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Relational Teaching Behaviours in the Large University Class: An Observational Study

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Relational Teaching Behaviours in the Large University Class: An Observational Study

Abstract
Larger class sizes in higher education can generate many challenges for educators, notably increased negative student evaluations of teaching. This study suggests that one strategy for countering some of the shortcomings of the large classroom is to take a relational teaching approach. We coded the relational communication behaviours of professors teaching in large in-person classrooms and found that encouraging participation as well as having a relaxed body position were most prevalent among instructors with typically high course evaluation ratings. In addition, correlations between relational teaching behaviours and students' course evaluation reports found that instructors with the highest scores were more likely to make eye contact and to smile. We argue that relational teaching behaviours may have an impact on students' perceptions of teaching quality. These findings provide insights into more effective relational teaching in the large class, in particular demonstrating that the most prevalent relational teaching behaviours are not necessarily the most important or effective.

L'augmentation de la taille des classes dans l'enseignement supérieur peut engendrer de nombreux défis pour les éducateurs, notamment une augmentation des évaluations négatives de l'enseignement par les étudiants. Cette étude suggère qu'une stratégie pour contrer certains des défauts des grandes classes est d'adopter une approche d'enseignement relationnelle. Nous avons codé les comportements de communication relationnelle des professeurs qui enseignent dans de grandes salles de classe en personne et nous avons constaté que le fait d'encourager la participation et d'avoir une position corporelle détendue était le plus fréquent chez les enseignants dont les évaluations de cours étaient généralement élevées. En outre, les corrélations entre les comportements pédagogiques relationnels et les rapports d'évaluation des étudiants ont révélé que les enseignants ayant obtenu les meilleures notes étaient plus susceptibles d'établir un contact visuel et de sourire. Nous soutenons que les comportements pédagogiques relationnels peuvent avoir un impact sur la perception qu'ont les étudiants de la qualité de l'enseignement. Ces résultats permettent d'envisager un enseignement relationnel plus efficace dans les grandes classes, en démontrant notamment que les comportements d'enseignement relationnel les plus répandus ne sont pas nécessairement les plus importants ou les plus efficaces.

Keywords
relational teaching, large class, teaching evaluation, student-instructor relationships, observational study; enseignement relationnel, classe nombreuse, évaluation de l'enseignement, relations étudiants-instructeurs, étude d'observation

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University enrolment has increased dramatically over the last two decades. Exacerbated by ever-tightening budgets, many post-secondary students find themselves in classrooms alongside hundreds of other students, especially at the introductory undergraduate level (Usher, 2022). In Canada, total university enrolments were steady throughout the 1990s, but rose by 65% between 2000 and 2020, from just over 850,000 to 1.4 million (Government of Canada, 2022). This growth in enrolment, combined with financial pressures, leads many institutions to respond by increasing class sizes (Kara et al., 2021). Although there is no universally accepted definition of "large class," there is some consensus: under 30 students is a small class; 40 to 100 is considered medium size, and large classes range from 100 to 150 students (Denker, 2013). Additionally, the term "mega classes" has been used to conceptualize classes with more than 200 students (Ograjenšek & Gal, 2018). Larger class sizes can generate a number of challenges for educators, and there is growing evidence of negative student course evaluations as a result (Karas, 2021).

Challenges of the Large Classroom and Student Evaluations of Teaching Quality

Researchers have identified numerous challenges for educators generated by larger classes. These include increased cheating (McCabe & Trevino, 1993, 1997), low attendance (Denker, 2013), incivility (Alberts et al., 2010; Carbone, 1999), and less interaction with students (Wulff et al., 1987). Students are also more distracted, subject to passive learning processes and less motivated to learn, have less access to instructors, and feel an increased sense of anonymity, all of which leads to poorer learning outcomes, performance and retention (Carbone & Greenberg, 1998; Denker, 2013; Iaria & Hubball, 2008). It is not surprising then to find that students have an overall sense of dissatisfaction with the experience of large classroom learning (Carbone, 1999).

In addition to teaching quality, a related concern for large class instructors is growing evidence these challenges lead to negative student course evaluations (Bedard & Kuhn, 2008; Karas, 2021). Student evaluations of teaching (SETs) are commonly used by university administrators to monitor teaching and learning quality, and make promotion and tenure decisions, and thus have real world implications for professors (O'Donovan, 2023; Spooren et al., 2013). SETs are intended to serve three main purposes, namely improving teaching quality, providing appraisal input, and as evidence for institutional accountability (Spooren et al., 2013). Scholars have also suggested they can be useful in providing feedback to instructors; motivating them to make changes; evaluating student satisfaction; providing information to help students make course selections; and giving students agency for change (Balam & Shannon, 2010; Marsh, 2007; Spooren et al., 2013).

