

HUMOUR AS A CATALYST FOR STUDENT ENGAGEMENT IN SUSTAINABILITY EDUCATION: EXPLORING ITS ROLE AND IMPACT ACROSS DEMOGRAPHICS

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Abstract: *The study examines the role of humour in sustainable education and examines its effectiveness as a predictor of student engagement. Sustainable education aims to equip learners with knowledge and abilities required to advance social justice, economic accountability and environmental stewardship. Although these subjects are crucial and sustainability praxis can often be perceived as overwhelming or complex, potentially leading to disengagement among students. This study investigates how humour can serve as a pedagogical tool to enhance engagement and learning outcomes in sustainable education. The impact of humour was also examined across various student's demographics like age and gender. Through a mixed-methods approach, involving surveys and classroom observations and interviews, this study analyses the impact of humour on student engagement, comprehension and retention of various concepts and application of those concepts in real life situations leading to sustainable education. The findings reveal that humour not only increases students' interest and attentiveness but also fosters a positive learning environment, reduces anxiety and encourages creative problem-solving. Moreover, humour was found to be a significant predictor of student engagement. The findings imply that humour can effectively enhance sustainable education by making learning more accessible and enjoyable, ultimately contributing to the development of critical thinking and proactive behaviours towards sustainability.*

Keywords: *Humour, Engagement and Sustainable Education*

INTRODUCTION

Humour has long been recognised as a powerful tool in education, capable of breaking down barriers and fostering a more inclusive and engaging learning environment (Garner, 2006; Wanzer et al., 2010). In the context of sustainable education, where complex and often daunting topics such as climate change, resource conservation, and social responsibility are discussed, humour can play a crucial role in maintaining student interest and involvement. By lightening the mood and making difficult concepts more accessible, humour helps to reduce the anxiety that often accompanies these discussions, encouraging students to participate more actively (Bryant et al., 1979; Ziv, 1988; Torok et al., 2004; Banas et al., 2011; Garner, 2006). Moreover, humour can bridge the gap between abstract theories and real-world applications, making sustainability concepts more relatable

and memorable. As educators strive to prepare students for tackling the pressing environmental and social challenges of our time, integrating humour into sustainable education can enhance engagement, foster creativity, and encourage a better comprehension of the subject matter (Fredrickson, 2001; Garner, 2006).

Humour, when thoughtfully incorporated into learning environments, can be a transformative element, especially in subjects that deal with complex and often overwhelming issues like sustainability. Sustainable education, which focuses on equipping students with the knowledge and skills to address environmental and social challenges, can sometimes feel abstract, technical, or even discouraging due to the gravity of the issues at hand (Sterling, 2001; Wals & Jickling, 2002). This is where humour steps in as a powerful pedagogical tool. By introducing humour into the classroom, educators can create a more dynamic and enjoyable learning

atmosphere. This not only helps capture students' attention but also sustains their engagement over time. Humour can make challenging concepts more digestible by simplifying difficult ideas, using analogies or jokes that students can relate to (Shatz & LoSchiavo, 2006; Wanzer et al., 2010; Banas et al., 2011). For instance, using a humorous analogy to explain carbon footprints or resource depletion can demystify these concepts, making them simpler to comprehend and recall.

One of the main advantages of humour in education is its ability to capture and maintain students' attention. In today's fast-paced world, where distractions are abundant, keeping students focused can be a daunting task. However, humour can act as a hook, drawing students into the lesson and maintaining their interest in the material being taught. A well-timed joke or a funny anecdote related to the topic can break the monotony, reinvigorating students' interest and making the classroom atmosphere more lively and engaging (Berk, 1996; Frymier & Houser, 2000; Leis et al., 2010). Moreover, humour creates an approachable classroom environment where students are more at ease sharing their ideas and asking questions. This openness can lead to deeper discussions and a more collaborative learning experience. When students don't fear failing or receiving criticism, they are more likely to indulge in critical thinking and problem-solving activities, which are essential in sustainability education (Ryan & Deci, 2000).

In addition to enhancing understanding and engagement, humour can also inspire creativity. By encouraging students to look at sustainability issues from different, often lighter perspectives, humour can prompt them to think outside the box and come up with innovative solutions to real-world problems. This creative thinking is vital in a field that requires fresh approaches and new ideas to overcome the significant challenges facing our planet. Ultimately, the role of humour in sustainable education is not just about making the learning process fun—it's about making it effective. By reducing stress, promoting engagement, and fostering a deeper connection with the material, humour fosters students who are not just well-informed but also motivated and equipped to take meaningful action towards a sustainable future.

