

Enhancing Learning Outcomes and Motivation: The Benefits of Related Humor Over Self-Disparaging Humor in Primary Chinese Education

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Abstract

Chinese language instruction is a valued primary education component, and educators have consistently sought methods to enhance teaching efficacy. While research has documented the numerous benefits of humor in the classroom, its application in primary school Chinese language education remains relatively unexplored. This study examined the comparative effectiveness of two humor approaches—related humor and self-disparaging humor—employed by teachers in primary school Chinese classes. A within-subjects design was adopted, with 45 primary school students participating in two Chinese lessons taught by the same instructor using different humor styles. Learning outcomes (measured by test scores) and motivation (assessed through self-reported questionnaires) were evaluated following each lesson. Additionally, informal semi-structured interviews were conducted upon completion of both lessons. Results indicated that related humor outperformed self-disparaging humor in terms of learning outcomes, student motivation, and overall student perception. These findings suggest that the strategic integration of related humor holds significant potential for enhancing teaching effectiveness in primary Chinese education. Future research should delve deeper into the specific advantages and limitations of humor in this context.

Keywords: related humor, self-disparaging humor, primary education, Chinese teaching, learning outcomes, learning motivation

1. Introduction

The growing global influence of China's economy and culture has led to the popularity of Chinese language instruction at the primary level, both within China and abroad (Nel, Zhou, Krog, & Lebeloane, 2019). Beyond its cultural and linguistic connections, learning Chinese significantly contributes to primary students' personal development, fostering positive values, life perspectives, and core literacy (Li, 2023; Tam, Rong, Bullock, & Gardner, 2015; Wang, 2017; Zhang, Lu, & Yang, 2023). However, challenges such as a lack of student motivation (Glushkova, 2017) can hinder effective Chinese language teaching at this level. Research has consistently shown that learning motivation is a critical factor in achieving high academic outcomes in primary Chinese, reflecting students' positive attitudes and engagement (Zeng & Ehrich, 2024). Strong motivation empowers students to regulate their learning and actively participate in the educational process (Bai & Guo, 2021; Zhu & Mok, 2018). As a result, numerous studies have explored strategies to enhance student motivation and learning outcomes in primary Chinese language education (Chen, Jamiat, & Mao, 2023; Li & Chu, 2018).

Classroom humor, defined as teacher-initiated activities that elicit student laughter through various means such as witty commentary or humorous anecdotes (Petraki, Hoang, & Nguyen, 2016), has been shown to foster interactive learning environments and yield significant benefits for students, particularly in terms of motivation and engagement (Abraham et al., 2014; Embalzado & Sajampun, 2019). For instance, Tong and Tsung (2020) observed that the judicious use of humor in Chinese language teaching enhanced university students' motivation and participation. Extending these findings to the primary school context, Özkara (2013) suggested that humor can strengthen teacher-student relationships and cultivate a student-centered learning atmosphere. Csíkos, Biró, and Sztányi (2022) further supported

this notion, reporting that students develop more positive attitudes toward course content when humor is integrated. Given these advantages, researchers and educators advocate for the strategic use of humor in primary education to improve teaching effectiveness and student engagement (Lazzarich, 2013; Tay, Toh, & Cheng, 2023).

Teachers must carefully consider the appropriate use of humor in the classroom as hostile humor, such as disparaging students for amusement, is deemed irresponsible and constitutes an abuse of power (Wardman, 2021). Such aggressive humor can harm students, hindering their motivation and engagement in learning and communication (Bieg & Dresel, 2018). Research indicates that inappropriate aggressive humor in primary school negatively correlates with a positive classroom environment, diminishing students' enjoyment and participation (Tsukawaki, Imura, Kojima, Furukawa, & Ito, 2020). Consequently, teachers should prioritize affiliative humor to foster a positive classroom climate and abstain from using aggressive humor in primary education.

Teachers employ three primary humor strategies in the classroom: unrelated humor, self-disparaging humor, and related humor (Bieg & Dresel, 2016; Frymier, Wanzer, & Wojtaszczyk, 2008). While unrelated humor, such as telling a joke, can temporarily alleviate student anxiety and foster a relaxed atmosphere, it may also detract from learning by diverting attention from course content (Pekrun & Linnenbrink-Garcia, 2012; Bieg, Grassinger, & Dresel, 2017; Machlev & Karlin, 2017). Conversely, self-disparaging humor, where teachers playfully mock themselves, challenges traditional teacher stereotypes, creating a more informal and approachable classroom environment (Wanze, Frymier, Wojtaszczyk, & Smith, 2006). This approach often enhances student social emotions, enjoyment, and motivation (Bieg & Dresel, 2018; Bieg et al., 2017).