SETs have also been widely criticized for not being a reliable or valid measure of teaching quality; instead representing opinions about a number of unrelated factors (Heffernan, 2022; Spooren et al., 2013). They often discriminate based on characteristics of the professor such as gender, race, appearance, and sense of humour (Adamson et al., 2005; Heffernan, 2022); and are further biased by student's age, gender, academic discipline and cultural backgrounds (Heffernan, 2022). Despite these criticisms, many researchers maintain SETs provide some insight into an instructor's teaching effectiveness and quality (Marsh, 2007; Spooren et al., 2013). Furthermore, while alternatives have been discussed (Daumiller et al., 2022; Gomes & Ma, 2020; Pineda & Steinhardt, 2023; Tomes et al., 2019) there are no other universally accepted approaches for evaluating teaching quality (Kulik, 2001); moreover, SETs are often the only indicator of teaching quality used in most university settings (Cunningham-Nelson et al., 2019).

The Importance of Relational Teaching

One strategy for countering the shortcomings of large classrooms is a relational teaching approach, which may directly impact students' perceptions of teaching quality. Communication in teaching is often examined through two complementary lenses, known as rhetorical/relational goal theory (Hosek & Houser, 2018; Myers, 2006; Richmond et al., 2006; Young et al., 2013). As a rhetorical process, teaching goals focus on content, and use functional strategies such as clarity, organization, reason, credibility and logic, to effectively impart information and facilitate student learning (Beebe & Mottet, 2009). Alternatively, relational teaching focuses on interpersonal behaviours that help build, develop or improve the instructor's relationship with students (Aspelin, 2020; Beebe & Mottet, 2009; Ljungblad, 2022; Mottet & Beebe, 2006), taking into account students' emotions, feelings and well-being, and creating positive working relationships. It has long been established that positive student-instructor relationships yield beneficial student outcomes including academic success (Parnes et al., 2020; Teven, 2001; Tinto, 1993); greater student satisfaction (Bell, 2021), increased confidence about course content (Ryan et al., 1998); enhanced learning (Nussbaum & Scott, 1980); decreased levels of anxiety (Andriate, 1982); a more positive student experience (Rocchi & Lennox-Terrion, 2022), program completion (Witt et al., 2014) and less engagement in plagiarism or cheating (Stearns, 2001).

For the purposes of this study, relational teaching comprises several communication concepts relevant to classroom context, including rapport, confirmation, affinity seeking and immediacy. Clearly, these concepts are important to furthering the Scholarship of Teaching and Learning (SOTL) and thus are the focus of this paper.

Rapport refers to the ability to build relationships based on "an overall feeling of mutual trust and respect between two people" (Young et al., 2013, p. 336). This can include messages encouraging interaction between professor and student, and showing the instructor can relate to students by demonstrating caring, personal interest, excitement and enjoyment in engaging with them. Rapport messages create a positive and supportive environment (Young et al., 2013) and have been found to be the best predictor of teacher evaluations scores (Richmond et al., 2006).

Confirmation messages "assure us of our worth" (Young et al., 2013, p. 336), and occur when professors demonstrate common interests, promote interaction, and create a positive atmosphere (Ellis, 2000). This includes behaviours like inviting students to ask questions, answering those questions, using positive tones of voice, encouraging participation or anything else acknowledging the student as valuable in the classroom environment (Young et al., 2013).

Affinity-seeking includes behaviours that create a sense of liking between the relational partners. Coined by Bell & Daly (1984), it refers to active communication strategies used by individuals to get others to like them and view them positively. The pair developed a typology of 25 affinity seeking behaviours—including altruism, trustworthiness, sensitivity supportiveness, optimism, openness and facilitating enjoyment which have been refined for use in the classroom context to increase teachers' likeability (Frymier, 1994; McCroskey & McCroskey, 1986. Research has demonstrated many of these behaviours, for example eliciting others' disclosures, and demonstrating optimism, dynamism or altruism, are used by instructors at all classrooms levels to generate positive perceptions in students (Gorham et al., 1989; McCroskey & McCroskey, 1986; Roach, 1991). The use of affinity-seeking strategies is generally associated with positive perceptions of professor credibility (Frymier & Thompson, 1992) and competence (Prisbell, 1994), and in creating a positive learning climate (Frymier, 1994; Richmond, 1990).

