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The connection between perceived constructivist learning environments and faculty uncivil authoritarian behaviors

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Abstract This study examined the impact of constructivist-based activities in the classroom on students' perception of their teachers' authoritarian-based behaviors measured by their uncivil behaviors. It was postulated that teachers who use nonconstructivist activities in their classrooms might also demonstrate uncivil authoritarian-based behaviors. Data were gathered from 150 undergraduate students by the Perceived Faculty Incivility Scale (PFIS), including passive and active faculty incivility constructs (PFI/AFI), and the Constructivist Learning in Higher Education Settings [CLHES] Questionnaire, including three constructs: constructive activity, teacher-student interaction, and cooperative dialogue. Data were analyzed by using partial least squares structural equation modeling (PLS-SEM) advised to be applied if the primary objective of applying structural equation modeling is prediction of target constructs. According to the results, a significantly higher mean result of PFI compared with the mean result of the AFI variable was indicated. Based on the empirical model results, cooperative dialogue exerted a pronounced negative effect on PFI directly and indirectly through the constructive activity construct, whereas a slightly smaller impact of the teacher-student interaction on PFI, mediated by constructive activity, was shown. This study links learning processes, aimed at fostering a dialogic thinking, to increased levels of democratic and respectful environments, wherein conflicts may be resolved through dialogue and not by exerting power over students by creating uncivil environments.

Keywords Partial least squares structural equation modeling (PLS-SEM) · Constructivist learning environments · Faculty incivility

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Introduction

"Power distance" and "power relations" are concepts repeatedly used to depict an uncivil interaction between faculty and students, succinctly defined as a speech or action that is disrespectful or rude that interferes with a harmonious and cooperative learning atmosphere (Berger 2000; Feldmann 2001). Power relations are also highly linked to different pedagogical designs of the learning environment which have been undergoing a rapid change in the last several years (Oral 2013). New modes of teaching and learning have been espoused, accompanied by new communication strategies as alternative methods to the traditional classroom model. In traditional, teacher-centered classrooms, teachers do not share authority with students. The teacher is largely, if not exclusively, responsible for setting goals, designing learning tasks, and assessing what is learned. These relations are conceived as an exhibition of authority and employment of power (Dewey 1938; Oral 2013). In contrast, in constructivist student-centered classrooms, knowledge and authority are shared among teachers and students. Thus, traditional learning environments represent power distance and might include uncivil class encounters, while constructivist classrooms represent the opposite pole (Pelech and Pieper 2010). Therefore, it seems worthwhile to investigate how learning environments designed by faculty may influence their communications with students, exemplified by their civil or uncivil behavior. The possible connections between incivility and learning environment in the framework of power relations were overlooked thus far. Delving into these links might illuminate classroom activities that may contribute to shared authority and enhance civil learning environments.

Literature review

Academic incivility

Incivility is broadly defined as a "low-intensity deviant behavior with ambiguous intent to harm the target, in violation of workplace norms for mutual respect" (Andersson and Pearson 1999, p. 457). According to this definition, incivility is a subtle form of interpersonal misconduct (Cortina et al. 2001) expressed through a range of behaviors—from passive behaviors such as ignoring others, to more active manifestations such as disparaging others' reputation or using a demeaning language or tone (Porath and Pearson 2012).

Incivility might intersect with the term "microaggressions" (Pierce 1974). However, the main distinction between the terms is related to power relations between the target and the perpetrator. Whereas the term *microaggression* is centered on the superiority of the perpetrator, *incivility* is not limited to specific characteristics of victims and perpetrators. Indeed, scant evidence exists regarding the usage of incivility as a manifestation of modern discrimination (Cortina 2008; Krings et al. 2014) or expression of unconscious prejudice (Githens 2011). However, although incivility is prevalent, to some extent, among higher status perpetrators and lower status targets (Schilpzand et al. 2016), the source of the uncivil acts can be peers or even subordinates. Similarly, in academic institutes, the uncivil act might be attributed to students (Luparell 2007) or faculty (Clark 2008b).