Distinct from previously discussed humor approaches, related humor serves as a pedagogical tool to enhance concept comprehension and material explanation, exemplified by using humorous clinical cases in medical education (Liu et al., 2017). Research consistently demonstrates a correlation between related humor and increased student enjoyment, leading to heightened engagement (Bieg, Dresel, Goetz, & Nett, 2022; St-Amand, Smith, & Goulet, 2023). By incorporating related humor, instructors can boost student interest, motivating active participation (Bieg, Grassinger, & Dresel, 2019; Masek, Hashim, & Ismail, 2019). Moreover, the alignment of humorous content with course material facilitates deeper understanding through elaboration (Wanzer, Frymier, & Irwin, 2010). Consequently, the integration of related humor not only enhances motivation but also contributes to improved perceived and actual learning outcomes (Celik & Gundogdu, 2016; Tsukawaki & Imura, 2020).

Despite the documented benefits of using humor in education, research has primarily examined its efficacy in university classrooms. While the positive impact of humor on undergraduate learning suggests its potential to enhance motivation and outcomes in primary school Chinese classes, further investigation is warranted in this context. Undergraduate and primary school students possess distinct perceptions and understandings of humor (Machlev & Karlin, 2017), necessitating tailored approaches. Moreover, previous studies often rely on self-reported learning outcomes (e.g., Masek et al., 2019; Tsukawaki & Imura, 2020), which may not accurately reflect actual learning gains (Horzum, Kaymak, & Gungoren, 2015). Machlev and Karlin (2016) demonstrated that humor can improve perceived learning without corresponding improvements in grades, highlighting this discrepancy. Furthermore, given that teachers prefer to spontaneously use content-irrelevant humor (Sahin, 2021), the effects of self-disparaging humor, a commonly used but understudied technique, remain largely unexplored. Consequently, our understanding of the impact of different humor approaches in primary classrooms is limited, hindering effective implementation of humor-based teaching strategies.

The present study investigated the impact of appropriate humor on primary school students' Chinese language learning. Given children's lower level of executive function, which can lead to increased distractibility compared to adults (Gunnars, 2024), we focused on related humor and self-disparaging humor to mitigate the potential negative effects of unrelated humor on student engagement and focus. After implementing whole-class instructional interventions using these humor approaches, we assessed student learning outcomes, collected self-reported motivation data, and conducted interviews to gather subjective opinions. In the related humor condition, teachers incorporated humor directly connected to the lesson content (e.g., to clarify concepts), while in the self-disparaging humor condition, humor was unrelated to the content but based on the teacher's personal experiences (e.g., sharing a funny anecdote). We drew on the Instructional Humor Processing Theory (IHPT, Wanzer et al., 2010) to anticipate the benefits of related humor on learning outcomes and leveraged research on social relationships and motivation (e.g., Wentzel, 1998) to posit the advantages of self-disparaging humor on learning motivation. This study specifically aimed to test the following hypotheses:

Hypothesis 1: Primary school students will achieve better learning outcomes in Chinese class when teachers employ related humor compared to self-disparaging humor.

Hypothesis 2: Primary school students will exhibit higher learning motivation in Chinese class when teachers use self-disparaging humor compared to related humor.

2. Method

2.1 Design and Participants

The present study employed a within-subjects design to conduct a quasi-experiment in authentic Chinese classroom settings. We designed two Chinese lessons, each approximately 40 minutes, with differing humor styles: related humor relevant to the lesson content and self-disparaging humor related to the teacher's experiences. The lessons were taught by a same female teacher, and the teaching process was identical for both lessons except for the humor condition. Following each lesson, we used a learning motivation questionnaire and a learning outcomes test to examine learning motivation and learning outcomes. A one-day interval separated the lessons, and an informal semi-structured interview was conducted post-experiment (see Figure 1). A total of 45 participants (26 males) aged eight to nine from an ordinary second-grade class were randomly selected in a Chinese primary school as participants, and were compensated with little gifts for their participation after the interview.