Immediacy reflects the tendency for people to be drawn toward things they like and avoid things they dislike (Mehrabian, 1971). Immediacy behaviours are cues between people interacting with one another, or interactants, that indicate openness, approachability, availability and attentiveness (Andersen et al., 1979). In an instructional context, to achieve "teacher immediacy" means to establish a sense of perceived closeness with students (Ge et al., 2019; Richmond et al., 2017; Richmond & McCroskey, 2000). This can be accomplished through verbal behaviours, such as using humour, addressing students by name, engaging in conversation, calling on students or sharing personal anecdotes (Gorham, 1988), or nonverbal behaviours, like reducing the physical distance between interactants, increased touch or eye contact, smiling or nodding, spending time with the other person, relaxed body language and vocal expressiveness (Mehrabian, 1968, 1971; Richmond et al., 2003). Teacher immediacy has been linked to positive student outcomes such as increased motivation and improved performance (Comadena et al., 2007; Frymier, 1994; Kearney et al., 1988; Richmond & McCroskey, 1992), and has also been correlated with positive student evaluations (Moore et al., 1996).

It's important to note, although one may be more prevalent, teaching behaviours are not exclusively verbal nor exclusively nonverbal. Rapport can include verbal messages inviting participation or questions, as well as nonverbal cues like smiling, laughing or eye contact to demonstrate interest and attention. Likewise, teacher confirmation could include answering students' questions, or making eye contact with them. Affinity seeking might take the form of verbally eliciting others' disclosures, or it could be demonstrated by simply listening. Immediacy can include nonverbal indicators like gesturing, eye contact and standing close to others, but also recognizes verbal indicators like telling jokes, addressing students by name or sharing personal anecdotes.

The Need to Observe Relational Teaching in the Large Class

Some relational teaching behaviours, for example eliciting others' disclosures or making eye contact, may be relatively easy to enact where one-on-one interaction is easily achieved, but become more difficult as class sizes grow. These challenges may account for students' preferences for smaller classrooms (Carpenter, 2006), as well as the weaker course evaluations in large classrooms (Karas, 2021). Despite evidence that teaching effectiveness and student satisfaction tend to decrease as class size increases, large class sizes in university settings are likely to continue, thanks to their economic efficiency (Denker, 2013). This underscores a need to better deliver this teaching modality. The challenges outlined above, including lack of proximity, contact and access; distraction; passive learning; and increased anonymity, mean that content-centred rhetorical teaching strategies may be easier to implement. However, given they have been shown to improve the motivation of both instructors and students (Beebe & Mottet, 2009), we suggest one way to reduce negative consequences and improve the student experience of large class learning is to focus on relational teaching.

Research Objectives

The aim of this observational study is twofold. The first objective is to explore how highly rated professors of large classes use relational teaching strategies, such as rapport, confirmation, affinity-seeking, and immediacy in the classroom. The second objective is to explore the relationship between these behaviours and students' formal course evaluation reports.

To that end, our research questions are as follows:

RQ1: Which observable verbal relational teaching behaviours are most prevalent in instructors of large classes who have received positive student evaluations?
RQ2: Which observable nonverbal relational teaching behaviours are most prevalent in instructors of large classes who have received positive student evaluations?
RQ3: Which, if any, verbal relational teaching behaviours are positively associated with student course evaluations?
RQ4: Which, if any, nonverbal relational teaching behaviours are positively associated with student course evaluations?

Methodology

Data collection was conducted over two semesters at a large, research-intensive university in a major Canadian city. A sample of professors identified as excellent instructors in the large classroom context were videotaped for the duration of a live in-person lecture, and their behaviour was coded according to elements of verbal and nonverbal relational teaching behaviours. These coded data were then correlated with course evaluation reports to evaluate relationships between observed relational teaching behaviours and student ratings of teaching quality.