Incivility has been initially investigated mainly in organizational contexts; however, several researchers promote the notion that academic institutes share some characteristics with financial organizations due to their organizational settings which are based on hierarchical power

structures (Caza and Cortina 2007; Marchiondo et al. 2010). Following this line of thought, incivility researchers have focused their attention on uncivil encounters perpetrated by students and/or faculty members in academic settings (Clark 2008a; Marchiondo et al. 2010). For example, Clark's (2007) analysis of student and faculty perceptions of incivility in nursing education yielded four categories: in-class disruption by students, out-of-class disruption by students, uncivil faculty behaviors, and possible causes of incivility in nursing education. In a consecutive study (Clark 2008a) using the Incivility in Nursing Education survey, the uncivil faculty behaviors occurring most frequently included ineffective teaching methods, arriving late for scheduled activities, deviating from the syllabus, and changing class assignments.

This new avenue of research has led researchers to redefine incivility to represent academic settings. For example, Berger (2000) has focused on the characteristics of incivility and defined academic incivility as a "speech or action that is disrespectful or rude" (p. 446). Others emphasized the outcome of the uncivil encounter and defined it as "any action that interferes with a harmonious and cooperative learning atmosphere" (Feldmann 2001, p. 137). Yet, the most prevalent definition was introduced by Morrissette (2001) who viewed academic incivility as an intentional behavior which disrupts or interferes the learning process of others (Altmiller 2012).

Alt and Itzkovich (2015) pointed to power differences between students and lecturers, especially in an uncivil climate. In such climate, the power distance between lecturers and students is salient; therefore, it is possible that students could develop a horizontal solidarity with their classmates. Hence, a student who is exposed to an uncivil behavior could tend to perceive it as a threat to his/her social identity, even when the uncivil behavior was not specifically directed toward him/her.

As shown in several of the above-surveyed studies, "power distance" and "power relations" are concepts repeatedly used to frame the relationships between faculty and students, especially in an uncivil climate. However, it is noteworthy that power relations are also frequently connected to different pedagogical designs of the learning environment where those relationships occur (Oral 2013). This premise will be strengthened in the following discussion in which traditional vs. constructivist learning environments will be described in the framework of power relations between teachers and students.

Traditional vs. constructivist learning environments: different modes of power relations

The traditional view of teaching and learning holds that learners must submit themselves to teachers and that the teachers' authority is not to be questioned. The underlying assumption is that without the communication of power by the teacher over the student, the student cannot learn, and to some extent, power becomes the essence of the learning process rather than a means to its ends (McCroskey and Richmond 1984). This teacher-centered approach is based on the process of overcoming natural inclination and substituting in its place habits acquired under external pressure (Dewey 1938). In traditional classrooms, the dominant metaphor for teaching is the teacher as an information giver; knowledge flows only one way from teacher to student, as a result, pupils tend to have an attitude of docility, receptivity, and obedience (Hammerness et al. 2005). This traditional model is, in essence, one of imposition from those in authority over their students. Among other inherent flaws of traditional education are imposition of adult standards; teaching knowledge as a set of static principles; suppression of creativity, expression, and the cultivation of individuality; lack of learning through

experience; acquisition of isolated skills without context; construction of the world as static rather than ever-changing; and authority-based professional discourses (Dewey 1938; Oral 2013).

In higher education settings, the lecture course is associated with the traditional instruction, or back-to-basics, which means following traditional teacher-centered methods used to be found in schools that society has traditionally deemed appropriate. It is designed to expedite the transmission of knowledge to large numbers of students although there is no guarantee that effective learning will result (Peters 2000). Students are told how to behave, what to learn, when and how to learn it, and then are assessed in ways that may not take into account the diverse intelligence that exists in every student population (Erwin 2004). Similarly, Biggs and Tang (2011) maintain that this teacher-centered approach overlooks the diversity that exists among students attending higher education today who undoubtedly have special needs that should be addressed by the teachers and necessitate "teaching that engages students' learning activities appropriately" (p. 5). Moreover, this approach has been found to be associated with students' conceptions of learning—students who conceive learning as a quantitative increase in knowledge are likely to adopt a surface approach to learning. Learning is perceived by the students as something external to the learner or something that just happens or is done to you by teachers, they seek to meet the demands of the task with minimum effort and without reflection on purpose or strategy (Biggs and Tang 2011; Prosser and Trigwell 1999; Ramsden 2003).

According to the traditional epistemology, the teacher is being endowed with incontestable authority. Fromm (1941) described this kind of authority as irrational. This authority promotes authoritarian relationships, whether explicit or implicit, that impede the emergence of conflicts, leaving everything tacit but not expressed, therefore unresolved. In contrast, rational authority aims to establish a democratic relationship, by which students are respected, and favors the emergence of conflicts that can be resolved through dialogue. It represents the aims of growth and expansion of the individual.