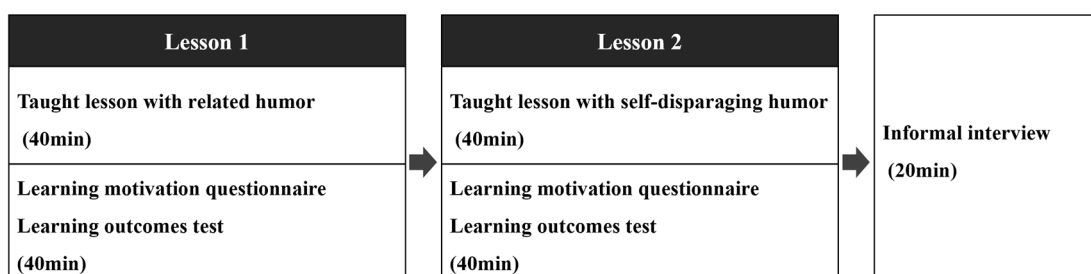


Figure 1. Experimental Protocol

2.2 Materials

Two lessons were selected from the Chinese textbook for this grade level, both in the form of fable stories: "Hanhao Bird" and "What I want is a gourd". These lessons share a similar structure in which a profound truth about the meaning of life is conveyed through a brief narrative. The content and instructional design of both lessons were jointly examined by two experienced primary school Chinese teachers to ensure their appropriateness and consistency. To assess the perceived difficulty of the lessons, they were taught to another second-grade class prior to the formal experiment; students reported that the two lessons were equally challenging.

Recognizing the potential pitfalls of overused humor, such as hindered learning and diminished teacher authority, our lesson design incorporated three strategically placed instances of humor per lesson (Wanzer, Frymier, Wojtaszczyk, & Smith, 2006; Ziv, 1988). The type of humor varied to maintain student engagement. In the first lesson, "related humor" created a connection to the topic. The teacher might start with a comical imitation of a bird's call, prompting students to identify the bird. For vocabulary recall, the teacher could use humorous puzzles like "what happens if you meet a knife on the way there" to introduce the word "却" (què) and its meaning. Finally, during reading instruction, the teacher might playfully act out the part of the bird according to the text, further solidifying the connection between the story and the learning objectives. In the second lesson, "self-disparaging humor" fosters a more personal connection between the teacher and students. The teacher might begin by sharing a funny anecdote from their own school life. When introducing new vocabulary, the teacher could share a childhood embarrassment caused by confusing words like "慢" (màn, slow) and "漫" (màn, long and extensive). Finally, during reading instruction, the teacher could lighten the mood by discussing a funny incident from a reading competition, creating a sense of shared experience and camaraderie within the classroom.

2.3 Measurements

2.3.1 Learning outcomes test

Two experienced primary school Chinese teachers collaborated to create two parallel tests assessing participants' learning outcomes from two distinct Chinese lessons. Both tests comprised identical question types, quantities, and difficulty levels, encompassing word pronunciation discrimination, character writing based on pronunciation, and reading comprehension. Each correct response was awarded points, while incorrect answers received zero points, with

a maximum attainable score of 25 for each test. The tests corresponding to the related humor lesson and the self-disparaging humor lesson demonstrated high reliability (Cronbach's alpha = 0.984 and 0.986, respectively) and exhibited satisfactory split-half discrimination ($t(44) = 6.14, p < 0.001$; $t(44) = 8.03, p < 0.001$).

2.3.2 Learning Motivation Questionnaire

We adopted the intrinsic motivation scale from a self-reported questionnaire designed to assess primary school students' learning motivation (Shu, 2022). The six items measured participants' enjoyment, interest in learning, learning for the purpose of thinking and mastering, desire to learn, effort exerted to acquire knowledge, and perceived importance of learning habits and attitudes. Participants rated each item on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The Cronbach's alpha for the learning motivation questionnaire employed in the two lessons was found to be 0.984 and 0.986, respectively.

2.3.3 Interview outline

Given that structured interviews can be perceived as formal and potentially intimidating for primary school students, we opted for an informal, semi-structured interview approach to encourage open and honest expression of their thoughts (Shu, 2022). The interview aimed to elicit participants' subjective opinions about the two lessons in relation to two key aspects: first, their most impressive part of each lesson and their enjoyment of the humorous classroom environment; second, their preference between the two lessons, including their reasons for this choice.