LITERATURE SURVEY ON ROLE OF HUMOUR

Humour in the classroom has been the focus of a great deal of research, especially with regard to its impact on student engagement. The following literature survey

explores various other research studies that have examined the multifaceted role of humour in enhancing student participation, motivation and overall engagement.

One of the fundamental aspects of humour in education is its ability to act as a catalyst for student engagement. Torok, McMorris and Lin (2004), in their study *"Is Humour an Appreciated Teaching Tool? Perceptions of Professors' Teaching Styles and Use of Humour,"* discovered that students often perceive humour positively when used as part of teaching. The study indicated that humour can make lectures more enjoyable and engaging, helping to break the monotony and sustain students' attention. This positive perception of humour correlates with increased student participation and a greater willingness to engage with course material.

Humour has also been connected to cognitive engagement, where it plays a role in enhancing students' understanding and retention of complex concepts. Garner (2006) in *"Humour in Pedagogy: How Ha-Ha Can Lead to Aha!"* argues that humour can facilitate cognitive processing by presenting information in a more digestible manner. In order to facilitate deeper thinking and contemplation on challenging subjects, instructors can employ puns, analogies, or hilarious anecdotes that are relevant to the subject matter. This cognitive engagement strengthens students' connection to the subject, promoting an active learning environment.

Humour has a significant impact on emotional involvement as well. According to Fredrickson's "Broaden-and-Build Theory of Positive Emotions" (2001), pleasant emotions—like those evoked by humour—can expand people's perspectives and promote an inclusive learning environment. It has been found that when students are enjoying themselves or having fun in classroom, they are more likely to participate in class discussions and develop an emotional connection to the subject. Students become more motivated and committed in their learning process as a result of this positive feedback loop is created by their emotional engagement. Student engagement depends heavily on attention, and research indicates that humour can effectively draw and hold students' attention. In "Student Ratings of 10 Strategies for Using Humour in College Teaching," Berk (1996) noted that humour is a useful tool for drawing in students during lectures. According to the study, humour can help break up the monotony of lengthy lessons and refocus students who might have lost interest. Laughing can serve as a mental break that helps students absorb material and return to the class with fresh enthusiasm.

Several studies have highlighted the role of humour in reducing anxiety and fear of failure, which can otherwise hinder student engagement. Banas et al. (2011), in their review *“A Review of Humour in Educational Settings: Four Decades of Research,”* noted that humour helps alleviate the tension associated with learning challenging concepts. Humour helps to lighten the ambience in the classroom, allowing students to feel comfortable taking intellectual risks without worrying about making mistakes. Students who experience less anxiety are more likely to engage fully in discussions and problem-solving exercises, especially when the topics are ones that they may find scary. Moreover, humour encourages social interaction by creating a feeling of community in the classroom. Meyer (2000) in *“Humour as a Double-Edged Sword: Four Functions of Humour in Communication”* explores different ways in which humour can build social bonds and camaraderie among students. An increase in participation in group activities and cooperative learning projects may result from this sense of camaraderie. Students are more inclined to interact with their peers and participate to a group learning experience when they feel they are part of a cohesive unit. The role of Humour’s place in varied learning environments is a complex subject. Powell and Andresen (1985), in their work *“Humour and Teaching in Higher Education,”* emphasise the value of use of humour that is sensitive to cultural differences in order to prevent alienating students from diverse backgrounds. Humour, when utilised intelligently, can help reduce cultural gaps, promote inclusivity, and motivate students from all backgrounds to engage more fully. To guarantee that humour is an inclusive tool for participation, educators must be mindful of the range of ways by which humour might be interpreted. There is accelerated growth of research focused on role of humour in online learning environment, due to increasing popularity of online education. Shatz and LoSchiavo (2006) in *“Bringing Life to Online Instruction with Humour”* examines how humour can improve student participation in online courses. According to the study, humour can make virtual classrooms feel less impersonal by fostering a more engaging and entertaining learning environment. Even in the lack of physical presence, educators can foster a feeling of community and participation by integrating humour into their online lectures, discussion boards, and feedback.