Cobb et al. (2009) explored the multifaceted nature of authority in a classroom. Authority, they assert, concerns the degree to which students are given opportunities to be engaged in decision-making about the interpretation of tasks, the reasonableness of solution methods, and the legitimacy of solutions. In some classrooms, authority might be given only to the teacher, whereas in others, authority might be more broadly distributed, with students and the teacher jointly determining the legitimacy of contributions. The latter classrooms, it is argued, are likely to be effective in supporting learning when students are given opportunities to exercise conceptual agency. This agency involves choosing methods and developing meanings and relations between concepts and principles, rather than using established solution methods (i.e., disciplinary agency). Students who have opportunities to exercise conceptual agency tend to use higher-order thinking skills, therefore better understand the different usages of disciplinary tools in solving problems. Consequently, when the teacher attempts to distribute authority by asking students to determine whether or not a solution is correct, the students are better able to justify or refute particular claims based on their experience in using disciplinary tools. In contrast, classrooms in which authority is distributed primarily to the teacher offer students opportunities to exercise only disciplinary agency.

Vella (2008) argues that despite decades of research about learning revealing the limited effectiveness of this traditional teaching pattern, most educators focus on this teaching, which typically means conveying information.

Nonetheless, in recent decades, the constructivist pedagogy has challenged the conventional classroom practice. With the growing proportion of information communication technology, social changes, globalization of education, and the pursuit of quality, a new range of abilities adapted to the emerging requirements of present society were recognized. Those requirements include diversified social, communication and cooperation skills and require developing updated instructional practices based on the constructivist pedagogy and recognizing the need for teachers to play different roles and use new teaching methods. In the constructivist epistemology, knowledge is viewed as an autonomous and subjective construction structured by personal experiences (Pelech and Pieper 2010). This student-centered pedagogy transforms power and authority. It stresses on the self-regulated learner and on shifting the external control over the learning process, as used in conventional and well-structured learning settings, to the student's internal control for learning. Sengupta-Irving and Enyedy (2015) investigated why students reported liking a student-driven learning design better than a highly guided design despite equivalent gains in knowledge assessments in both conditions. Their analyses revealed that students in the student-driven condition were significantly more positive about learning, engaged more frequently with data in discussing strategies, and were more involved in questioning peers and aligning outcomes with prior experiences.

In these environments, based on the social constructivist theory, the teacher makes the learning more relevant to the students' needs by creating a context for learning in which students can become engaged in interesting activities that encourage and facilitate learning (Alt 2015). This alternative educational method also referred to as dialectic teaching is the practice of logical discussion used when determining the truth of a theory or opinion (Michaelsen et al. 2008).

Cornelius and Herrenkohl (2004) assert that when teachers introduce new tools into classrooms including new participant structures, they create the potential for transforming many relationships of power: between students and teachers, among students, and between students and the material. Price (2009) also advanced the notion that millennial students prefer a constructivist designed environment in which the instructor shows an interest in getting to know the students. In such environments, Millennials' need to feel connected and interact with instructors and peers takes precedence (Nicoletti and Merriman 2007).

Two constructivist features of interactions are perceived to be essential for promoting cognitive aspects (referred to as "constructive activity," including, for example, activities aimed at promoting knowledge construction; Alt 2014, 2016). First is the individual-level interaction (teacher-student interaction) by which instructional resources are adapted to support the different abilities and needs of the learners and employed by using inclusive teaching practices and differentiated instruction adapted to the student's goals and objectives. Second is the social-level interaction. The social constructivist approach puts a strong emphasis on learning through dialogue and interaction with other learners as well as the development of a common understanding achieved by experiencing the world together. This might not happen if a student just passively receives information. This premise is promoted by Gutierrez (1995) who argues that students must have opportunities to develop linguistic and sociocultural academic discourse about what it means to be a member of a particular classroom community, in order to achieve academic competencies, hence links social-level interaction to cognitive aspects. In a similar route, other studies (Dai 2012; Rosebery et al. 1992) showed the effect of a collaborative inquiry approach to science to students' appropriate scientific ways of knowing and reasoning as a result of their participation in a collaborative scientific inquiry.

