Fostering Students' Active Participation in Higher Education: The Role of Teacher-student Rapport

By Ana Bardorfer[*]

The concept of teacher-student rapport is a relatively new concept that pertains to one of the factors in the classroom setting that promotes learning. It enhances the classroom atmosphere and promotes the well-being of students. The objective of our study was to examine the predictive value of teacher-student rapport in higher education on students' active participation in class. The study included a total of 1,682 students who were enrolled in classes taught by 50 instructors across three Slovene public universities. Self-reported measurements to assess teacher-student rapport (Instructor-Student Rapport Scale; Bardorfer & Kavčič, 2020), teachers' effectiveness (Student Evaluation of Educational Quality Scale; Marsh, 1982), autonomously regulated behaviour of students (The Self-Regulation Questionnaire-Academic; Ryan & Connell, 1989) measured by the index of relative autonomy (RAI), and participation levels (Participation Scale; Fassinger, 1995b) were used in the study. The findings from the hierarchical linear modelling analysis revealed that teacher-student rapport significantly predicted students' active participation in class. Establishing rapport between teachers and students therefore presents an effective way of promoting active student participation. The paper concludes by discussing the implications of the study on strategies that teachers might employ to foster rapport with students.

Keywords: teacher-student rapport; interpersonal relationships; higher education; active participation; constructivism

Introduction

A diverse array of favourable student-related results such as motivation, success, engagement, learning, and hope are significantly enhanced by positive teacher-student relationships (Wendt & Courduff, 2018; Xie & Derakhshan, 2021; Frymier & Houser, 2000; Havik & Westergård, 2020). Teacher-student rapport, as defined by several scholars (Catt, Miller, & Schallenkamp, 2007; Faranda & Clarke, 2004; Frisby & Martin, 2010; Wilson, Ryan, & Pugh 2010), refers to the positive ties and connections that teachers aim to establish with their students. Extensive global research conducted in the realm of higher education has revealed rapport results in numerous positive outcomes for students. In addition to its favourable effect on students' self-perceived learning (Frisby & Martin, 2010), final grade achieved (Wilson, Ryan, & Pugh 2010), motivation for studying (Bouras & Keskes, 2014; Clarke, 2004; Frisby & Myers, 2008; Granitz, Koernig, & Harich, 2009; Zheng, Yu, & Wu, 2021), and academic success (Estepp & Roberts, 2013; Jimerson & Haddock, 2015; Lammers, Gillaspy, & Hancock,

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2017) scholars have also observed a notable and positive correlation between rapport and active participation (Frisby & Martin, 2010). In the context of these studies, the conceptualization and operationalization of rapport and active participation exhibit a notable lack of consistency.

Following the constructivist paradigm of teaching and learning, active participation of students is desirable, as interaction with the social environment enables the individual to form his or her knowledge. Such knowledge tends to be of higher quality, characterised by comprehension, applicability, and permanence (Marentič Požarnik & Plut Pregelj, 2009; Marentič Požarnik & Puklek Levpušček, 2005). Some research (Beadoin, 2002; Martin & Mottet, 2000) also shows that students' active participation in lessons leads to better academic performance (Beadoin, 2002) and plays an important role in the success of education and students' personal development (Tatar, 2005). Students who are actively involved also report higher satisfaction with classes and higher persistence rates (Astin, 1999).

While studies on the relationship between teacher behaviour and active participation are quite extensive, Fassinger (1995a) observed that research on participation is "dominated by studies of children, while less is known about the dynamics of classrooms containing adults or young adults" (p.25). As the desirable consequences of teacher-student rapport, such as academic achievements, learning and motivation for studying have been widely researched, other student-related variables, such as academic engagement and active participation received less attention (e.g., Estepp & Roberts, 2015; Geng, Zheng, Zhong, & Li, 2020). Moreover, in these studies, relevant factors related either to teachers or students were not controlled. To fill this gap, this paper focuses on rapport in the context of higher education and its role in students' active participation. Since those students who exert more effort in performing classroom activities are more likely to acquire the course content (Zhou, 2021), exploring factors which may positively contribute to students' active participation surely seems worthy of research. The present study aims to investigate the role of teacher-student rapport in students' active participation in the context of higher education while controlling for several relevant student and teacher-related factors.

Teacher-Student Rapport in the Context of Higher Education

An examination of the scholarly literature pertaining to rapport in higher education reveals the prevalence of multiple vague and ambiguous definitions of the concept. As such, they do not offer opportunities for the precise operationalization and construction of a psychometrically sound measuring instrument. Consequently, an accurate conceptual framework of this phenomenon (for details *see* Bardorfer, 2013) and a rigorously validated instrument for assessing rapport within the context of higher education (Bardorfer & Kavčič, 2020) were developed.

When considering the establishment of teacher-student rapport within the higher education setting, emphasis is placed on the experience dimension. The

phenomenology of the subjective experience of rapport in higher education can be broken down into three distinct yet interconnected structural components: mutual attention, positivity, and coordination. Rapport can be conceptualized as the degree of proximity or distance existing between the teacher and students at the relational and cognitive levels (Bardorfer, 2013).

The positivity component encompasses various aspects that contribute to a favourable dynamic between students and the teacher. These include the teacher's amiable demeanour and ability to engage with students in a pleasant manner, the creation of a relaxed classroom environment that minimizes student frustration, students' perception of the teacher's concern for their well-being and their comprehension of the subject matter, as well as their perception of the teacher as understanding and respectful. Additionally, students' sense of a balanced, appropriately personal yet professional relationship with the teacher is also a crucial element of the positivity component. The concept of mutual attention pertains to the active involvement and investment of both the teacher and students in the educational exchange. This is demonstrated by the teacher's inclination to share their professional experiences and demonstrate an interest in and receptiveness to students' perspectives, opinions, and inquiries. Additionally, it encompasses the students' willingness to continue collaborating with the teacher, as well as the teacher's endeavours to ensure that students acquire a comprehensive comprehension of the subject matter. Moreover, it encompasses the teacher's accessibility and the absence of negative emotions experienced by students when seeking assistance. The coordination component pertains to the management of interaction and is manifested by the teacher's display of patience when engaging with students while allowing them ample time to provide responses or do pertinent course tasks. Simultaneously, the coordination component encompasses the coordination within the realm of learning and teaching, as evidenced by students' cognizance and endorsement of course objectives, as well as the teacher's inclination to modify explanations in accordance with students' pre-existing knowledge (Bardorfer, 2013).