Participant Selection Process

For the purposes of this study, and in alignment with current literature, we operationally defined a large class as those having 100 students or more. To be eligible for this study, participating instructors had to be teaching a large class during one of the two semesters of data collection. To identify possible candidates, we identified courses taught during the previous academic year with more than 100 students enrolled, to generate a preliminary list of large class instructors. We narrowed candidates in this pool to those who had previously taught their respective courses, and thus had received student evaluations. These course evaluation reports were then analyzed to identify professors meeting the teaching excellence criterion, which we defined as having an average score of 4.0 out of 5 or greater on the seven formal evaluation items measuring overall teaching quality (see measures for details).

Participants

An invitation was sent to candidates who met both the inclusion criteria for teachers of large classes and who had previously been rated highly in teaching quality (n = 31). From these, 7 professors accepted but were ineligible because their class enrolment during the data collection period was fewer than 100 students, 3 accepted but were unable to schedule a recording, 5 were on leave during the research period, 1 had left the university, and 1 refused to participate. The final research sample thus consisted of 14 professors, with an average age of 46.13 (SD = 8.63), including 10 males and 4 females teaching either in sciences/math (n = 8, 57%) or in social sciences/arts (n = 6, 43%). The professors were full-time faculty (n = 11, 79%) or part-time professors (n = 3, 21%). All had completed a Ph.D., and most had never taken a formal pedagogy training course in their career. They had an average of 15.00 (SD = 8.55) years of university teaching experience and had taught an average of 74.75 (SD = 50.16) university courses each.

Of the 14 classes observed, 4 occurred during the fall semester, and 10 during the winter semester, across 8 subjects: biochemistry, chemistry, classical studies, economics, history, law, mathematics, and psychology. The average class size was M = 242.77 students (SD = 93.04), with a minimum of 108 students and a maximum of 396 students.

Procedure

A research assistant attended a 1.5-hour lecture of the participating professors' choice and recorded the lecture using a video camera and tripod, ensuring minimal possible disruption. Although the recordings focused exclusively on the professor, students were informed of the data collection process and purpose of the study. The recordings took place during the middle of the term (weeks 4 –9; n = 8, 57%), or at the end of term (weeks 11 – 13; n = 6, 46%). Video footage of the lectures was then analyzed by a team of coders. All procedures were approved by our institution's Research Ethics Board (file # 07-13-01B).

Measures

It is important to note that many of the scales used to measure indicators of relational teaching behaviours have overlapping items. If a professor tells a joke, for example, it could be considered using sense of humour to create rapport or it could be understood as facilitating enjoyment as an affinity-seeking strategy. A rapport message of demonstrating care can also be seen as an affinity-seeking indicator of showing empathy or eliciting self-disclosure, while responding to student questions positively (confirmation) could also constitute conversational rule-keeping (affinity seeking). Relational teaching strategies are also neither exclusively verbal nor nonverbal. While affinity seeking has most often been studied in the context of verbal messages, and immediacy most often studied in the context of nonverbal behaviours, affinity seeking is not an exclusively verbal behaviour, nor immediacy an exclusively nonverbal behaviour. The same is true of rapport and confirmation, which can include both verbal and nonverbal indicators. Moreover, nonverbal immediacy is itself considered an affinity seeking strategy (Bell & Daly, 1984).

As such, for this study we combined elements from four previously validated scales and measures to derive our coded indicators (6 verbal and 6 non-verbal). The key source materials are described below.

Verbal Indicators

In creating the verbal indicators section of our coding sheet, we relied on Young et al. (2013) for the underlying framework, which considers relational communication messages across the three categories of rapport, confirmation and affinity-seeking. We then identified previous validated scales and measures within each category. For indicators of *rapport*, we relied on Frisby and Martin's (2010) 11-item measure of perceptions of student-instructor rapport, adapted from Gremler and Gwinner's (2000) model for customer-employee rapport, both of which measure the dimensions of enjoyable interaction and personal connection. For indicators of *confirmation,* we used Ellis' (2000, 2004) validated 16-item *Teacher Confirmation Scale.* For indicators of *verbal affinity seeking*, we turned to Bell and Daly's (1984) affinity-seeking typology, further validated within the instructional context by Frymier and Houser (2000). Using these three measures, we

compiled an aggregated list of verbal indicators of relational communication, eliminated those not relevant in the post-secondary classroom context, and grouped the remaining items into 6 observable indicators (Table 1).