Several examples of power relations in traditional vs. constructivist learning environments are indicated in recent studies. For example, Esmonde (2009) strengthens the notion that cooperative learning supports equitable learning environments for all students. The analysis of group interaction within two activity structures—a group quiz and a presentation—showed that in both structures, the most equitable groups tended to work collaboratively rather than individualistically.

Following this strain of educational research, several studies have focused attention on teachers' and students' activities in the classroom, informed by their expectations, demonstrating the gap that exists between those activities and current reform recommendations. For example, the study of Donnelly et al. (2014) showed how complex power relations may exist within inquiry-based classrooms. Although associated with constructivist learning environments, the authors claim that teachers and students bring expectations to the inquiry-based classroom that are entrenched in traditional practices. Their study indicated distinctive features of power inside the classroom that impact on inquiry-based instruction, such as predominant teacher monitoring on task completion over task understanding, lack of student engagement in ownership of scientific ideas, and prevailing norms of what effective teacher questioning is. These power relations, demonstrated by using traditional-based instructional methods, represent an important limiting factor in the capacity of teachers to create a constructivist-based learning environment. In a similar vein, Reinsvold and Cochran (2012) described the dynamic discourse interactions between a teacher and her students in a third-grade science classroom. They focused on how the teacher and students initiate, prompt, respond, and provide feedback, and related the consequences of teacher use of power to the engagement of student with the subject matter. Although associated with inquiry-based learning, their results revealed that the teacher-centered approach was mainly used.

Other researchers link these practices to teachers' beliefs and conceptions about learning. Beliefs, within this area of research, are seen as deep-rooted personal histories about the nature of knowledge and knowledge acquisition acquired through one's own K-12 and higher education learning experiences, while conceptions of teaching are viewed as instructional ideas about the nature of the content to be taught, about how to teach the content to students, and about how students learn the content (Da-Silva et al. 2006). Teachers' beliefs, conceptions, and identities are conceptualized as being the filters through which new knowledge about teaching and learning are screened for viable teaching actions (Enyedy et al. 2005).

With relation to FI, it is noteworthy that merely scant literature exists that depicts its correlates with teaching/learning approaches. However, in Alt's (2014) study, the researcher gleaned some evidence that teacher-centered practices might be conceptualized by students as uncivil. In this study, classroom observational activities as experienced by students were gathered and analyzed to learn about actual instantiations of contemporary learning environments. The following description illustrates how a lecturer imposes his view on his students in a traditional learning environment: "When students want to comment on a specific issue that has been taught in class, the teacher explains that they have no right to do so, since "much better scholars than them have investigated the issue". Eventually, everyone silently obeys the teacher." A similar situation was later indicated as a FI example, as perceived by college students (Alt and Itzkovich 2015).

This study

The above studies were focused on mapping power bases, assessing teachers and students' shared perceptions of the use of power in the classroom, or shared responsibility, and examining participant structures in terms of power and the way these transformations of power play out. The present study, however, suggests evaluating these power relations by measuring the actual activities of teachers in the classrooms (i.e., the extent they use constructivist-based activities) and behaviors (i.e., the extent of their uncivil behavior) as perceived by students. As constructivist learning environments are perceived as nonauthoritarian, the main hypotheses of the current study are that classroom activities, based on the constructivist epistemological approach, will decrease occurrences associated with (*H1*) active FI, and (*H2*) passive FI as perceived by students.

In addition, an effort will be made to assess which of the constructivist tenets (cognitive tenet–constructive activity; individual-level interaction–teacher-student interaction; interaction with other learners–social interaction) will be highly linked to the FI factors. Based on the literature review and the research hypotheses, the following theoretical model has been established (Fig. 1).

Method

Participants

The sample included 150 undergraduate Social Studies students (22% males and 78% females) from three randomly selected colleges located in the Northern Galilee, with a mean age of 24.46 (SD = 5.01) years. The participants' distribution regarding the year of study was 59.5% first-year students, 30.4% second-year students, 7.4% third-year students, and 2.7% fourth-year students.

The participants were asked to report on a face-to-face class. The sampling method appropriate for this study was a convenience sampling. This nonprobabilistic sampling technique is most frequently used in quantitative studies. A researcher may pull a convenience sample which includes those who are available for the study but who have not been randomly selected. Convenience sample examples include volunteer respondents, as in this study (Creswell 2008).

