieved as the values were more than 0.85.

Table 6. Value of factor loading, AVE, CR, and Cronbach Alpha's

Variable	Items	Item Loadings	AVE (≥ 0.50)	CR (≥ 0.60)	α (≥ 0.70)
Humor in Teaching and Learning	H1	0.710	0.630	0.873	0.812
	H2	0.740			
	H3	0.760			
	H4	0.780			
	H5	0.703			
	H6	0.740			
	H7	0.735			
	H8	0.766			
Student Enjoyment	SE1	0.734	0.679	0.864	0.850
	SE2	0.720			
	SE3	0.750			
	SE4	0.701			
	SE5	0.726			
Student Engagement	SG1	0.746	0.700	0.845	0.799
	SG2	0.750			
	SG3	0.735			
	SG4	0.757			
	SG5	0.703			
	SG6	0.750			
	SG7	0.745			
	SG8	0.766			

Table 7. Discrimination validity

No.		1	2	3
1	Humor in Teaching and Learning	**0.794**		
2	Student Enjoyment	0.610	**0.824**	
3	Student Engagement	0.546	0.590	**0.837**

Note: Values in the diagonal show the square root of AVE

Structural Model

The results of the direct path show that there was a significant and positive relationship between humor in teaching and learning (β =0.390, p<0.001) and student enjoyment (β =0.517, p<0.001) towards student engagement. Thus, H1 was accepted. Next, there is a significant influence of humor in teaching and learning on student enjoyment (β =0.412, p<0.001). Thus, H2 was accepted.

Table 8. Results of direct path

Path	Estimate β	S.E.	C.R.	p
Humor in Teaching and Learning to Student Engagement	0.390	0.051	7.136	***
Humor in Teaching and Learning to Student Enjoyment	0.412	0.056	9.601	***
Student Enjoyment to Student Engagement	0.517	0.042	6.290	***

Hayes' (2018) mediation method was used to test the mediating effect. According to process V3.1, the 95% confidence interval of the mediating effect was estimated by extracting 5,000 bootstrap samples. Bootstrapping has been documented as one of the effective methods for testing the mediating effect (Hayes, 2018). The results are shown in Table 6. Humor in Teaching and Learning → Student Enjoyment → Student Engagement, the mediating effect is 0.051, the 95% confidence interval is [0.297, 0.250], excluding 0, and the mediating effect is significant. Therefore, H3 is accepted.

Table 9. Results of the mediation model

Effect	Path	β	p	95% Confidence Interval	
				Upper Limit	Lower Limit
Direct effect	Humor in Teaching and Learning to Student Engagement	0.247	**		
	Humor in Teaching and Learning to Student Enjoyment	0.256	**		
	Student Enjoyment to Student Engagement	0.199	**		
Indirect effect	Humor in Teaching and Learning to Student Enjoyment to Student Engagement	0.051	**	0.297	0.250

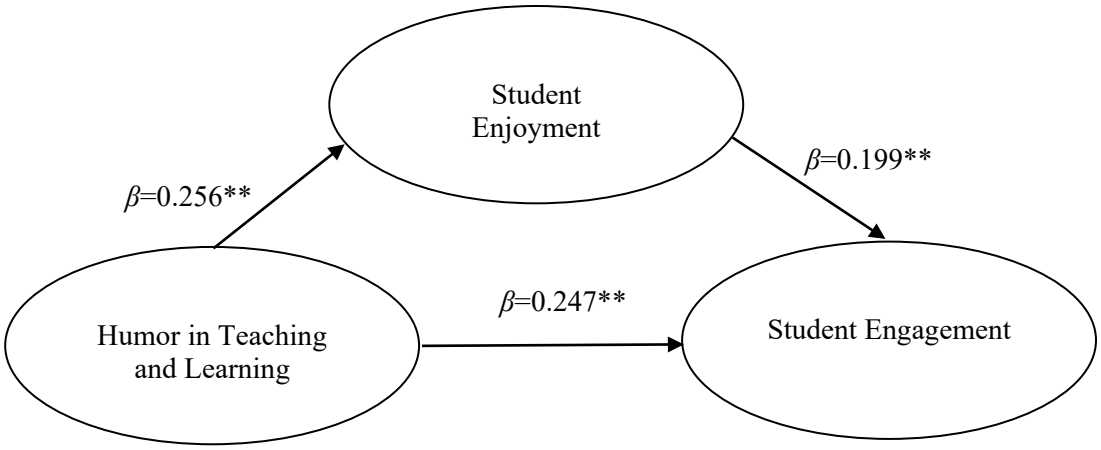

Figure 4. Conceptual framework

DISCUSSION

The findings show that students are optimistic about the applicability of humor in teaching and learning. The findings found that student enjoyment mediates the relationship between humor and student engagement. Incorporating humor into educational settings has been increasingly recognized as a potential tool for enhancing student engagement, fostering a positive learning environment, improving retention, and facilitating effective communication (St-Amand et al., 2021). Past research has shown that integrating humor into teaching methodologies, whether through comics, parodies, or witty anecdotes, can significantly elevate student engagement levels (Pretorius et al., 2020). By injecting elements of humor into the learning process, educators can transform traditionally mundane topics into enjoyable and relatable experiences, thereby capturing students' interest and encouraging active participation (Daumiller et al., 2020).