Sustainability challenges require creative problem-solving and innovative thinking. McNaughton (2014) in *“Humour as a Pedagogical Tool in Environmental Education”* makes the argument that humour fosters creativity by encouraging

pupils to think creatively. Using humour in the classroom helps foster a more flexible and open learning atmosphere where students are encouraged to critically analyse, link seemingly unrelated topics, and explore new ideas. In sustainability education, where students are frequently expected to imagine other worlds and come up with creative solutions to challenging challenges, this kind of creative involvement is crucial. A major goal of sustainability education is to provide students the tools they need to take initiative. Wals and Corcoran (2006) in *“Sustainability as an Outcome of Transformative Learning,”* assert that in order for students to feel empowered to take action on environmental challenges, they must have transformative learning experiences. By shattering the barriers of formality and humanising the learning process, humour can help promote this empowerment. Students are more motivated to participate in conversations, take part in hands-on activities, and take ownership of their learning when they are not frightened of making errors or being evaluated. These behaviours are essential for helping students build agency in sustainability education.

Even while humour has been shown to increase student engagement, there may be some negative effects to take into account. In *“An Explanation of the Relationship Between Instructor Humour and Student Learning: Instructional Humour Processing Theory,”* Wanzer, Frymier, and Irwin (2010) warn that too much or inappropriate comedy might cause distractions from the learning goals or cause discomfort for certain students. As a result, teachers need to exercise caution when using humour, ensuring it is appropriate for the student body and the course material.

HYPOTHESES

H01: There is a significant relationship between humour and student engagement.

H01(a): There is a significant relationship between related humour and student engagement.

H01(b): There is a significant relationship between unrelated humour and student engagement.

H01(c): There is a significant relationship between self disparaging humour and student engagement.

H01(d): There is a significant relationship between other disparaging humour and student engagement

H01(e): There is a significant relationship between offensive humour and student engagement.

Research Question

RQ1: What role does humour play in sustainable education?

RQ2: How does humour enhance student engagement when teaching concepts related to sustainable education?

METHOD

Research Gap

While existing literature extensively explores strategies to improve student engagement and student learning outcomes in sustainable education, there is limited research focusing on the role of humour as a pedagogical tool in this context. Most studies on humour in education has focused on traditional subjects or general classroom engagement, paying little attention to its application in sustainability-related fields, which often deal with serious and difficult global concerns. Moreover, the interplay between humour and students' comprehension, retention and practical application of sustainability concepts remains underexplored. This gap emphasises the necessity for empirical research into the strategic integration of humour into sustainable education to enhance student engagement and encourage long-term behavioural change toward sustainability goals.

Objectives of Study

- To examine the role of humour in sustainable education.
- To investigate the relationship of humour and student engagement.