While the descriptions of students' perceptions included in the components of positivity and mutual attention are also mentioned in the definitions developed by most researchers dealing with rapport in higher education (e.g., Faranda & Clarke, 2004; Frisby & Martin, 2010; Frisby & Buckner, 2017; Fitzgerald & Hooker, 2022; Wilson, Ryan, and Pugh 2010), the coordination component represents a novelty in the proposed model.

Active Participation in the Context of Higher Education

Research in higher education in the context of pedagogical communication studies, which examines students' active participation in lessons defines it differently, while all the authors point out difficulties in definitions. The most often cited definition is that of Fassinger (1995a), according to which active participation includes any comments or questions by students. Christensen, Curley, Marquez and Menzel (1995) understand active participation as any verbal

communication between the teacher and the students and among two or more students about the learning material, which includes presenting information, stating opinions, asking, and answering questions. Similarly, Auster and MacRone (1994) state that active participation is understood by most teachers as predominantly asking and answering questions and students' engagement in discussions. However, they emphasize that the quality of active participation is much more difficult to define. This is probably the reason why the researchers of this aspect of teaching and learning in higher education focus on the quantitative rather than the qualitative aspect of active participation, but they nevertheless suggest that the more frequent the active participation of students, the more likely it is that the participation is also of higher quality (Auster & MacRone, 1994)

North American researchers report that on average, students ask about three questions per hour, most of which refer to clarification of the material and the procedures and content related to schoolwork or assignments (West & Pearson, 1994). Fritschner (2000) provides a significant piece of information in his study, namely that an average of 28% of the students in a whole group are actively engaged. In line with the constructivist paradigm of teaching and learning, it is not surprising that both teachers and researchers in this field of research question what is it that influences students' participation and how to encourage student activity in the classroom (Auster & MacRone, 1994; Fassinger, 1995a; Marentič Požarnik & Puklek Levpušček, 2002).

At higher education level, a number of factors influence students' active participation in lessons (Christensen, Curley, Marquez, & Menzel, 1995; Fassinger, 1995a; Fassinger, 1995b; Fassinger, 2000; Auster & MacRone, 1994), e.g., the size of the year group and spatial distribution, students' age, their self-image, readiness for learning, self-confidence and communication skills, the climate of the year group and the general university culture, as well as other factors, including those related to the teacher, such as their authority and the way they communicate (Auster & MacRone, 1994; Fassinger, 2000), as well as teacher-student rapport conceptualised as quality relationships (Frisby & Myers, 2008; Frisby & Martin, 2010). We propose rapport represents a suitable setting for fostering students' active participation. As the leader of the educational process, the teacher can encourage students' active participation through the establishment and maintenance of rapport, as this aspect of teaching can be actively influenced by the teacher.

The study aimed to examine whether teacher-student rapport can provide an appropriate social context for fostering students' active participation inside and outside of the classroom. Specifically, we tested the following hypothesis: teacher-student rapport, as perceived by students, significantly predicts students' active participation, while controlling several student-related characteristics (age, gender, previous academic performance, level of autonomously regulated motivation for studying the subject matter) and several teacher-related teaching practices, which are generally included in teachers' evaluation (enthusiasm, breadth of coverage and organization).

Methodology

The research data was quantitative using a non-experimental causal method.

Participants

The study utilized a convenience sample consisting of 50 higher education teachers, specifically teaching assistants, professors, and lectors (62% women). These individuals were affiliated with natural or social science study programs at three prominent public universities in Slovenia (University of Ljubljana, University of Primorska, University of Maribor). The age range of the participants ranged between 25 and 65 years, while their teaching experience in higher education ranged from less than 5 years to 25 years or more. The structure of the sample of teachers is shown in Table 1.

Table 1. Sample of Teachers

	Natural sciences		Social sciences		Total	
	N	*%*	*N*	*%*	*N*	*%*
University						
University of Ljubljana	8	53.3	7	46.7	15	30.0
University of Maribor	9	50.0	9	50.0	18	36.0
University of Primorska	8	47.1	9	52.9	17	34.0
Gender						
Male	11	57.9	8	42.1	19	38.0
Female	14	45.2	17	54.8	31	62.0
Age						
25–35 years	5	41.7	7	58.3	12	24.0
36–45 years	9	47.4	10	52.6	19	38.0
46–55 years	5	50.0	5	50.0	10	20.0
56–65 years	6	66.7	3	33.3	9	18.0
Experience in teaching						
under 5 years	6	50.0	6	50.0	12	24.0
5–10 years	7	50.0	7	50.0	14	28.0
11–15 years	5	41.7	7	58.3	12	24.0
16–20 years	2	50.0	2	50.0	4	8.0
21–25 years	1	33.3	2	66.7	3	6.0
over 25 years	4	80.0	1	20.0	5	10.0
Total	25	50.0	25	50.0	50	100.0

A convenience sample of approximately 30 students per individual teacher was also used. The study included a cohort of 1682 students (71.5% women). These students were enrolled in a specific course taught by the target teacher and had attended at least 50% of the sessions. The age range of the participants was 18

to 30 years and older. The structure of the sample of students is presented in Table 2.

Table 2. Sample of Students

	Natural sciences		Social sciences		Total	
	N	*%*	*N*	*%*	*N*	*%*
University						
University of Ljubljana	270	51.8	251	48.2	521	31.0
University of Maribor	285	47.2	319	52.8	604	35.9
University of Primorska	271	48.7	286	51.3	557	33.1
Gender						
Male	330	68.8	150	31.3	480	28.5
Female	496	41.3	706	58.7	1202	71.5
Age						
18–20 years	512	52.6	462	47.4	974	57.9
21–23 years	275	44.3	346	55.7	621	36.9
24–26 years	31	44.9	38	55.1	69	4.1
27–29 years	4	57.1	3	42.9	7	0.4
30 years and older	4	36.4	7	63.6	11	0.7
Total	826	49.1	856	50.9	1682	100.0

According to statistical data 57.000 students were involved in public universities in Slovenia in the year when our data was gathered. The statistical power analyses revealed the ideal sample size for our population is N = 382 so our sample greatly exceeds ideal sample size.