Table 1

Coded Verbal Indicators

Indicator (Broad)	Message	Indicator (Specific)
Knowledge of the other	"I know you and you know me" OR "I want to know you and I want you to know me"	Relating to students
		Disclosing personal information
		Pointing out similarities
		Elicit others' disclosure
Caring for the other	"I care about you, and you care about me"	Influence perceptions of closeness
		Showing empathy
		Demonstrating personal caring for students
		Acknowledging students as 'valuable' to the classroom atmosphere
		Altruism
		Self-Concept Confirmation
		Supportiveness RE: 3rd parties
		Trustworthiness
Enjoyment	"I enjoy being here, and I want you to enjoy it too"	Optimism
		Indicating excitement to see students
		Using a sense of humour
		Facilitating Enjoyment
Class management	"I manage class in an efficient way"	Conversational rule-keeping
		Assuming Control
		Conceding Control
		Reward association
Participation	"I want you to participate in class"	Responding to student questions positively
		Encouraging participation / engagement (includes asking for student questions)
Image	"I manage my image to enhance immediacy"	Appearance
		Personal autonomy
		Present interesting self
		Comfortable Self

Nonverbal Indicators

For measures of nonverbal relational teaching cues, we have chosen to rely primarily on Richmond et al.'s (2003) authoritative nonverbal immediacy scale (NIS) to build the nonverbal indicators section of our coding sheet. We excluded the 13 negatively worded items, and also removed item #2 ("I touch others on the shoulder or arm while talking to them"), deemed unfitting in the context of university teaching in a large classroom. The remaining 12 positively worded items were then grouped into 6 observable indicators (see Table 2).

Table 2
Coded Nonverbal Indicators

Indicator	NIS Item
Making Eye Contact	#17 and #22
Smiling	#25
Having a relaxed body position	#6
Gesturing to accentuate verbal communication	#1 and #13
Moving closer to conversational partner	#10, #16, and #21
Dynamism	#12, #14, and #19

Teaching Evaluation Reports

Each professor's official course evaluation report was examined to obtain a measure of teaching quality[1]. These reports are standardized forms completed by students during the 10th and 11th weeks of their semester and are available approximately 1 month after the course is finished. For this study, the following five items rated the specific teaching characteristics scored on a Likert scale from 1 to 5 (where 1 is *almost never* and 5 is *almost always*): 1) "I find the professor well-prepared for class"; 2) "The professor's teaching is stimulating"; 3) "The course is well-organized"; 4) "I think the professor conveys the subject matter effectively" 5) "The professor's expectations of students for this course are clear." Two additional items rated the quality of the professor ("I find that the professor as a teacher is…") and the quality of the course ("Overall, I find the course…") on a scale of 1 to 5 (where 1 is *very poor* and 5 is *excellent*). Questions relating to course logistics or personal student experience were excluded, as they did not directly relate to the professor's teaching quality, and were more likely to be influenced by departmental culture and course topic. An overall score was calculated for all retained questions, where higher scores constitute more positive student evaluations.

[1] Reprinted with permission from the Office of the Vice Provost, University of Ottawa, to use the publicly available SET data.

Coding

Coders received a training session presenting the measures used and reviewing the coding sheet. Coders were instructed to look for both verbal and nonverbal indicators in the videotaped lectures and document occurrences. For *verbal indicators*, coders were instructed to note every occurrence of verbal messages corresponding to these strategies by using a timestamp and a verbatim quote. The number of occurrences of each type of verbal affinity-seeking messages was subsequently summed to obtain a frequency count for each grouped theme. In addition to counting specific instances of nonverbal behaviours, coders were also asked to provide a global rating of the professor for each of the six *nonverbal indicators* (eye contact, smiling, relaxed body position, gesturing to accentuate, moving closer, and dynamism) during the lecture as a whole, using the same 5-point rating scale (where 1 is *never* and 5 is a*lways*) proposed by Richmond et al. (2003) for the original scale, where a higher score indicates a higher prevalence of the behaviour.

Following the training session, the two coders and the trainer ran a practice coding session with one of the videotaped lectures to validate the coding procedure. Correlations between pairs of ratings of the lecture showed evidence of high agreement: coder1\trainer = .96, coder2\trainer = .95, coder1\coder2 = .99. The overall Kappa measuring inter-rater reliability was scored at .897. After the training session and practice session, the remaining lecture recordings were split randomly between each coder for analysis.

Results

Preliminary Analyses

Basic descriptive statistics for the main study variables are presented in Table 3. To rule out course-related confounding variables, preliminary analyses compared all averages for the main variables by course topic (sciences/math vs. social sciences/arts) and semester (fall vs. winter); no statistically significant differences were found.

