

# Laughing engineering students: how to avoid pitfalls of jokes and how humour can have a supporting role in engineering education

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**Abstract**—Humour is a complex form of communication and engineering educators need to use it with care. This special session aims to explore, discuss, and deconstruct jokes, humour and laughter in engineering education, since humour can have both good and bad side effects in all forms of interaction. The goal of this session is to collectively reflect on positive and negative aspects of humour and how humour can work as an including element for some participants in the room, and excluding for others. We want to create thought-provoking discussions where we together consider areas for improvements on engineering education to make every student feel welcome.

**Keywords**—jokes, humour, laughter, engineering education

## I. INTRODUCTION

In this session we aim to explore, discuss, and deconstruct humour and laughter in engineering education. Humour is often seen as something positive [1, 2], connected to the emotion of happiness; who would not want to be ‘the funny teacher’? However, humour and laughter are ambiguous forms of communication. There are plenty of examples of people telling less suitable jokes, connected with sexism and racism [3, 4]. These types of jokes are not only ethically wrong but harmful for students’ learning. Likewise, students themselves can bring joy and laughter to the classroom, but if they use inappropriate humour, they can also contribute to constructing a toxic environment in which some students are likely to feel excluded or humiliated [5]. Clearly, humour is a complex form of communication, and we need to use it with care. The goal of this session is to reflect on positive and negative aspects of humour and how it may affect teaching, learning and inclusion in engineering education.

## II. HUMOUR AS A FORM OF COMMUNICATION

### A. Humour is related to norms

There is an established field of humour research where the definitions of humour vary, but there is widespread agreement among scholars that humour involves communication of multiple incongruous meanings [1]. Furthermore, humour plays a significant role in workplace interactions: it can perform positive functions, such as strengthening collegiality or softening an instruction or a criticism [4, 6]. However, according to Dunbar et al. [7], humour can also perform negative functions since individuals can use it to take control

of a conversation, criticize others, or exert dominance over others, see Tab.1 for an overview.

TABLE I. DIFFERENT FORMS OF HUMOUR IN INTERACTION (FROM DUNBAR ET AL., P. 480)

Positive humor	Negative humor	General humor
<ul style="list-style-type: none"><li>• Disagree (decrease impact of criticism)</li><li>• Compliment Self</li><li>• Self-disparaging/ Compliment partner</li><li>• Bonding humor</li></ul>	<ul style="list-style-type: none"><li>• Down-putting partner</li><li>• Down putting task or other</li></ul>	<ul style="list-style-type: none"><li>• Light humour<sup>a</sup></li><li>• Tension release</li><li>• Nonverbal humor</li><li>• Laughing along</li><li>• Other humor</li></ul>

<sup>a</sup>. Light humor = Puns, canned jokes, anecdotes, or playful comments

Dunbar et al. distinguish between canned jokes (as part of light humour) and other forms of humour in interaction, such as laughter. A canned joke is a specific form of humour, often described as consisting of a setup and a punch line, where the punch line suddenly shifts the meaning in an unexpected way. A canned joke is less conditional than other forms of humour because it can work across different settings without specific contexts. The nature of smiles and laughter on other hand are primarily rhetorical: ‘there is much that has to be learnt in order to accomplish culturally appropriate ways of producing the smile or the laugh’ ([1] p. 189).

Although jokes, laughter and humour are often viewed positively at a general level, humour is also related to the norms of any given social context and can thus be seen as having disciplining effects [1]. Berge’s study [8] of engineering students working together revealed that the students’ humour contributed to a good working atmosphere, but that it also reproduced local norms about how to talk physics or ‘stylistic norms of science’ [9]. Examples of such norms are avoiding colloquial forms of language, figurative language and metaphors when talking and to use technical terms instead. Students used laughter to indicate awareness of these norms, for example, when one of the students used

wrong terminology, figurative language, or metaphors. Hence, the students' laughter made the norms explicit in the conversation, in much the same way that emotional expressions can make norms and values explicit in sustainability education for engineering students [10].

Displaying awareness of taken-for-granted norms can also be a way for educators – as well as students – to position themselves as belonging to a discipline. For instance, in a study of physics lecturer's jokes, Johansson and Berge [11] found that celebrated subject positions were constructed through jokes. The 'celebrated physicist' (with high status) is very intelligent and very passionate, and his interest of physics is nerdy. In other words, jokes in physics lectures may create possibilities for students to identify with physics and as becoming physicists, while simultaneously strengthening existing stereotypes of who belongs in the discipline.

### B. Humour in engineering education

Like physics education, engineering education has its implicit norms and humour. Riley [12] has explored jokes about engineers to investigate the culture of engineering and to draw out 'some mindsets commonly found in engineering' (p. 33). The following four canned jokes [7] are examples from her book *Engineering and Social Justice*.

#### Joke 1: The Guillotine

*A lawyer, a priest, and an engineer are scheduled to be executed by guillotine. The lawyer goes first, the executioner pulls the cord, but nothing happens. "Double Jeopardy! You have to let me go!," cries the lawyer. And the executioner does. The priest is next, the same thing happens. "Divine Intervention! You have to let me go!," cries the priest. And the executioner does. The engineer is next. As the executioner gets ready to pull the cord, the engineer cries, "Wait! I think I see your problem . . ."*

#### Joke 2: The Church Steeple

*An engineer and a sociologist were tasked with finding the height of a church steeple. The engineer measured the angle to the top of the steeple and calculated the height using trigonometry. Then, to check the estimate, the engineer climbed to the top of the steeple, lowered a string until it touched the ground, climbed back down and measured the length of the string. The engineer compared the measurement to the estimate, calculated the standard error, and drafted a report documenting the methods and results. The sociologist bought the sexton a beer in the local pub and he told her how high the church steeple was.*