Instruments

1. Instructor-Student Rapport Scale (ISRS; Bardorfer & Kavčič, 2020) describes students' perception of teacher-student rapport. The participants were requested to evaluate 35 items using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The authors report high reliability and appropriate constructive and criterion validity of this scale on the sample of Slovene students.
2. Student Evaluation of Educational Quality Scale (SEEQ; Marsh, 1982) measures nine factors of effective teaching: perceived learning, teacher enthusiasm, organization, peer relationships, rapport, breadth of coverage, examinations, assignments/readings, and difficulty. The statements are accompanied by a 5-point scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The nine-factor SEEQ structure was validated on a sample of North American students from several different disciplines, with α coefficients of reliability for individual subscales ranging from 0.88 to 0.97 (Marsh, 1982). In the present investigation, we employed three distinct subscales: Breadth of Coverage, which contains 4 statements related to teacher competence in the subject matter, presentation of the conceptual

background and alternative approaches and theories; Organisation, which contains 4 statements related to the teacher's organization, structure and clarity of explanations, teaching materials and goals; Enthusiasm containing 4 statements relating to the teacher's enthusiasm, energy, wittiness, and ability to sustain students' interest. The scales underwent a double-independent translation process. The reliability coefficients (α) for the four subscales ranged from 0.82 to 0.87 (Bardorfer, 2016).

3. The Self-Regulation Questionnaire-Academic (SRQ-A; Ryan & Connell, 1989) assesses the underlying motivations that drive students to fulfil class assignments, actively engage in classroom activities, provide answers to teacher inquiries, and overall, endeavour to achieve success in the specific course instructed by the target teacher. It consists of 32 statements, with 9 statements pertaining to External Motivation, 9 statements pertaining to Internal Motivation, 7 statements pertaining to Identified Motivation, and 7 statements pertaining to Intrinsic Motivation. Participants were requested to evaluate the degree to which each statement was applicable to their personal circumstances, using a rating scale ranging from 1 (indicating no applicability) to 5 (indicating total applicability). The findings can be succinctly captured by a singular metric referred to as the relative autonomy index (RAI), which quantifies the degree of self-regulated behaviour, i.e., learning the subject matter taught by the target teacher (Grolnick & Ryan, 1987, 1989). A higher Relative Autonomy Index (RAI) is indicative of a greater level of autonomy, while a lower RAI suggests a lower degree of autonomy. The questionnaire underwent a process of double-independent translation. Reliability coefficients α for the four subscales ranged from 0.78 to 0.87 (Bardorfer, 2016).

4. Participation Scale (Fassinger, 1995b) measures students' self-perceived active participation in lessons. It consists of 5 statements that delineate various manifestations of active engagement in classroom settings (e.g., I actively participate in these lessons). Participants are requested to assess the frequency of their engagement behaviours using a five-point Likert scale (1 - never, 5 - often). For the present study, the scale was translated (double independent translation). The reliability coefficient was α = 0.88 (Bardorfer, 2016).

5. Students' previous academic performance expressed in the number of points attained at the national end-of-secondary school examination.

Procedure

An invitation was extended to higher education teachers from three public universities in Slovenia, who have publicly accessible e-mail addresses, to partake in the research. Participants who expressed their agreement were then visited at one of their classes, where they and their students were provided with a comprehensive explanation of the purpose and objectives of the study. The students who submitted their consent to partake in the study were provided with explicit instructions for filling out the questionnaire using a paper and pencil

format.

Data Analysis

To assess the statistical significance of the contribution of several variables on students' active participation statistical technique hierarchical linear modelling (HLM) was used. The hierarchical structure of the data was taken into consideration with the use of HLM, where data from different participants (students) within individual groups (for each target teacher) are correlated (Raudenbush & Bryk, 2002). We used three-and two-level linear models of the HLM 7 software (Raudenbush et al., 2011), whereby Level 1 was represented by students, Level 2 by groups taught by individual target teachers (target teacher's group level), and Level 3 by universities. Given the absence of significant differences between the universities (Level 3) in criterion variable active participation, we only used a two-level linear model.

Results

We anticipated rapport, as perceived by students, would significantly contribute to predicting students' active participation. HLM analyses on a sample of 1453 students were performed as 229 of the total of 1682 students did not provide data on their previous academic performance, which was a predictor at the student level (Level 1).

To determine the proportion of variance in the dependent variable active participation that could be attributed to differences between groups of target teachers and to differences between students within the same groups first a null model with no predictors included was constructed. In the next step, we compared the model which included predictors at the student level (Level 1) with the null model. As we were interested in the proportion of variance in active participation of students that could be explained by rapport, after controlling for students' demographic variables, their prior academic achievement, motivation for learning the target teacher's subject, and the variables of the teacher's teaching effectiveness, the following predictors (independent variables) were entered in the model: students' gender and age, prior academic performance, relative autonomy index (degree of autonomy in learning for the target teacher's subject), teacher's enthusiasm, organization, and the breadth of coverage, as well as rapport with the teacher. Since we had no reason to expect that the effects of individual predictors differ between groups, we only analysed the main effects of the predictors, which we considered to be fixed.

Following the recommendations by Enders and Tofighi (2007), all predictors were group centered, except for the variable of gender, which was uncentered. We also assumed between group variances of dependent variable active participation didn't differ significantly. As we aimed to compare different models, maximum likelihood estimation was used for the assessment of parameters (Raudenbush & Bryk, 2002).