Prevalence of Verbal Indicators

Our first research question asked which observable verbal relational teaching indicators are most prevalent in instructors of large classes who have received positive student evaluations (RQ1). Our analysis shows that *participation* messages (M = 13.64) were the most prevalent verbal indicators.

Table 3
Descriptive Statistics for Main Study Variables

Variable	Number of Occurrences			
	Min	Max	*M*	(*SD*)
Verbal Indicators				
Knowledge of the other	0	3	0.79	0.98
Caring for the other	0	12	3.29	3.38
Enjoyment	0	25	6.50	7.65
Class management	0	6	1.00	1.66
Participation	1	39	13.64	11.15
Image	0	2	1.07	0.62
Nonverbal Indicators				
Making eye contact	2	5	3.79	0.89
Smiling	1	5	2.93	1.21
Having a relaxed body position	3	5	4.21	0.70
Gesturing to accentuate verbal communication	2	5	3.93	0.73
Moving closer to the conversational partner	1	4	2.86	1.03
Being dynamic	1	5	3.50	1.16
Teacher Evaluations				
Well prepared	4.80	4.96	4.88	0.05
Stimulating	4.06	4.77	4.46	0.22
Course is well-organized	4.39	4.82	4.55	0.12
Conveys subject matter effectively	4.12	4.82	4.52	0.20
Expectations are clear	4.13	4.62	4.40	0.13
Professor as a teacher is…	4.16	4.78	4.55	0.21

A repeated-measures analysis of variance (ANOVA) was carried out to examine the prevalence of verbal relational teaching messages. Before carrying out the main analysis, Mauchly's test of sphericity suggested that basic statistical assumptions for the data were not met. As such, and in light of the small sample in this dataset, the Lower-bound correction was applied

to the results of this analysis and suggested that some relational teaching messages were more prevalent than others ($F_{(1.000,\ 11.000)} = 8.85$, $p = .013$, $\eta^2 = .45$). More specifically, post-hoc tests using the Bonferroni correction revealed that "Participation", was by far the most frequent type of message used by professors in the sample, significantly more than "knowledge of the other" ($\Delta 12.85$, $p = .048$), "class management" ($\Delta 12.64$, $p = .030$), and "image" ($\Delta 12.57$, $p = .049$). There was no statistically significant difference between "Participation" and "Caring for the other" ($\Delta 10.35$, $p = .261$), or "Enjoyment" ($\Delta 7.14$, $p = 1.000$), nor were there any significant differences between other pairings.

Prevalence of Nonverbal Indicators

Our second research questions asked which observable nonverbal relational teaching indicators are most prevalent in instructors of large classes who have received positive student evaluations (RQ2). Our analysis shows that *having a relaxed body position* messages ($M = 4.21$) was the most prevalent nonverbal indicator.

Ratings of nonverbal immediacy were compared using a repeated-measures ANOVA and the Lower-bound correction was also applied. The results revealed the presence of significant differences among the ratings of nonverbal indicators ($F_{(1.000,\ 11.000)} = 5.24$, $p = .043$, $\eta^2 = .32$). Bonferroni post-hoc tests suggested that "smiling" ($\Delta 1.28$, $p = .005$) and "moving closer to the conversational partner" ($\Delta 1.35$, $p = .004$) were significantly less common than having a "relaxed body position." Although the latter was the most prevalent nonverbal behaviour, it was not statistically different from "making eye contact," "gesturing," and "being dynamic."

Relational Teaching Behaviours and Evaluations

Our third and fourth research questions asked which, if any, verbal (RQ3) and nonverbal (RQ4) relational teaching behaviours are positively associated with student course evaluations. The use of verbal relational teaching messages and ratings of nonverbal indicators were correlated with teacher evaluations using zero-order Pearson coefficients. Our analysis showed there were no statistically significant relationships between the prevalence of verbal relational teaching messages and teacher evaluations (RQ3). Significant relationships with large effects, however, were found between nonverbal ratings and teacher evaluations (RQ4). In particular, teachers evaluated as being more stimulating by students were also rated as making more eye contact ($r_{(13)} = .59$, $p = .033$) and smiling more ($r_{(13)} = .70$, $p = .008$). In addition, teachers evaluated by students as more effectively conveying the subject matter were also rated as making more eye contact ($r_{(13)} = .57$, $p = .042$) and smiling more ($r_{(13)} = .69$, $p = .010$). Finally, making more eye contact ($r_{(13)} = .61$, $p = .027$) and smiling more ($r_{(13)} = .68$, $p = .010$) led to higher scores on the excellence rating scale in student evaluations ("The professor as a teacher is …"). All other correlations between nonverbal indicators and teacher evaluations were statistically non-significant.