Moreover, humor creates a conducive atmosphere where students feel more at ease expressing themselves and engaging in classroom discussions and activities (Tsakona, 2020). This contributes to cultivating a positive learning environment characterized by mutual respect, open communication, and collaborative learning. Recent research affirms enjoyable classroom material's significance in enhancing learning outcomes (Smith & Brown, 2022). For instance, a longitudinal study by Johnson (2023) demonstrated that students who reported finding their coursework interesting showed significant gains in comprehension and application of concepts over time. This highlights the importance of incorporating captivating content and teaching methods to facilitate more profound learning experiences. A study by Lee and Chang (2021) found that incorporating gamified elements into lessons increased student interest and improved concentration levels as students were more actively engaged with the material presented.

Theoretically, this study has delivered significant contributions to the current literature since fewer studies examine the effect of humor in the classroom, especially from the context of Malaysian higher learning institutions. The study has proved that lecturers must use humor to

communicate complex concepts effectively. These findings have been supported by previous studies such as Embalzado and Sajampun (2020), Pranoto (2021), and Weisi and Mohammadi (2023). The lecturers must improve lessons to capture students' attention, reduce distractions, and allow them to focus better on the content (Tsukawaki & Imura, 2020). The humor technique supports and promotes student-centered learning, and the lecturers need to be ready to accept creative and fun learning approaches (St-Amand et al., 2024). As practical implications, the lecturers must incorporate humor, such as comics or parodies, into teaching methods, which can significantly increase student engagement by making learning more enjoyable and relatable. Interesting topics or teaching methods spark students' curiosity, encouraging them to ask questions and seek further knowledge (Erdoğdu & Çakıroğlu, 2021).

However, not all lecturers can use humor while teaching because not all lecturers possess this trait (Brugman et al., 2023). Some lecturers are eager to joke with their students, but some are very serious when communicating. Students like lecturers who have a sense of humor and are approachable to everyone. An interaction followed by laughter will indeed stimulate the topic of conversation. The element of humor is one of an individual's natural traits or characteristics, but it can be done if carefully planned (Brugman et al., 2023; Embalzado & Sajampun, 2020). Although many studies have been conducted and found the element of humor as a factor that increases the effectiveness of teaching and learning, the element of concrete application and systematic involvement in the practice of humor has not yet been included in the lecturer training curriculum.

Therefore, the Ministry of Higher Education and university top management should pay attention to this practice and be able to express it in the training curriculum. More training and assistance should be provided for the lecturers. An example is providing training on formulating and illustrating cartoons or comics as teaching materials. Another example is training to shape and develop the lecturers' personalities to guide them in using appropriate and fun learning tactics in the classroom. Humor personality and approach can be developed based on continuous training, exposure, and experience. According to Attardo (2020), the rule of thumb for practicing humor is to include three to five jokes related to the lesson's content for every 50 minutes of teaching time. There are certain limitations to the use of humor in teaching and learning. One of them is to use it sparingly and to relate to the lesson's content. Several suggestions were provided, namely: 1) short and can be done in a few minutes, 2) used in a controlled manner, 3) general to all sociocultural, and 4) funny (Brugman et al., 2023). Integrating humor elements in teaching and learning sessions requires a lecturer's planning and abilities. Jokes should be chosen carefully, and jokes should be used as a teaching opportunity.

CONCLUSION

The main objectives of this study were to examine the level of humor in teaching and learning, student enjoyment, and student engagement in research classrooms. Moreover, it also aims to investigate the mediation effect of student enjoyment towards the relationship between humor in teaching and learning and student engagement. The study revealed that the students had a positive perception of the variables. Moreover, humor could help improve student engagement and enjoyment, strengthening the relationship between these variables. Lecturers are the main

driving force in implementing teaching and learning activities with students (Noor, 2023a). They should always generate knowledge and improve the quality of teaching to ensure students can master the required knowledge. This can be realized if the lecturer integrates fun and exciting learning methods, democratic classrooms, and appropriate motivational techniques (Embalzado & Sajampun, 2020). The character of the lecturers also plays a role in maintaining interest in the subject (Pranoto, 2021). Most students tend to feel bored when the lecturer needs to have a good character in the class, such as being too serious when teaching, having a low tone of voice, and having no tolerance for the students. The lecturers act as a learning guide, a motivator, and an interest trigger among students (Weisi & Mohammadi, 2023).

The researchers have identified several limitations. First, the data were collected cross-sectionally and analyzed based on the correlation between three measured variables. Cross-sectional studies are designed to provide correlated data that can be used to conclude population groups. Suppose there is a casual relationship in the population. In that case, the cross-sectional study cannot provide any information about the relationship but can only make the researchers see that the relationship exists for several reasons. Thus, future studies can employ a longitudinal study and expand the study model by including other variables such as course performance, student motivation, and demographic variables. This study sample size is limited and small. If a small sample is taken, the risk of error increases drastically because the results could be due to chance. Future studies could expand the data collection to a larger sample size.

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Conflict of Interest

The authors agree that this research was conducted without any self-benefits or commercial or financial conflicts and declare the absence of conflicting interests with the funders.

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Authors' Contributions

Nurul Hidayana, M. N., Amirah, M. F., & Nurshamimie, N. S. conceived and planned the research. Amirah, M. F. & Nurshamimie, N. S. contributed to interpreting the results. Nurul Hidayana, M. N. took the lead in writing the manuscript. All authors provided critical feedback and helped shape the research, analysis, and manuscript.