Table 3. Unexplained Variance of Active Participation of Students at the Student Level and Target Teacher's Group Level in Different Models ($N_{students} = 1453$, $N_{teachers} = 50$)

	Unexplained variance	*df*	χ^2	*p*
Null model				
Target teacher's group-level	0.16	49	415.38	<0.001
Student level	0.76			
Model with student-level predictors (Level 1)				
Target teacher's group level	0.18	49	510.70	<0.001
Student level	0.57			

Table 3 shows the unexplained variance at the target teacher's group level and the student level in different models. In the null model, the target teacher's group level variance accounted for 17% of the total variance in active participation (or $0.16 / [0.16 + 0.76]$), while the variance at the student level accounted for 83% of the total variance (or $0.76 / [0.16 + 0.76]$). The differences between self-perceived active participation in different target teachers' groups were therefore small and represent a lower proportion of the differences in active participation of students. A larger share of differences between students in students' active participation can thus be attributed to differences between students within an individual group.

After entering the student-level predictors (level 1), the total unexplained variance was decreased by 19% $(1 - [0.18 + 0.57] / [0.16 + 0.76])$. Individual predictors therefore explained a total of 19% of the total variance in active participation of students. In the model with student-level predictors, the unexplained variance at the student level was 25% lower than the variance in the null model $([0.76 - 0.57] / 0.76)$. The model comparison test showed the model with predictors at the student level significantly improved the null model $(\chi^2(8) = 1004.76, p < 0.001)$.

Table 4 shows the standard parameter estimates reflecting the main effects of predictors. We used standard parameter estimates, which are more appropriate when the number of units is less than 100 (for an overview, *see* Robust Standard Errors, 2013).

The analysis of the effects of student-level predictors (Level 1) showed that teacher-student rapport was statistically significantly and positively correlated with the active participation of students after controlling for the effects of the remaining predictors in the model. In addition to rapport, some other predictors that were used as control variables, namely gender, prior academic performance, and RAI, were statistically significantly correlated with active participation. After controlling for the effects of the remaining predictors female students rated their active participation lower than male students. Students with better prior academic performance (higher scores at the national end-of-secondary school examination) rated their participation as more active after controlling for the effects of the remaining predictors. The degree of autonomy was also important for active participation, as students with a higher degree of relative autonomy for learning target teacher subject matter rated their participation as more active after

controlling for the effects of the remaining predictors. Students' age and factors related to the teacher's teaching effectiveness, i.e., teacher enthusiasm, organisation, and breadth of coverage, did not statistically significantly correlate with the dependent variable active participation.

Table 4. Estimates of The Effects of Predictors of Active Participation of Students ($N_{students} = 1453$, $N_{teachers} = 50$)

Parameters in models	Fixed effect estimation of the predictor				
	Coefficient	SE	t	df	p
Intersection	3.07	0.08	40.39	49	<0.001
Student level predictors					
Gender	–0.27	0.06	–4.68	1395	<0.001
Age	0.02	0.05	0.40	1395	0.691
Previous academic performance	0.01	0.01	2.27	1395	0.023
RAI	0.12	0.01	11.10	1395	<0.001
Teacher's enthusiasm	0.03	0.05	0.69	1395	0.492
Teacher's organisation	–0.03	0.04	–0.92	1395	0.361
Teacher's breadth of coverage	0.03	0.05	0.65	1395	0.516
Rapport	0.42	0.07	6.21	1395	<0.001

Discussion

Based on the results in Table 4, we can support our hypothesis, which predicted that the quality of rapport between the higher education teacher and students, as perceived by the latter, would significantly contribute to the prediction of self-perceived active participation of students. Students who experienced the interaction with the teacher as pleasant, without feelings of frustration, and perceived the teacher as friendly, witty, respectful, understanding, patient, relatively open, relaxed and approachable both in and out of the classroom, who allows sufficient time for activities and answering questions, tailors his/her explanations to the students' prior knowledge, and of whom they also assumed cared about the students and their learning progress and was interested in their opinions, comments and questions, with whom they wanted to continue working with in the future, did not feel uncomfortable asking for help, were aware of and accepted the learning objectives and perceived the relationship as appropriately personal but still professional, and rated their participation as more active. Students who thus rated their rapport with the teacher as of higher quality, compared to the students who rated their rapport with the teacher as of lower quality, also participated in the lessons to a greater extent without hesitation, volunteered their answers, commented, and asked questions when they did or did not know the answers, and expressed their personal opinions.

These results are consistent with the findings of previous research on the relationship between teacher-student rapport and active participation in the USA (e.g., Frisby and Myers, 2008; Frisby and Martin, 2010), even though these

authors define teacher-student rapport as a general quality of relationships. In comparison with the new definition of teacher-student rapport in higher education (Bardorfer, 2013), their definitions only include the components of positivity and mutual attention, i.e., relational proximity, but not the component of coordination. Additionally in studies where the relationship between active participation and phenomena similar to teacher-student rapport, the authors report of similar results. For example, Christensen, Curley, Marquez, and Menzel (1995) and Menzel and Carrell (1999) found that students' willingness to communicate and their level of active class participation are statistically significantly and positively connected to the teacher's psychological availability, which overlaps substantively with the rapport components of positivity and mutual attention (Bardorfer, 2013). Similarly, the teacher's concern for students, which overlaps with the positivity component, was also positively associated with active participation (Myers, 2004).

The results of previous studies that examined the relationship between certain teacher characteristics and active student participation also support the results of the present study. For example, Fassinger (1995b, 2000) found that teacher support, encouragement, responsiveness, and accessibility are positively and statistically significantly associated with active student participation in lessons, while Pearson and West (1991) also mention active listening, which can be achieved by the teacher listening to the student's comments and questions without judgement. All these subjective perceptions of teacher behaviour and characteristics are captured in the new definition of teacher-student rapport for higher education (Bardorfer, 2013). At the same time, the results of the present study are consistent with the results of research on the negative association between active participation and teacher behaviours, which reflect low-quality teacher-student rapport, such as condescension, disrespect, sarcasm, and unkindness (Kearney, Plax, Hays, & Ivey, 1991).