Discussion

This study aimed to describe and compare the prevalence of both verbal and nonverbal relational teaching indicators based on observed recorded behaviours in a sample of large class instructors, and to assess whether either are positively correlated with student course evaluations. Our findings showed that our sample of highly rated large class professors tend to verbally

encourage participation along with displaying relaxed nonverbal body language. More significantly, while we saw no correlation between verbal relational teaching indicators and student course evaluations, we found those professors who were scored higher by students on course evaluations had a higher prevalence of smiling and making eye contact.

Encouraging Participation

Encouraging participation appears to be perceived as important within our sample, given the frequency with which they employed this verbal relational message. The professors mostly encourage participation by asking students questions or inviting them to comment. Rocca (2010) argues that an instructor's communicative behaviours are critical in influencing student participation. In particular, students are more likely to participate if their instructor is warm, respectful, and positive. Research in educational motivation has also tied this style of supportive teacher communication to students' motivation, where positive behaviours are associated with higher quality motivation for learning (Pelletier & Rocchi, 2016).

While a student's ability to participate might be impacted in a large class, encouraging participation is one relational teaching behaviour that is not negatively influenced by class size. Instructors can ask students questions and encourage discussion, ask for questions from students, and ask students to think about the course content and to complete certain tasks, regardless of class size. Encouraging participation may also reduce the sense of anonymity experienced by some students in large classes, thus encouraging better behaviour and a more positive attitude (Carbone, 1999; Knepp, 2012; Miller et al., 2014).

Body Language

The most frequently observed (non-statistically different) nonverbal behaviours in our sample included having a relaxed body position, dynamism, gesturing and eye contact, which give an impression of feeling comfortable and energetic, and conveying enthusiasm for the subject matter. Research on speech anxiety has suggested that rigidity, such as lack of gestures, and tense face, arms and hands (Mulac & Sherman, 1974), are indicative to audiences of nervousness, tension, and a lack of credibility. In their study of those who avoid or are afraid of interaction, Burgoon et al. (1990) found communication behaviour that is more stiff and rigid, which could be perceived as "expressing non-intimacy, detachment, and submissiveness [while also reducing] credibility and attraction" (p. 127). Instructors who appear tense or stiff, lack dynamism and energy, and do not gesture may be communicating undesirable traits, which can translate into negative classroom dynamics and, ultimately, course evaluations. In the large class, where students may be physically distanced from their instructor, it might be more challenging to show a relaxed and dynamic posture. However, instructors who move around, come out from behind the podium, convey energy and enthusiasm, use hand gestures, and appear to be enjoying themselves are likely to be perceived more positively by students.

Eye Contact and Smiling

These findings reflect the relational teaching behaviours most frequently observed within this sample of large classroom professors; however, they provide no information on whether these behaviours influence how students score instructors on course evaluation reports. In correlating

the observable behaviours displayed by our sample of professors with their respective SETs, our results suggest that students favor instructors who make more eye contact and smile more. These findings build on classic literature which suggested that in face-to-face communication (in North America), those who make eye contact are viewed as confident and outgoing (Argyle & Dean, 1965), as well as more credible and charismatic (Beebe, 1974; Burgoon et al., 1990; Richmond & McCroskey, 1992). In addition, looking directly at students shows interest in them (Kleinke, 1986) and in how they are understanding (or not) the lecture. It also permits instructors to monitor and regulate their classes while simultaneously signaling warmth, attentiveness, and immediacy more easily (Andersen & Andersen, 1987). Additionally, because eye contact reduces anonymity in the large classroom (Swinney et al., 2010), recognizes and values students and makes them feel that the professor is aware of their presence, it may encourage them to reciprocate the attention that has been paid to them.