3. Results

3.1 Learning Outcomes and Motivation

To test differences in learning across the lessons with different humor approaches, two paired samples *t*-test were conducted on learning outcomes and learning motivation respectively, with Humor Approach (related humor vs. self-disparaging humor) as the within-subjects factor. Effect sizes were measured by Cohen's *d*, with $d = 0.2$ considered a small effect, 0.5 a medium effect, and 0.8 a large effect (Cohen, 1988).

The results showed the significant differences in learning outcomes and learning motivation across two conditions (see Figure 2, $*p < .05$, $**p < .01$, $***p < .001$; *MD* is the mean difference between conditions). When learning in the related humor lesson, participants achieved higher scores of learning outcomes ($MD = 1.44, t(44) = 6.46, p < 0.001, d = 0.96$) and self-reported higher learning motivation ($MD = 1.93, t(44) = 7.70, p < 0.001, d = 1.15$) compared to learning in the self-disparaging humor lesson. The results were accorded with our first hypothesis but against our second hypothesis, that related humor was more effective and produce more motivation than self-disparaging humor in primary Chinese education.

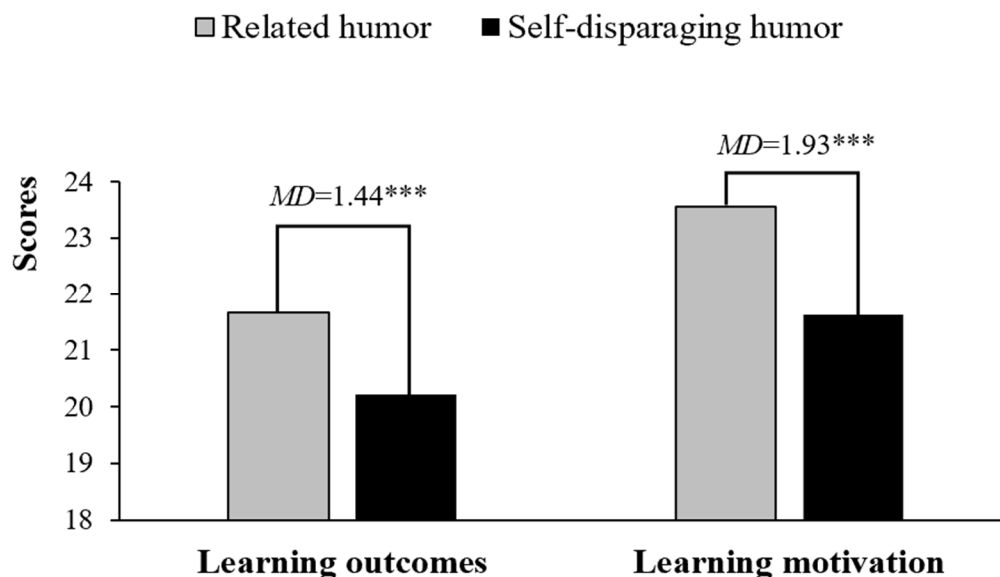


Figure 2. The Learning Outcomes and Motivation Across the Two Lessons

3.2 Subjective Opinions in the Interview

The results of the informal semi-structured interviews supported the educational benefits of humor, especially related humor, in primary school Chinese classes. According to participant responses, over ninety-three percent favored using humor in lessons by their teachers, and they were highly impressed by the humor employed. They suggested that teachers of other subjects could similarly incorporate humor and that the frequency of humorous elements in class could be increased. Importantly, when asked about their preferred lesson, approximately ninety percent of participants expressed a preference for the first lesson, which incorporated related humor. This preference stemmed from the belief that humor associated with learning materials enhanced comprehension and memory of course content. Conversely, they recalled humorous anecdotes rather than course content when the teacher shared personal experiences. Overall, participants showed general interest in humor-infused lessons and considered related humor a more effective approach than self-deprecating humor. Exemplar responses from three interview participants are provided below:

Participant A: *In the lessons of "Hanhao bird" and "What I want is a gourd", I were impressed by the humor attempts of our teacher. The teacher mimicked the Hanhao bird when we read paragraphs, it helped us understand the mind of roles in an entertaining method. Besides, I also remembered the shared story about her confusion between the word "慢" and "漫" by mistake, it encouraged us not to be afraid to make mistakes.*

Participant B: *We rarely had this kind of interesting class. Other teachers usually spoke on the platform and the class were strict, we had never raised our hands so actively to participant in class activities. I thought our teacher could use more humor in class, and there could be more similar humorous class in other subjects.*