The feeling of relational and cognitive proximity, which is a key feature of the newly defined rapport, has also been detected as an important factor for the active participation of students in several studies. In an experimental study on a sample of postgraduate students, Stephen (1981), for example, found that students were more willing to participate actively when the teacher took on the role of a fellow student rather than the teacher – when the teacher diminished the psychological distance between him/herself and the students and moved away from the role of omnipotent and omniscient teacher. A positive correlation between active participation and teacher self-disclosure, which the authors hypothesise reduces differences in power and psychological distance between the teacher and students, has been reported in several studies (e.g., Fritschner, 2000; Goldstein & Benassi, 1994). In a study of undergraduate students in the USA, Auster and MacRone (1994), found that students participated significantly more actively with teachers who more often called them by name, nodded and smiled, communicated to students their interest in the students' answers and comments, who encouraged students to elaborate on their answer, and who gave them enough time to do so. The importance of sufficient time for reflection and elaboration of students' answers or comments is also stressed by Bean and Peterson (1998). The finding by Fritschner (2000) that students do not believe their participation is even desirable

when the teacher lectures quickly and does not give them enough time to think and formulate a response is also of considerable importance. The positive relationship between active participation and the teacher's characteristics such as friendliness, approachability, openness to different opinions, the use of humour, and the teacher's trait of not punishing mistakes, but emphasizing that any input from students, even if incorrect, is welcomed as mistakes are seen as part of the learning process, also captured in the new conceptualization of rapport is also reported in a study conducted within the Asian context, specifically in Malaysia (Siti Maziha, Nik Suryani, & Melor, 2010). This suggests that the aforementioned behaviours captured in the teacher-student rapport are important factors for students' active participation in different cultures, which should be verified in future research.

Based on the consistency of the results of previous research with the results of the present study, we can conclude that through the demonstration of specific behaviours, the teacher is likely to succeed in diminishing the psychological distance and establishing a quality teacher-student rapport between him/herself and his/her audience. In such a psychologically safe environment, in which the teacher is also open to different opinions, points of view, comments and questions from the students, in which mistakes and errors are not punished but treated as part of the learning process, and in which the teacher is interested in the students' understanding of the subject matter and tries to help them understand it as well as possible, the teacher is accessible and students do not feel uncomfortable seeking help from the teacher, the students are more willing to check their ideas, to participate actively and to publicly discuss their misunderstandings and their misconceptions and to take intellectual risks in general to form their knowledge in interaction with the social environment. In the case of poor teacher-student rapport, even frequent and enthusiastic use of active working methods most likely does not encourage students to participate actively. Quality teacher-student rapport can thus be seen as a ground where constructivist-based teaching can happen. Thus, the new definition of teacher-student rapport for higher education (Bardorfer, 2013) represents a step towards student-centred teaching, or a constructivist paradigm of teaching, respectively.

However, as HLM analyses only provide information on the relationships between predictors and the criterion variable, the result of the present study does not suggest a cause-effect relationship between predictors and the criterion variable. Thus, it is possible that more active students are more likely to interact with the teacher, resulting in higher quality teacher-student rapport, and it is also likely that teachers respond more positively to and support the active students to a greater extent than the less active students.

In addition to teacher-student rapport, gender was also statistically significantly correlated with active participation, with female students rating their participation on average 0.27 points lower than male students when controlling for the remaining predictors (see Table 4). Therefore, male students rated their participation in lessons as more active, i.e., in comparison to female students, they were more likely to actively participate in lessons without hesitation, voluntarily answer, comment, and ask questions, even when they don't know the answers, and to express their opinions in the target teacher's lessons. The role of gender in active

participation has been investigated in numerous studies using either self-reported or observational measures of students' active participation, or both, but the findings of these studies are rather inconsistent. Similarly, as in the present research, authors of studies with self-reported measures, report that male students rate their participation as more active compared to female students (e.g., Auster & MacRone, 1994; Crombie et al., 2003; Fassinger, 1995b). As a possible explanation for such gender differences, Rocca (2010) cites the fact that men have higher self-confidence compared to women (Fassinger, 1995b; Kling, Hyde, Showers, & Buswell, 1999). This is consistent with the finding of Larkin and Pines (2003) that female compared to male students more often avoid eye contact with the teacher and pretend to read when the teacher calls on them, and with the finding that female students compared to male students are characterized by a higher degree of anxiety when communicating in the lecture hall (Jaasma, 1997).

On the other hand, studies based on observational measures do not always support the findings of studies with self-reported measures of active participation. For example, Howard, Zoeller and Pratt (2006, cited in Rocca, 2010) found a significantly higher proportion of female students in active participation, while Brady and Eisler (1999), Pearson and West (1991), as well as Tatum, Schwartz, Schimmoeller, and Perry (2013) report no gender differences in active participation. A possible explanation for the results of the present study is that Slovenian female students also have lower self-confidence compared to male students, resulting in lower levels of active participation, regardless of the quality of the rapport they have with the teacher. It is also possible that female students rate their active participation lower due to experiencing more anxiety in interacting in the classroom, regardless of the rapport they have with the teacher, as this anxiety may be related to fellow students. In active participation, the student not only exposes his or her lack of knowledge or lack of understanding but also e.g. their social skills and rhetorical abilities. For a clearer picture, the connection between self-confidence, gender and active participation should be tested on a representative sample of students, which would include a more objective measure of participation, such as the observational measure. In addition, it would be useful to include the quality of relations among fellow students, a variable which was not controlled in the present study and influences students' classroom behaviour (Fassinger, 1995b).

The results (see Table 4) also showed that when controlling for the remaining predictors, students with better prior academic performance also rated their participation as more active. It is possible that students with better prior academic performance due to past success and confirmation of their competence in the educational system, also have a higher academic self-concept and self-confidence. Both academic self-concept and self-confidence are positively associated with active participation (Auster & MacRone, 1994; Christensen, Curley, Marquez, & Menzel, 1995; Fassinger, 1995a, 1995b, 2000; Weaver & Qi, 2005). Several authors (e.g., Fritschner, 2000; Howard & Henney, 1998; Weaver & Qi, 2005) suggest that students do not choose to participate due to feelings of fear or inadequacy in front of both the teacher and other students. In fact, according to students, self-confidence is the key motivating factor for their active participation (Weaver & Qi, 2005). We conclude that a student who is confident in his/her

abilities due to positive past experiences and successes, is less reserved in commenting, questioning, and answering, even if he/she is not sure of the correctness of his/her answers. Interestingly, Bowers (1986) found that among those students who experience fear in the classroom, about 60% choose not to participate, while about 33% of students choose to participate despite their fear. Rocca (2010) explains this with Wade's finding (1994, cited in Rocca, 2010) that students are more likely to actively participate when they consider their ideas to be relevant and worthwhile, or if they are interested in or know something about the topic. It is worth noting here that teacher-student rapport may be crucial for active participation, especially for students with lower self-confidence. By demonstrating behaviours through which the teacher communicates to students that their contributions are desirable, valuable, and important, i.e., through quality teacher-student rapport (Bardorfer, 2013), the teacher can probably have a significant impact on their active participation. This assumption should also be tested in further research, optimally using an objective measure of participation activity, e.g., the observational measure and a measure of self-confidence.