Our findings also connect with classic literature on smiling. Research on the universality of some facial expressions such as smiling (Ekman, 1971) suggests that when professors smile, they are likely perceived as communicating that they are happy. This conveys they enjoy the teaching experience, which would be positively perceived by students. Smiling also serves a social function, conveying important information about relational expectations or desires of the smiling person towards other people. As such, smiling and other signs of warmth, approachability and immediacy are how instructors show they like and care about their students (Andersen & Andersen, 1987). In addition to serving an affinitive function, smiling further influences perceptions of teacher competence, credibility and character. While teachers might not need to be liked to be effective, people are more likely to pay attention and learn from those they like, rather than those they dislike (McCroskey & Young, 1981). In the large class, physical distance makes it more difficult to see a smiling face at the front of a classroom; however, research has found these behaviours are perceived even at far distances (Smith & Schyns, 2009). As such, smiling may have an added impact in the large classroom setting because even students at the back of a classroom can perceive it.

Limitations and Future Research

This observational study is a preliminary look at relational teaching behaviours of professors in large classrooms and provides interesting insights into the effectiveness of simple acts like smiling and making eye contact. There are, however, important limitations as it relates to sample size and course evaluation reports. Specifically, this study relied on a limited sample; a larger number of professors would be required to generalize these results. Furthermore, a larger sample could also help identify some best practices for teachers and opportunities for teacher training.

Further, we relied on student evaluations of teaching (SETs) as an indicator of teaching quality, even though they have been widely criticized for their effectiveness and reliability. If a more universally accepted approach for evaluating university teaching quality is developed, these results should be replicated using that indicator. For example, three approaches that have garnered attention in recent years are peer observations of teaching (POT) (Bell & Thomson, 2018; Cutroni & Paladino, 2023), multi-source evaluations (Berk, 2018) and teacher self-reports on teaching (Daumiller et al., 2023). POTs involve identifying peers who are qualified to evaluate and provide feedback on teaching to review the range of skills involved in teaching, such as course design, student assessment, syllabus construction, lecturing and student feedback. Given the holistic nature

of this approach, it provides more thorough and less biased information and can be used to both evaluate and improve a professor's instructional abilities. Similarly, multi-source evaluations, such as 360-degree feedback models, are holistic and multi-dimensional, with feedback coming from multiple evaluators including students, peers, and supervisors. Teacher self-report, finally, involves instructors evaluating their own behaviour using validated scales. Daumiller et al. (2023), in their study of this tool, found that self-reports serve as sensible indicators of overarching teaching quality in higher education.

Future research could build on this work by exploring cultural differences, in terms of classroom diversity as well as between students and instructors, given that they may influence expectations and outcomes of student-instructor relationships. As Frisby et al. (2017) found in their study of instructor–student rapport, American students reported significantly more rapport with their instructors while Turkish students reported significantly more participation in the classroom. Research should further explore the cultural differences in teaching behaviours and related student outcomes. Lastly, this study looked only at large classes given in person. Technological developments are constantly changing the university teaching context. Because of the COVID-19 pandemic, there have also been fundamental shifts toward online and bi-modal learning. It is possible these technologies and modalities can help professors and students overcome some of the challenges inherent in large classrooms. Conducting similar studies of relational teaching behaviour in both online and blended learning environments would help better understand how these technologies can assist professors of large classes in connecting with students.

Conclusion

In recent years, instructional communication research has emphasized the importance of student-centred learning approaches, where knowledge is co-created rather than simply transmitted by professors (Jonassen & Land, 2012), arguably creating a better learning environment. Although large university classrooms are becoming increasingly prevalent, implementing student-centred approaches that rely on relational teaching strategies can be challenging. Moreover, the results of this study suggest the most prevalent relational teaching indicators—encouraging participation, having a relaxed body position, gesturing and being dynamic—are not necessarily the behaviours that result in the most positive student feedback, which represent teaching quality to some extent. In fact, results suggest the simple acts of smiling and making eye contact were more important, even though these were not the most frequently observed behaviours.

The results of this study provide interesting insights into relational teaching in large classes, demonstrating the most prevalent relational teaching behaviours are not necessarily the most important or effective. Moreover, as the model of large university classrooms continues to evolve, thanks to unprecedented shifts toward online and bimodal variations that can accommodate even larger class sizes, this study provides preliminary insight to build on for future research. This paper provides a practical and optimistic view of the practices that any instructor can add to their repertoire of teaching behaviours. We believe that relational teaching contributes to "empathetic teaching" (McCollum, 2021) and thus contributes to the co-creation by students and instructors of "meaningful experiences" in the large classroom.

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