Participant C: *I preferred the lesson of "Hanhao bird". Because the humor attempts of our teacher were all relevant to content in our text book, particularly using humorous puzzles to introduce new words. I believed I had remembered more words knowledge by such method, whereas I were better impressed on teacher's funny experiences in another lesson.*

4. Discussion

This study investigated whether related humor or self-disparaging humor would be more beneficial to primary school Chinese class. The results indicated that students achieved better learning outcomes and reported higher motivation when exposed to related humor than self-disparaging humor. Importantly, this is the first study to compare the effects of related and self-disparaging humor on actual academic performance and motivation within the context of primary school Chinese teaching.

Learning outcomes differed significantly between the conditions, with primary school students demonstrating superior performance in Chinese classes incorporating related humor compared to those employing self-disparaging humor. This finding aligned with the majority of previous research indicating the superiority of related humor over other appropriated humor types in terms of learning outcomes (Kaplan & Pascoe, 1977; Tsukawaki & Imura, 2020). The positive emotions elicited by humor enhance our focused attention on humor-related information, thereby facilitating improved encoding and recall of its details in memory (Lujan & Dicarlo, 2016; Purzycki, 2010). Related humor, directly connected to course materials, channels students' cognitive processing towards learning content, whereas self-disparaging humor diverts attention to the teacher. As students reported in interviews, they recalled more lexical knowledge when teachers humorously introduced new words in the first lesson compared to being impressed by teachers' interesting experiences in the second lesson. Moreover, the conceptual link between related humor and course content provides additional contextualization for knowledge and serves as a scaffolding mechanism (Deneire, 1995), thereby enhancing primary school students' meaningful construction and learning performance, a critical aspect of primary education (Sun, Ruokamo, Siklander, Li, & Devlin, 2021). Furthermore, comprehending humor requires resolving incongruity, demanding additional cognitive load that may compete for memory resources initially allocated to instructional information (Bolkan & Goodboy, 2018; Kim & Vishak, 2008). Since related humor is integrated with course materials and presented concurrently with content, it does not induce additional cognitive load (Hu, Lefton, & Ludovice, 2017). Consequently, related humor emerges as an efficient method for improving learning outcomes in primary school students, considering their limited working memory capacity during childhood (Chen, Castro-Alonso, Paas, & Sweller, 2018).

We also found a significant difference in learning motivation between the related humor condition and the self-disparaging humor condition. Despite primary school students expressing a desire for both types of humor in class according to the interviews, they self-reported higher motivation when learning in a class containing related humor compared to self-disparaging humor in the questionnaire. The effects of related humor on motivation in the present study coincided with prior findings that using humor associated with course content can motivate students to

engage in the learning process (Masek et al., 2019; St-Amand et al., 2023). However, self-disparaging humor did not produce as many advantages as related humor in terms of making students interested and motivated, which was inconsistent with previous conclusions about their similar effects (Bieg & Dresel, 2018; Luo & Zhan, 2021). This result contradicted our expectation that self-disparaging humor would better motivate students by increasing their intimate emotional interaction with teachers and subsequently positively influencing their motivation (Wanzer et al., 2010; Wu, Huang, Chen, & Chen, 2023). This inconsistency might be attributed to differences across studies in terms of presenting related humor, as it can be delivered through teachers (e.g., oral explanation, Ziv, 1988) or materials (e.g., integrated with the text, Bolkan, Griffin, & Goodboy, 2018). In the present study, we presented related humor through the teacher's verbal and nonverbal behaviors rather than a single verbal or textual channel as in other studies. These social instructional actions likely encouraged students' efforts and enhanced their motivation because they experienced preferred interaction with the teachers during whole-class teaching (Gillies, 2006; Sajjad, Khan, Yasmeen, & Waqas, 2023). This might have mitigated evidence of the expected benefits of self-disparaging humor relative to related humor. Additionally, the related humor helped students perceive the clarification of course content and enhanced their expectation of mastering knowledge, thereby increasing motivation (Bieg & Dresel, 2018; Dresel et al., 2014). This finding supported the notion that both social interaction and the expectation of success contribute to learning motivation for primary school students (Fielding-Wells, O'Brien, & Makar, 2017; Zhou, Ntoumanis, & Thøgersen-Ntoumani, 2019), both of which were incorporated into the humor attempts related to course content.