The results of the present study (see Table 4) also showed that the degree of relative autonomy in studying the subject matter of the target teacher is important for active participation. While controlling the remaining predictors, students with a higher degree of autonomous motivation for studying the target teacher's subject matter, i.e., who were up-to-date with their studies, made an effort to be successful in the target teacher's subject during the semester and who studied the subject matter because they found it interesting, fun, in line with their interests, or because they perceived knowledge of the material as important for achieving their own goals, also rated their participation as more active, compared to the students with a lower level of autonomy in studying the target teacher subject matter. This is not surprising, as similar results have been found in studies at lower levels of education, as well as higher education (Jurišević, 2012; Connell & Wellborn, 1990, cited in Ryan & Deci, 2000). Increasing internalisation and thus a related sense of personal commitment is associated with greater persistence, more positive self-perceptions, and higher quality of participation (Ryan & Deci, 2000). Similarly, several researchers (Auster & MacRone, 1994; Fassinger, 1995a, 1995b, 2000; Goodboy & Myers, 2008; Weaver & Qi, 2005) have found that students who are more interested in the material, a characteristic of intrinsic motivation, also participate more actively in lessons.

Conclusions

Given the importance of teacher-student rapport in creating a favourable learning environment for fostering students' learning (Wendt & Courduff, 2018; Xie & Derakhshan, 2021; Frymier & Houser, 2000; Havik & Westergård, 2020) and at the same time the importance of students' active participation in and out of classes for the thoroughness of learning and consequently the quality of the achieved results (Marentič Požarnik, 2010), we aimed at investigating the predictive value of teacher-student rapport on students' active participation. The

study findings suggest that teacher-student rapport significantly predicts students' active participation in lessons. Along with rapport, students' gender, previous academic performance, and autonomously regulated learning behaviours significantly predicted their active participation. As such, the study provides useful information on the effect of rapport on students' active participation in lessons. The results are consistent with the findings of previous research on the positive correlation between active participation and teacher-student rapport in the USA (Frisby & Myers, 2008; Frisby & Martin, 2010) and previous research on the positive correlation between active participation and similar phenomenon to teacher-student rapport, such as psychological availability (Christensen, Curley, Marquez, & Menzel, 1995; Menzel & Carrell, 1999) and teacher's concern for students (Myers, 2004). The results are also in accordance with the results of previous research on the relationship between active participation, psychological distance, and differences in power (Stephen, 1981). Most likely, through high-quality rapport, the teacher manages to reduce the psychological distance between himself and the students and thus create a psychologically safe environment in which the mistakes and misunderstandings of the students are not punished, but treated as part of the learning process, and in which the students are therefore more willing to check their understanding, ideas and, in general, to take intellectual risks. Although the study employed convenience sampling the sample is large enough and heterogenous by type of studies and universities, we conclude presented results can be generalized to the population of students involved in public universities in Slovenia.

Practical Implications

The findings of the current study have significant practical consequences, as they offer valuable insights into strategies for improving students' active engagement both within and outside the classroom in higher education. Aligned with the constructivist paradigm of pedagogy within the realm of higher education, as well as recognizing the numerous benefits of students' active participation in enhancing the quality and sustainability of knowledge, teachers in higher education should strive to establish a sound rapport with the students to foster students' active participation through their behaviour and attitudes. This may encompass demonstrating respect towards students, embracing their contributions to the instructional process, refraining from penalizing errors and refraining from passing judgment on misunderstandings and lack of knowledge, displaying a willingness to adapt to some extent in terms of content and structure, striving for consistency in their conduct, being approachable, sharing their experiences with students, fostering opportunities for interpersonal connections, and employing nonverbal cues that foster a sense of safety and reflect a democratic disposition (for further information, *see* Bardorfer, 2017).

Limitations and Future Research Directions

Some methodologic limitations of the study should be noted. The first constraint pertains to the employed measures. Self-reported measures were employed in this study, indicating that participants were limited to reporting on factors within their awareness and their replies may have been subject to the effect of socially acceptable tendencies (Ashton, 2013; Carducci, 2009). Given that hierarchical linear modelling (HLM) analyses solely yield insights into the association between predictors and criterion variables, the findings of the current study do not imply a causal relationship between the predictors and the criterion variable. Hence, it is plausible that the differential ability of certain students to develop a stronger connection with their instructor stems from their heightened level of active participation during classroom sessions. It is plausible that educators exhibit a more favourable response towards these students and provide them with increased support, and as a result, students perceive rapport as stronger. This assumption could be verified in further longitudinal studies, which would measure the differences in students' active participation at the beginning and end of the semester and thus directly determine the effect of rapport on students' active participation. Future research designs should also measure and control the relationships between students, *e.g.*, classroom climate, as past research has shown that these also influence the desired academic behaviours of students (Frisby & Martin, 2010) and other possible relevant factors (*e.g.* class size, type of studies). Employing objective measures, such as systematic observation of teachers' and students' behaviour, would be valuable considerations for the design of future studies.

Ethics Statement

The study was conducted by the ethical standards of the institutional research committee and with the Declaration of Helsinki and its later amendments. Before participating in the study, the participants were informed of the purpose of the study, its expected benefits, as well as ethical aspects. Written informed consent was obtained from all participants in the study. Confidentiality and anonymity were assured, therefore, there was no possibility to identify the participants from their responses.

References

Ashton, M. C. (2013). *Individual differences and personality* (2nd. ed.). USA: Elsevier.

Astin, A. W. (1999). Student involvement: A developmental theory for higher education. *Journal of College Student Development, 40*(5), 518-529.