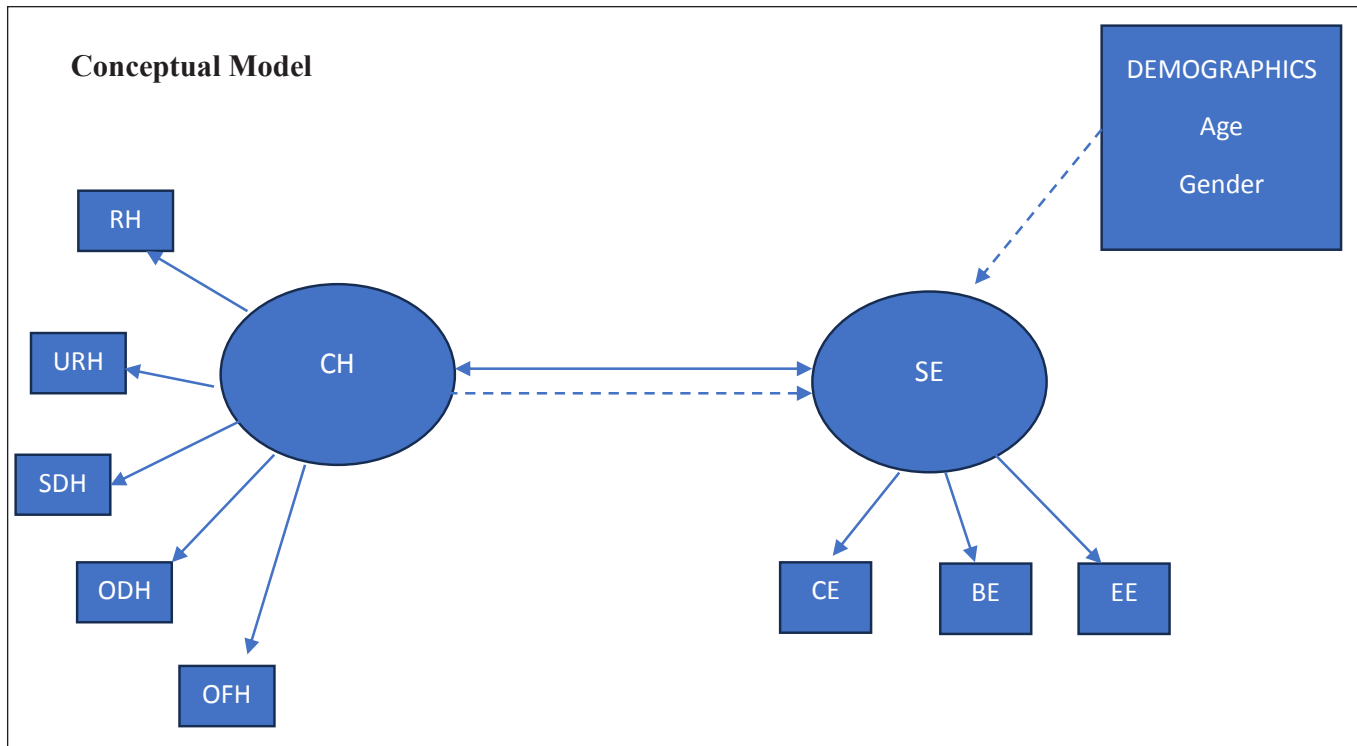
Research Design

This study is descriptive and correlational study. With the help of various mixed-methods such as surveys, classroom observations and interviews, the role of humour in sustainable education and its relationship with student engagement has been examined.

Research Instrument

Primary and secondary sources of data were used for obtaining the required data. For primary data, a survey was conducted in various public and private colleges of Chandigarh where sustainable education was part of their curriculum. Total population of students who were being taught with sustainability concepts were 650 students. Krejcie and Morgan (1970) tables for sample size determination suggests a sample size of 242, but for better generalisability questionnaires were distributed among 250 college students. Out of these, 234 complete questionnaires were received, resulting in a response rate of 93.6%. Further, outliers were removed resulting to total sample size of 200 college students. Data were collected during 3 months of their ongoing semester. Data were collected by converting questionnaire into Google Form. Then SPSS version 26 was used to record the data and analysis procedure. Both Qualitative and Quantitative Analysis was done in the study. The role of humour in sustainable education was measured by observations and coding the responses collected from various students in an interview. Thematic analysis was done to find out key roles mentioned by students from their given responses. Furthermore, to measure the relationship between humour and student engagement, the following instruments were used to collect data.

- *For Measuring Classroom Humour*: Teacher Humour Scale (Ann Bainbridge Frymier, Melissa Bekelja Wanzer & Ann M. Wojtaszczyk, 2008) was adopted consisting of 25 statements on 5 point - Likert Scale (Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, Strongly Disagree = 1). Reliability was checked with Cronbach alpha of .916, which indicates a good reliability of instrument.
- *For Measuring Student Engagement*: Student Engagement Scale (Selim Gunuc & Abdullah Kuzu, 2015) was adopted, consisting of 9 statements measuring Cognitive Engagement, 13 statements measuring Emotional Engagement and 7 statements measuring Behavioural Engagement on 5 point- Likert Scale (Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, Strongly Disagree = 1). Reliability was checked with Cronbach alpha of 0.954, which shows excellent reliability of given instrument.



RESULTS

Sustainable Education

Sustainable education is designed with the worthy goal of preparing individuals with necessary skills, information, attitudes and values to be useful in creating a better and sustainable future. It also involves understanding and addressing challenges about environmental, social and economic development specifically, such as over-exploitation, inequality, loss of biodiversity, and climate change. Moreover, apart from providing factual information on these topics, the purpose of sustainable education is also to instill moral judgment, critical thought, and other oriented learning that can lead to constructive outcomes.