#### Joke 3: Mechanical vs. Civil

*A pastor (rabbi/imam/priest), a doctor, and an engineer were waiting one morning for a particularly slow group of golfers. Annoyed, they decide to ask the greens keeper, who explains that they are a group of blind firefighters who lost their sight fighting a fire in the clubhouse years ago, and they play for free whenever they want. The pastor remarked, "That's so sad. I'll pray for them." The doctor said, "I know an ophthalmologist who might be able to do something for them." The engineer said, "Why can't they play at night?"*

#### Joke 4: 'I Are an Engineer'

*Real engineers . . . have a non-technical vocabulary of 800 words.*

Riley uses these jokes to highlight the intersection of engineering culture and social justice. Aware that not all engineers fit into these stereotypes, she points out that these jokes portray the stereotypical engineer as very good at solving problems and eager to help other people solving their problems (Joke 1). The stereotypical engineer prefers also to use scientific methods to obtain new knowledge (Joke 2) and approaches problem solving in a very pragmatic way (Joke 3). Finally, engineers are portrayed as having difficulties with written and oral communication (Joke 4). We agree with Riley's in that these jokes may illustrate and reinforce ideas of what an engineer can be as well as norms of engineering. Unfortunately, we also see additional patterns in 'Riley's jokes': the engineer is portrayed as lacking emotions and as rather stupid.

### C. The importance of cultural contexts

Riley does not specify the cultural context in which the jokes were collected. However, given the general framing of her book, we assume the jokes were collected in the United States. Jokes' origins matter since perceptions of what is funny – and what is not – vary across the world due to cultural differences [1, 2, 3]. For example, in Turkey, it is common to joke about female engineering students by describing them as having moustaches [13]. This joke is an example of a *toxic joke* as it can be used to mock female students who are hardworking and do not 'care about their appearance' (p. 1194). According to Pehlivanli-Kadayifci this joke (that she does not approve of) has two symbolic meanings: (1) to symbolize masculine competence in Turkish culture and (2) to refer to 'dishevelled' female engineering students. We believe this joke would not even be perceived as funny in a Scandinavian context where equality discourses are very strong [14]. This exemplify how jokes are always conditional and telling the right joke at the right moment requires considerable cultural knowledge [2].

### III. SPECIAL SESSION AGENDA: EXPLORING ENGINEERING HUMOUR ACROSS CULTURAL CONTEXTS

Riley and Pehlivanli-Kadayifci have analysed canned jokes. Their analyses have generated important insights about how this commonly used type of jokes can shape engineering cultures and norms about who belongs or does not belong in engineering education. However, we believe it is even more important to investigate humour in interaction (see Tab. 1 for examples) and how they play out in engineering contexts, because we are less aware of the consequences of these forms of humour. In this special session we will therefore collaboratively examine various examples of humour in interaction that have been captured in video-data. We will discuss how humour can contribute to constructing engineering norms and cultures in these examples and how they may (or may not) translate to other contexts. The agenda for this session is as follows:

#### A. Introduction to humour in engineering education and interaction

We will begin the session with a short introduction to the field of humour research and how humour matters for us as engineering educators. We will emphasise that humour is a form of common knowledge in every culture: what counts as good humour differs from group to group and from moment to moment [2]. We will also discuss power issues related to jokes and laughter [1, 15, 16]. We will stress that, as educators, we are in a position of power vis-à-vis our students, and that we, therefore, we have a responsibility to use humour with

care when we interact with students. We will also discuss common humour patterns in teaching and learning situations.

#### B. Exploring participants' experiences of humour

After the introduction, participants will work in small groups, where they will share and explore their own experiences of humour and jokes in their classrooms. We will ask participants to discuss examples of both positive and negative humour. We will end this activity with a short debrief.

#### C. Collaborative analysis of humour in interaction

Next, we will analyse real cases of humour among engineering students. Participants will once again work in groups to discuss video-recorded empirical examples of humour in interaction. First, we will focus on *humour markers* [17], markers that show 'the audience' that the speaker is behaving non-seriously. An example of a humour marker is raised eyebrows, which works as a 'gestural trigger'. We will explore how the students use humour markers and how the markers affect the students' interaction. Second, we will analyse what is perceived as funny in the interaction and how this relates to engineering education and engineering cultures. Third, we will focus on power aspects related to humour [1], exploring who is laughing in the examples and who is not, and who has power and who has not. We expect that cultural differences among participants will result in different interpretations of the same situations. We will leverage participants' different understandings to render implicit norms and values visible and –thus – to develop a nuanced understanding of how cultural contexts can influence the meanings and effects of humour in engineering education.

#### D. Ways forward

We will end the session in plenum to share ideas, reflections and open questions. Most importantly, we will discuss how each of us can use humour in our own classrooms in a safe way, depending on our unique cultural, disciplinary and institutional contexts.

### IV. EXPECTED OUTCOMES

We expect that participants will develop a better understanding of the power and social consequences of jokes and humour in engineering classrooms. We also hope that participants will leave with concrete ideas for how they can use (or not use) humour to render their classrooms more inclusive and, thus, to empower diverse students to identify as future engineers – beyond common stereotypes of unemotional nerds who are good at solving problems.

Some participants may find the session challenging, both emotionally and analytically. However, we also believe it will be rewarding for participants to develop greater awareness of possible functions humour can have in engineering education. From our own experiences with video-analysis and research on humour and emotions, we also believe participants will have a lot of fun. Certainly, this special session will include most jokes of all sessions during the conference!

In future work, we plan to continue our research on engineering students' emotions [10] and develop our analysis

of laughter and laughter's connections to emotions among engineering students.

### V. SESSION FACILITATORS

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