Data analysis

Data were analyzed by using partial least squares structural equation modeling (PLS-SEM; Hair et al. 2017), advised to be applied in situations where theory is less developed, and if the primary objective of applying structural equation modeling is the prediction of target constructs.

Instrumentation

The Constructivist Learning in Higher Education Settings [CLHES] Questionnaire

This 36-item scale was designed by Alt (2014) to obtain measures of students'

perceptions of the occurrence of constructivist practices in higher education learning environments. All items were scored on a 5-point Likert scale from 1 = *not at all true* to 5 = *completely true*. The scale includes the constructive activity-related factors: knowledge construction (KC) with five items is described as multiple opportunities given to students to investigate real problems, raise questions, and search for possible explanations while using various methodological approaches; in-depth learning (IDL) with four items, pertains to the extent to which students are given opportunities to deeply explore a certain subject matter rather than engaging them in a surface learning; authenticity (AUT) with five items deals with giving relevant meaning to the learned concepts and addressing real-life and interesting events which are related to the studied topic; multiple perspectives (MP) with four items, refers to presenting complex ideas from several points of view; and prior knowledge (PK) with four items, deals with connecting the course materials to other courses' topics. In order to achieve a parsimonious model, those five constructs were entered into the model as indicators of the constructive activity construct. The second factor is teacher-student interaction with five items referring to the teacher's role which includes guidance toward reflection on learning processes. The third factor is social activity referring to two variables: social interaction with three items, which includes a variety of learning activities with other students, not necessarily during a lesson (as this study was focused on in-class interactions, this construct was excluded from the analysis); and cooperative dialogue with three items, which refers to dialogical activities during the lesson in which students can express opinions and original ideas. Table 1 displays the CLHES factors, subfactors, and sample item descriptions.

The Perceived Faculty Incivility Scale (PFIS) This scale was designed by Alt and Itzkovich (2015) to measure the frequency of FI occurrences. The scale includes two FI constructs: factor I contained 13 items representing *active FI* (AFI), for example, "The teacher yells at you as a response to misunderstanding". Factor II contained 8 items pertaining to *passive FI* (PFI), for example, "The teacher ignores students' questions during lectures" (two items were omitted due to a low loading result < 0.40). Each item was given a Likert-type score ranging from 1 = *almost never* to 5 = *nearly always*. Internal constituency reliability is shown in Table 2.

Table 1 The CLHES questionnaire: factors, subfactors, and sample item descriptions

Factors and subfactors	Item
Constructive activity Knowledge construction (KC)	c3. During this course, I was given opportunities to search for possible explanations for real problems.
Constructive activity In-depth learning (IDL)	c6. In this course, I have learned skills with which I can deeply explore a subject of interest to me.
Constructive activity Authenticity (AUT)	c18. The course addressed real life and interesting events.
Constructive activity Multiple perspectives (MP)	c21. In this course, ideas were presented from several points of view.
Constructive activity Prior knowledge (PK)	c27. The subjects learned in this course were related to prior knowledge I have gained.
Teacher-student interaction	c15. In this course, the teacher made me think about the advantages and disadvantages of my learning.
Cooperative dialogue	c36. In this course, I could express my opinion, even when it was different from other students.

Table 2 Interanal reliability and validity results for Model 2

Latent variable	Convergent validity AVE > 0.50	Internal constituency reliability Cronbach's alpha > 0.60
Constructive activity	0.670	0.876
Teacher-student interaction	0.688	0.885
Cooperative dialogue	0.783	0.861
PFI	0.698	0.857
AFI	0.626	0.951

For each scale, convergent validity assessment was based on the outer loadings of the indicators (should be > 0.40) and average variance extracted (AVE) values. AVE is defined as the grand mean value of the squared loadings of the indicators connected to the construct and is equivalent to the communality of a construct. An AVE value of 0.50 or higher indicates that, on average, the construct explains more than half of the variance of its related indicators (Hair et al. 2017). As can be learned from Table 2, convergent validity has been established for Model 2) (Fig. 2).

Discriminant validity was assessed by using the heterotrait-monotrait ratio (HTMT) of the correlations (Henseler et al. 2015), defined as the mean of all correlations of indicators across constructs measuring different constructs. The HTMT serves as the basis for a discriminant validity test. An HTMT value above 0.90 suggests a lack of discriminant validity. Moreover, relying on a bootstrapping procedure, a bootstrap confidence interval containing the value 1 indicates a lack of discriminant validity. The evaluation of Model 2 yielded sufficient results, namely, HTMT values ranged from 0.346 to 0.810, and the confidence interval did not include 1.