Key Components of Sustainable Education

- Multidisciplinary Education:** Sustainable education places a strong emphasis on how social, economic, and environmental systems are intertwined. Students are encouraged to investigate these links between fields including physics, economics, sociology, and ethics. Students acquire a comprehensive outlook on sustainability issues by comprehending the interdependence of several elements.
- Ethical and Value-Based Education:** Education that is sustainable fosters ideals like justice, equity, and environmental stewardship. It fosters a sense of responsibility toward the environment and future generations by getting pupils to consider their own values and the ethical ramifications of their actions.
- Problem-Solving and Critical Thinking:** The main objective is to enhance students' capacity to evaluate sustainability concerns, pinpoint underlying reasons, and provide inventive alternatives. This entails involving students in problem-based learning, where they analyse evidence, work on real-world issues, and take into account other viewpoints.
- Lifelong Learning:** Sustainable education is viewed as a continuous journey rather than being limited to formal educational settings. It promotes constant learning and adjustment, understanding that sustainability issues change over time and call for continued participation and action.
- Empowerment and Active Participation:** It seeks to enable students to take an active role in building a sustainable future. This entails giving students a feeling of agency and motivating them to support sustainability, engage in community projects, and adopt sustainable practices in their daily lives.

Role of Humour in Sustainable Education

Humour can be a powerful tool in sustainable education by improving engagement, creating a supportive learning atmosphere, and making difficult or tough subjects easier for student's better understanding. Here's how humour can be effectively integrated into sustainable education:

Increasing Engagement and Attention

- *Making Learning Fun:* Humour can make learning fun, keeping students interested and engaged in the material (Dormann & Biddle, 2006; Wilhelm & Poirier, 2014; Sahin, 2021). This is particularly important when discussing sustainability topics, which can sometimes be perceived as overwhelming or dire.
- *Capturing Attention:* A well-timed joke or humorous anecdote can grab students' attention, making it easier to introduce or emphasise important concepts related to sustainability (Bryant & Zillman, 1979; Fry, 1992).

Facilitating Understanding of Complex Concepts

- *Simplifying Complex Ideas:* Humour can simplify complex sustainability concepts by turning them into more relatable or digestible content. For instance, incorporating humorous analogies or metaphors can help clarify abstract concepts and make them more understandable (Politico et al., 2025).
- *Encouraging Creative Thinking:* Humorous content can encourage students to think outside the box, fostering creativity in problem-solving and innovative thinking about sustainability challenges (Eliav, 2016; Gnevek, 2018; Martin et al., 2019).

Reducing Anxiety and Overwhelm

- *Creating a Safe Space:* Humour can help to relieve the anxiety that students may feel when discussing heavy or distressing topics, such as climate change or environmental degradation (Capps, 2006). It can create a more relaxed and open classroom environment in which students feel comfortable participating and expressing their views.

- *Balancing Seriousness with Light-Heartedness:* By incorporating humour, educators can balance the seriousness of sustainability issues with light-hearted moments, preventing students from feeling stressed or discouraged by the enormity of global challenges (Dixon, 2021).

Enhancing Retention and Recall

- *Improving Memory Retention:* According to research, people are more likely to recall information that is presented in a humorous way. Instructors can improve students' retention of important information by utilising humour (Fitzpatrick, 2010; Hackathorn et al., 2011).
- *Creating Memorable Experiences:* Humour can create memorable learning experiences that remain with students long after the lesson is over, helping them recall sustainable practices and principles when they are most needed.

Building Community and Encouraging Collaboration

- *Fostering a Sense of Community:* Humour can help to build a sense of community and camaraderie among students, encouraging collaboration and teamwork on sustainability projects (Banas et al., 2011).
- *Encouraging Open Dialogue:* A light-hearted approach can make it easier for students to express their ideas, ask questions, and engage in discussions about sustainability without fear of being judged (Frymier & Houser, 2000).

Promoting Positive Behaviour Change

- *Encouraging Reflection:* Humour can be a useful tool for encourage students to reflect on their own behaviours and attitudes towards sustainability. By gently poking fun at common misconceptions or unsustainable habits, educators can inspire students to reflect critically on their own behaviours and consider making positive changes.
- *Motivating Action:* Humorous content can be motivational, inspiring students to take action on

sustainability issues in a fun and engaging way, rather than out of fear or guilt (Torok et al., 2004).

Addressing Cultural Differences

- *Bridging Cultural Gaps*: Humour can transcend cultural differences and create a common ground for discussing sustainability. It can help educators navigate cultural sensitivities by using humour to address challenging or potentially contentious topics in a respectful and inclusive manner (Lu et al., 2019).