Auster, C. J., MacRone, M. (1994). The classroom as a negotiated social setting: an empirical study of the effects of faculty members' behavior on students' participation. *Teaching Sociology, 22,* 289-300.

Bardorfer, A. (2013). Student-teacher rapport: a new conceptualization for the context of higher education. *Horizons of Psychology, 22*(1), 105-114.

Bardorfer, A. (2016). *Medosebni stik v visokošolskem izobraževanju: vloga pri dejavni udeležbi, motivaciji za študij in znanju študentov* [Student–teacher rapport in higher education: it's role in students' active participation, motivation and knowledge]. PhD diss., University of Primorska. https://repozitorij.upr.si/IzpisGradiva.php?id =8114.

Bardorfer, A. (2017). Učinki in načini vzpostavljanja medosebnega stika med visokošolskimi učitelji in študenti: perspektiva učiteljev. In S. Rutar et al. (Ed.), *Perspectives of internationalisation and quality in higher education*, (pp. 243-256). Koper: Založba Univerze na Primorskem.

Bardorfer, A., Kavčič, T. (2020). Development of instructor-student rapport scale (ISRS) for higher education. *Journal of Contemporary Educational Studies*, *71*(137), 94-111.

Bean, J.C., Peterson, D. (1998). Grading classroom participation. *New directions for teaching and learning, 74*, 33-40.

Beaudoin, M.F. (2002). Learning or lurking?: Tracking the "invisible" online student. *The internet and higher education*, *5*(2), 147-155.

Bouras, H., Keskes, S. (2014). Teacher-learner rapport impact on EFL learners' motivation. *Paper presented at the International Conference on Social Sciences and Humanities*, September 8-10. Istanbul, Turkey.

Bowers, J.W. (1986). Classroom communication apprehension: A survey. *Communication Education, 35*(4), 372-378.

Brady K.L., Eisler, R. M. (1999). Sex and gender in the college classroom: A quantitative analysis of faculty student interactions and perceptions. *Journal of Educational Psychology, 91*(1), 127-145.

Carducci, B.J. (2009). *The Psychology of Personality: Viewpoints, Research, and Applications* (2nd ed.). Malden: Wiley-Blackwell.

Catt, S., Miller, D., Schallenkamp, K. (2007). You Are the Key: Communicate for Effectiveness. *Education, 127*(3), 369-377.

Christensen, L.J., Curley, K.E., Marquez, E.M., Menzel, K.E. (1995). Classroom situations which lead to students participation. *Paper presented at the 1995 annual meeting of the Speech Communication Association*, November. San Antonio, Texas.

Crombie, G., Pyke, S.W., Silverthorn, N., Jones, A., Piccinin, S. (2003). Students' perceptions of their classroom participation and instructor as a function of gender and context. *The Journal of higher education, 74*(1), 51-76.

Enders, C.K., Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: A new look at an old issue. *Psychological Methods, 12*(2), 121-138.

Estepp, C.M., Roberts, T.G. (2013). Exploring the relationship between professor/student rapport and students' expectancy for success and values/goals in college of agriculture classrooms. *Journal of Agricultural Education, 52*(1), 180-194.

Faranda, W.T., Clarke, I. III. (2004). Student Observations of Outstanding Teaching: Implications for Marketing Educators. *Journal of Marketing Education, 26*(3), 271-281.

Fassinger, P.A. (1995a). Professors' and students' perceptions of why students participate in class. *Teaching Sociology, 24*(1), 25-33.

Fassinger, P.A. (1995b). Understanding classroom interaction: Students' and Professors' contributions to students' silence. *The Journal of Higher Education, 66*(1), 82-96.

Fassinger, P.A. (2000). How classes influence students' participation in college classrooms. *Journal of Classroom Interaction, 35*(2), 38-47.

Fitzgerald, J., Hooker, J. (2022). Establishing Rapport in Higher Education Classrooms. *Alberta Journal of Educational Research*, *68*(3), 357-371.

Frisby, B.N., Buckner, M.M. (2017). Rapport in the instructional context. In M. L. Houser, A. M. Hosek, V. P. Richmond, J. C. McCroskey, & T. P. Mottet (eds.), *Handbook of instructional communication: Rhetorical and relational perspectives* (2nd ed., Vol. 1, pp. 126–137). Routledge.

Frisby, B.N., Martin, M.M. (2010). Instructor-Student and Student-Student Rapport in the classroom. *Communication education, 59*(2), 146-164.

Frisby, B.N., Myers, S.A. (2008). The Relationships among Perceived Instructor Rapport, Student Participation, and Student Learning Outcomes. *Texas Speech Communication Journal, 33*(1), 27-34.

Fritschner, L.M. (2000). Inside the undergraduate college classroom: Faculty and students differ on the meaning of students participation. *The Journal of Higher Education, 71*(3), 342-362.

Frymier, A.B., Houser, M.L. (2000). The teacher-student relationship as an interpersonal relationship. *Communication Education, 49*(3), 207-219.

Geng, L., Zheng, Q., Zhong, X., Li, L. (2020). Longitudinal relations between students' engagement and their perceived relationships with teachers and peers in a Chinese secondary school. *The Asia-Pacific Education Researcher, 29*(2), 171-181.

Goldstein, G.S., Benassi, V.A. (1994). The relation between instructor self-disclosure and student classroom participation. *Teaching of Psychology, 21*(4), 212-217.

Goodboy, A.K., Myers, S.A. (2008). The effect of teacher confirmation on student communication and learning outcomes. *Communication Education, 57*(2*)*, 153-179.

Granitz, N.A., Koernig, S.K., Harich, K.R. (2009). Now It's Personal: Antecedents and outcomes of rapport between business faculty and their students. *Journal of Marketing Education, 31*(1), 52-65.

Grolnick, W.S., Ryan, R.M. (1987). Autonomy in Children's Learning: An Experimental and Individual Difference Investigation. *Journal of Personality and Social Psychology, 52*(5), 890-898.

Grolnick, W.S., Ryan, R.M. (1989). Parent Styles Associated with Children's Self-Regulation and Competence in School. *Journal of Educational Psychology, 81*(2), 143-154.