In summary, the results of this study favor the Instructional Humor Processing Theory in the context of primary Chinese teaching, suggesting that teachers should utilize humor related to course content. Indeed, humor must enhance students' ability to engage in elaborative processing to facilitate learning outcomes rather than merely serving as entertainment. Moreover, related humor fosters increased student motivation due to its dual function of clarification and social interaction. In other words, compared to self-disparaging humor, related humor promotes a more active and constructive learning process in primary school Chinese education.

5. Limitations and Further Directions

The present study has several limitations that could be addressed in future research. First, the humor frequency employed in our experiment may not have been optimal for primary education. We implemented three instances of humor per class, which aligned with Ziv's (1988) suggestion for university classrooms. While there is no definitive conclusion regarding the optimal humor frequency in primary schools, it is evident that secondary school teachers utilize humor with differing frequencies compared to university instructors (Javidi et al., 1988; Neuliep, 1991). It can be inferred that whether teachers' humor frequency aligns with the needs of primary school students may influence the effectiveness of different humor approaches. For instance, previous research has indicated that university students may become bored if teachers overuse unrelated humor in class (Bieg et al., 2017; Machlev & Karlin, 2017). Given students' desire for increased humor in class, further investigation is warranted to explore the interplay between humor quantity and classification in influencing learning outcomes in primary Chinese classrooms.

Secondly, our design precluded separating the effects of humor from the benefits derived from teacher-student interaction. Literature indicates that teachers can enhance teaching effectiveness by motivating and engaging students through positive interactions (Durksen et al., 2017). Consequently, the positive impact of related humor on motivation might be amplified by students' perception of interaction, facilitated by teachers' humorous behaviors, potentially overshadowing the interactive advantages of self-disparaging humor. While humor can be integrated into materials for university-level independent learning to mitigate the influence of teacher interaction (e.g., Erdodu & Akrolu, 2021), this approach was not feasible in the context of primary education. Future research should continue to explore the effects of different humor approaches under conditions of balanced interaction. For instance, incorporating humor into materials while maintaining teacher guidance in primary classrooms could provide valuable insights.

Third, we did not strictly differentiate between verbal and nonverbal forms of teacher humor. This limitation arose because self-disparaging humor could be presented orally (e.g., recounting an embarrassing story), while related humor necessitated teachers' language and actions to align with course content (e.g., role-playing). Previous research has primarily focused on humor in verbal or textual formats, with limited exploration of humor conveyed through teachers' actions. Given that teachers' nonverbal behavior is a critical communicative skill for motivating student engagement (Sajjad et al., 2023), future research should examine and compare the effects of different humor approaches delivered verbally and nonverbally.

6. Conclusions and Implications

In the present study, we compared the differential effects of related humor and self-disparaging humor in the context of primary school Chinese language learning. To our knowledge, this is the first study to investigate the disparities between these two humor approaches in a primary educational setting. Previous research on humor in the classroom has focused on university students, with limited exploration of the academic outcomes of self-disparaging humor. Specifically, we confirmed the superior efficacy of related humor compared to self-disparaging humor, as evidenced by the results of both learning outcomes and motivation. The findings of this study advance our understanding of the impact of related and disparaging humor on the efficiency of primary school Chinese language teaching.

Our findings hold profound implications for teachers seeking to effectively incorporate humor into primary school Chinese classrooms. Firstly, employing humor as an instructional strategy is beneficial as students prefer such classrooms and perceive their teachers as approachable and engaging figures, rather than as serious and distant authorities. Consequently, teachers are strongly encouraged to utilize humor, such as humorous commentary on learning materials or sharing personal anecdotes. These tactics foster stronger connections with students and cultivate a motivating, friendly classroom environment that promotes active learning and participation. Secondly, generating humor relevant to the course content is a more strategic approach. Related humor provides supplementary clarification of learning materials and facilitates a cognitive link between humor and knowledge, enhancing students' elaboration, comprehension, and motivation. Moreover, the positive impact of related humor on material clarification further significantly amplifies students' learning motivation compared to introducing unrelated personal anecdotes. In other words, teachers are heartened to create more humor that is aligned with the course content, in order to spark primary school students' enthusiasm for learning and maintain their focus on the core educational objectives.

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Authors contributions

Weichen Zhou was responsible for study design and data collection, and drafted the manuscript. Jun Choi Lee reviewed and revised it. All authors read and approved the final manuscript.

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