Best Practices for using Humour in Sustainable Education

- *Be Inclusive and Respectful*: Ensure that humour is appropriate, inclusive, and respectful of all students' backgrounds and experiences.
- *Align with Learning Goals*: Use humour strategically to reinforce learning objectives and key messages related to sustainability.
- *Avoid Overuse*: Balance humour with seriousness to maintain the credibility of the subject matter and avoid trivialising important issues.

By thoughtfully integrating humour into sustainability education, educators can create a dynamic and interactive learning environment that promotes a deeper understanding of sustainability and encourages meaningful action towards a more sustainable future.

Relationship of Humour with Student Engagement

Ann Bainbridge Frymier, Melissa Bekelja Wanzer and Ann M. Wojtaszczyk in their 2008 study, categorised humour

based on its types and effects on classroom environments. The following is the bifurcation of humour based on their study:

- *Related Humour*: Humour that is directly related to the subject matter being taught. It includes, puns, wordplay, or humorous examples that help explain or reinforce key concepts.
- *Unrelated Humour*: Humour that is not directly related to the subject matter or course content. This type of humour is more general and may involve personal stories, jokes, or anecdotes that are not tied to the lesson but are used to lighten the mood.
- *Self-Disparaging Humour*: Humour that involves making fun of oneself, often in a playful and light-hearted manner. This form of humour highlights the teacher's own shortcomings or mistakes, making them seem more approachable.
- *Offensive/Aggressive Humour*: Humour that can insult, alienate, or harm individuals or groups. It typically involves jokes, comments, or actions that are based on sensitive or controversial topics such as race, gender, religion, disabilities, or personal characteristics. While some people may find such humour funny, it often has negative consequences, especially in professional or educational settings.
- *Other-Disparaging Humour*: Humour that is hostile, sarcastic, or ridicules someone or something. This type of humour can target individuals, groups, or even oneself in a hurtful way.

To find the relationship between Humour and Student Engagement, Pearson correlations were computed of various types of humour with student engagement (see Table 1).

Table 1: Correlation Coefficients between Humour Types and Student Engagement

Pearson Correlation Coefficients	Related Humour	Unrelated Humour	Self-Disparaging Humour	Offensive Humour	Other-Disparaging Humour
Student Engagement	.411**	.185	-.130	-.479**	-.307**
N	200	200	200	200	200

N = 200: The number of participants or data points is 200.

p < .01**: This indicates a statistically significant correlation at the 1% level.

Interpretation of Correlation Coefficients

- Related Humour ($r = 0.411, p < .01$)
 - This is a strong positive correlation. It means that the more related humour (content-specific humour) is used, the higher the level of student engagement. This is a statistically significant relationship.
- Unrelated Humour ($r = 0.185$)
 - This is a weak, positive correlation, suggesting that unrelated humour (jokes not connected to the subject matter) has a minor positive impact on student engagement. However, this correlation is not statistically significant, indicating that the relationship might not be strong enough to be consistently relevant.
- Self-Disparaging Humour ($r = -0.130$)
 - There is a weak, negative correlation between self-disparaging humour (making fun of oneself) and student engagement. This suggests that using this type of humour may slightly reduce student engagement, but the relationship is not strong enough to be statistically significant.
- Offensive Humour ($r = -0.479, p < .01$)

- There is a strong, negative correlation between offensive humour and student engagement, meaning that the use of offensive humour greatly decreases student engagement. This is a statistically significant relationship, indicating that students are likely to disengage when offensive humour is used.
- Other-Disparaging Humour ($r = -0.307, p < .01$)
 - This is a moderate, negative correlation. Other-disparaging humour (making fun of others, excluding oneself) also reduces student engagement, and this relationship is statistically significant.

The above findings are supported by Wanzer et al., 2010; Banas et al., 2011; Torok et al. (2004); Garner (2006); Ziv (1988); Shatz and LoSchiavo (2005). These studies verified that content-related humour has the most significant positive relationship with student engagement as compared to unrelated humour which has moderately weaker relationship with engagement than related humour. Other studies like Frymier et al., 2008; Segrist and Hupp (2015); Banas et al. (2011); Torok et al. (2004) verified the negative relationship of offensive humour and disparaging humour with student engagement (Table 2).