Havik, T., Westergård, E. (2019). Do Teachers Matter? Students' Perceptions of Classroom Interactions and Student Engagement. *Scandinavian Journal of Educational Research, 64*(1), 1-20.

Howard, J.R., Henney, A. L. (1998). Student participation and instructor gender in the mixed–age college classroom. *Journal of Higher Education, 69*(4), 384–405.

Jaasma, M.A. (1997). Classroom communication apprehension: Does being male or female make a difference? *Communication Reports, 10*(2), 219–228.

Jimerson, S.R., Haddock, A.D. (2015). Understanding the importance of teachers in facilitating student success: Contemporary science, practice, and policy. *School Psychology Quarterly, 30*(4), 488-493.

Juriševič, M. (2012). *Motiviranje učencev v šoli* [Motivating pupils at school). Ljubljana: Pedagoška fakulteta.

Kearney, P., Plax, T.G., Hays, E.R., Ivey, M.J. (1991). College teacher misbehaviours: What students don't like about what teachers say and do. *Communication Quarterly, 39*(4), 309–324.

Kling, K.C, Hyde, J.S., Showers, C.J., Buswell, B.N. (1999). Gender differences in self–esteem: A meta–Analysis. *Psychological Bulletin, 125*(4), 470–500.

Lammers, W.J., Gillaspy, J.A., Hancock, F. (2017). Predicting Academic Success With Early, Middle, and Late Semester Assessment of Student-Instructor Rapport. *Teaching of Psychology*, *44*(2), 145-149.

Larkin, J., Pines, H. (2003). When teachers call on students: avoidance behavior in the classroom. *Paper presented at the Yearly Conference American Psychological Association,* August. Toronto, Kanada.

Marentič Požarnik, B. (2010). *Psihologija učenja in pouka* [Psychology of learning and teaching]. Ljubljana: DZS.

Marentič Požarnik, B., Plut Pregelj, L. (2009). *Moč učnega pogovora: poti do znanja z razumevanjem* [The power of learning conversation: pathways to knowledge through understanding]. Ljubljana: DZS.

Marentič Požarnik, B., Puklek Levpušček, M. (2002). Kako udeleženci tečajev visokošolske didaktike dojemajo kakovost in spremembe v poučevanju in učenju. *Horizons of Psychology, 11*(2), 71-79.

Marentič Požarnik, B., Puklek Levpušček, M. (2005). *Skupinsko delo za aktiven študij* [Group work for active studying]. Ljubljana: Center za pedagoško izobraževanje FF UL.

Marsh, H.W. (1982). SEEQ: A reliable, valid, and useful instrument for collecting students' evaluations of university teaching. *British Journal of Educational Psychology, 52*(1), 77-95.

Martin, M.M., Mottet, T.P. (2000). Students' motives for communicating with their instructors and affective and cognitive learning. *Psychological Reports, 87*(3), 830–834.

Menzel, K.E., Carrell, L.J. (1999). The impact of gender and immediacy on willingness to talk and perceived learning. *Communication education, 48*(1), 31–40.

Myers, S.A. (2004). The relationship between perceived instructor credibility and college student in–class and out–of–class communication. *Communication reports, 17*(2), 129–137.

Pearson, J.C., West, R. (1991). An initial investigation of the effects of gender on student questions in the classroom: Developing a descriptive base. *Communication Education, 40*(1), 23–32.

Raudenbush, S.W., Bryk, A.S., Cheong, Y.F., Congdon, R., du Toit, M. (2011). *HLM 7: Hierarchical linear and nonlinear modeling.* Lincolnwood, IL: Scientific Software International.

Robust standard errors (2013). Retrieved from: http://www.upa.pdx.edu/IOA/newsom/mlrclass/ho_robust.pdf. [Accessed 15. 7. 2015]

Rocca, K.A. (2010). Student participation in the college classroom: An extended multidisciplinary literature review. *Communication Education, 59*(2), 185–213.

Ryan, R.M., Connell, J.P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology, 57*(5), 749-761.

Ryan, R.M., Deci, E.L. (2000). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology, 25*(1), 54-67.

Siti Maziha, M., Nik Suryani, N.A.R., Melor, Y.M.M. (2010). Factors influencing classroom participation: a case study of Malaysian undergraduate students. *Paper presented at the World Conference on Learning, Teaching and Administration Papers,* Procedia–Social and Behavioral Sciences 9.

Stephen, K.D. (1981). Student participation in Communication Courses. *Studies in Higher Education, 6*(2). 173–176.

Tatar, S. (2005). Classroom participation by international students: The case of Turkish graduate students. *Journal of Studies in International Education*, *9*(4), 337-355.

Tatum, H.E, Schwartz, B.M, Schimmoeller, P.A., Perry, N. (2013). Classroom participation and student–faculty interactions: Does gender matter? *Journal of Higher Education, 84*(6), 745–768.

Weaver, R.R., Qi, J. (2005). Classroom organization and participation: College students' perceptions. *The Journal of Higher Education, 76*(5), 570–601.

Wendt, J., Courduff, J. (2018). The Relationship between Teaching Presence and Student Course Outcomes in an Online International Population. *International Journal on E-Learning, 17*(1), 111-129.

West, R. in Pearson, J. C. (1994). Antecendents and consequent conditions of student questioning: an analysis of classroom discourse across the university. *Communication Education, 43*(4), 299–311.

Wilson, J.H., Ryan, R.G., Pugh, J.L. (2010). Professor-Student Rapport Scale Predicts Student Outcomes. *Teaching of Psychology, 37*(4), 246-251.

Xie, F., Derakhshan, A. (2021). A Conceptual Review of Positive Teacher Interpersonal Communication Behaviors in the Instructional Context. *Frontiers in psychology*, *12*, 708490.

Zheng, W., Yu, F., Jim Wu, Y. (2022). Social media on blended learning: the effect of rapport and motivation. *Behaviour & Information Technology, 41*(9), 1941-1951.

Zhou, X. (2021). Toward the Positive Consequences of Teacher-Student Rapport for Students' Academic Engagement in the Practical Instruction Classrooms. *Frontiers in psychology*, *12*, 759785.