Multiple Regression Analysis

Table 2: Model Summary with Student Engagement as Dependent Variable

Model	R	R Square	Adjusted R Square	Std. Error
1.	.411 ^a	.169	.165	11.399
2.	.465 ^b	.216	.208	11.099

a. Predictors: (Constant), RH

b. Predictors: (Constant), RH, ODH

Interpretation

Model 1 indicates a moderate positive correlation between the predictor (related humour, RH) and the outcome variable (likely student engagement), $R = .411$. Model 2 suggests that when adding Other Disparaging Humour (ODH) to the model, the correlation between the predictors and the outcome variable improves slightly. With $R^2 = .169$, means

approximately 16.9% of the variance in the outcome variable can be explained by the predictor related humour. With the addition of ODH, model shows a modest improvement in model's explanatory power, indicating the Other-disparaging humour also contributes to understanding variations in student engagement. The reduced standard error improved the predictive accuracy of the model (Table 3).

Table 3: Regression Coefficients with Student Engagement as Dependent Variable

Model	Unstandardised Coefficients		Standardised Coefficients	T	Sig	Collinearity Statistics
	B	Std Error	B			VIF
(Constant)	89.041	4.627		19.243	.000	
RH	1.135	.179	.411	6.349	.000	1.000
(Constant)	100.461	5.613		17.899	.000	
RH	.989	.179	.359	5.521	.000	1.060
ODH	-.462	.135	-.222	-3.415	.001	1.060

Interpretation

The Model 1 emphasises the importance of related humour in enhancing student engagement, with a significant positive effect. For every one-unit increase in related humour, student engagement is expected to increase by 1.135 units. This suggests that Related Humour has a significant positive effect on engagement ($B = 1.135$). $Beta = .411$, indicates that related humour is a meaningful and statistically significant ($p < 0.05$) predictor of student engagement with no issue of multicollinearity.

Model 2 suggests that, while related humour continues to positively impact engagement, the introduction of other disparaging humour reveals a concerning trend: disparaging

humour significantly decreases student engagement ($Beta = -.222$, $p < 0.05$). The overall data highlights that fostering a positive classroom environment through Related Humour is crucial, while disparaging humour should be avoided to prevent disengagement and maintain student interest.

Student's Demographics and Student Engagement

For better understanding the difference between various student's demographics like; Gender and Age, and their engagement, means were compared using various tools. For gender, an independent t-test was applied, and for age, ANOVA was applied. Results are shown below:

Independent T-Test Measure

Table 4

Student Engagement	Male		Female		t(198)	p
	M	SD	M	SD		
	4.0421	.38699	4.0705	.43507	-.266	.791

Table 4 shows the results of independent t test used to measure the mean difference in Male and Female students and student engagement. The results show difference in male and female student engagement in class but this difference is not significant as $t(198) = -.266$, $p > .05$. This

can be interpreted from results that every student either male or female shows similar level of engagement when humour is introduced in a sustainability classroom. As the mean is closer to 4 (Agree) which shows majority of students agrees that humour increases engagement in a classroom.

ANOVA Measure

Table 5

SE	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.136	2	.068	.364	.695
Within Groups	36.685	197	.186		
Total	36.820	199			

A one-way ANOVA was performed to compare the effect of humour on student engagement between different age groups. The results revealed that there was no statistically

significant difference ($F(2,197) = .364$, $p > 0.05$) between mean scores of student engagement between different age groups.

DISCUSSION

In summary, humour, particularly when it is relevant and positive, plays a crucial role in enhancing student engagement, including in the context of sustainable education. By fostering a supportive and engaging learning environment, educators can leverage humour to facilitate deeper understanding of complex topics, promote active participation, and inspire creativity in addressing pressing sustainability challenges. Conversely, avoiding disparaging humour is essential to maintain an inclusive atmosphere that encourages all students to contribute and thrive.

Implications to Educators

- *Inculcate Humour in Classroom:* Educators should encourage use of humour in classroom for better understanding, promoting creativity by creating flexible environment for students which can ultimately help in achieving sustainable education.
- *Promote Related Humour:* Instructors should incorporate Related Humour into their teaching strategies to boost engagement effectively.
- *Avoid Disparaging Humour:* Educators should be cautious about using humour that might disparage or offend students, as this can negatively impact engagement and create a hostile learning environment.
- *Monitor Engagement:* Continuous assessment of student engagement levels can help educators adjust their use of humour in the classroom to maximise positive interactions and learning outcomes.

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