Procedure

The questionnaires were administered by research assistants to the participants in the colleges in which they studied. The participants were asked to report on face-to-face lessons which encompass interactions with the lecturer. The purpose of the study was explained as examining students' perception of their teachers and the learning environment. Prior to obtaining participants' consent, it was specified that the questionnaire was anonymous and that no pressure would be applied should they choose to return the questionnaire unfilled or incomplete. Finally, participants were assured that no specific identifying information about the courses would be processed.

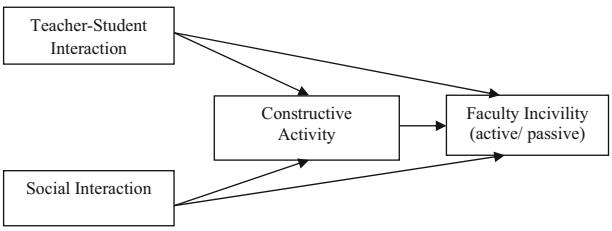

Fig. 1 Model 1. The theoretical model

Findings

Table 3 displays the descriptive statistics of the research constructs and indicators. Following the general guidelines for skewness and kurtosis (suggesting that if the number is greater than + 1 or lower than − 1, then the distribution is skewed, flat, or peaked), it can be learned that the AFI and PFI distributions can be considered nonnormal. A paired-samples t test indicated that the mean result of PFI is significantly higher than AFI ($t_{[148]} = 8.620$, $p < 0.001$).

To assess the research hypotheses, Model 2 (Fig. 2) was constructed. This path model includes five constructs, represented in the model as cycles: constructive activity, teacher-student interaction, cooperative dialogue, PFI, and AFI. The indicators are the directly measured proxy variables, represented as rectangles. Relationships between the constructs as well as between the constructs and their assigned indicators are shown as arrows. In PLS-SEM, single-headed arrows, as shown between the constructs, are considered predictive relationships, and with strong theoretical support, can be construed as causal relationships. As shown in Fig. 2, based on the theoretical model, paths were specified from teacher-student interaction and cooperative dialogue to constructive activity, as the former two constructs are perceived to support the cognitive level measured by the latter.

Table 4 presents the analysis results of the direct and indirect effects. The results show the positive contribution of teacher-student interaction and cooperative dialogue to constructive activity, which in turn directly decreases the extent of PFI. Constructive activity also fully mediates the relationship between teacher-student interaction and PFI. Moreover, it can be learned that cooperative dialogue exerts a pronounced and significant effect on PFI. Hence, constructive activity partially mediates this relationship since both the direct and indirect effects are significant. A direct negative effect was also found between cooperative dialogue and AFI.

Collinearity was examined by variance inflation factor (VIF) values of all sets of predictor constructs in the structural model. The results showed that the VIF values of all combinations of endogenous and exogenous constructs are below the threshold of 5 (Hair et al. 2017) ranging from 1.312 to 2.822. Therefore, collinearity among the predictor constructs is not a critical issue in this structural model.

The coefficient of determination (R^2) value was also examined. R^2 for AFI was rather weak (0.270), whereas the R^2 value of PFI (0.439) can be considered moderate (Hair et al. 2017). In addition to measuring the R^2 values, the change in the R^2 value when a specified exogenous construct is omitted from the model should be used to evaluate its impact on the endogenous

Table 3 Descriptive statistics of the research constructs and indicators

Construct	Indicator	Mean	SD	Skewness	Kurtosis
Constructive activity		3.37	0.81	− 0.454	− 0.310
	Knowledge construction (KC)	2.88	1.08	− 0.130	− 0.815
	In-depth learning (IDL)	3.23	1.07	− 0.262	− 0.722
	Authenticity (AUT)	3.84	1.07	− 0.828	− 0.034
	Multiple perspectives (MP)	3.41	0.91	− 0.429	− 0.047
	Prior knowledge (PK)	3.48	0.80	− 0.341	− 0.292
Teacher-student interaction		3.12	1.07	− 0.142	− 0.927
Cooperative dialogue		3.51	1.09	− 0.580	− 0.345
AFI		1.33	0.62	2.697	9.195
PFI		1.80	0.97	1.411	1.727

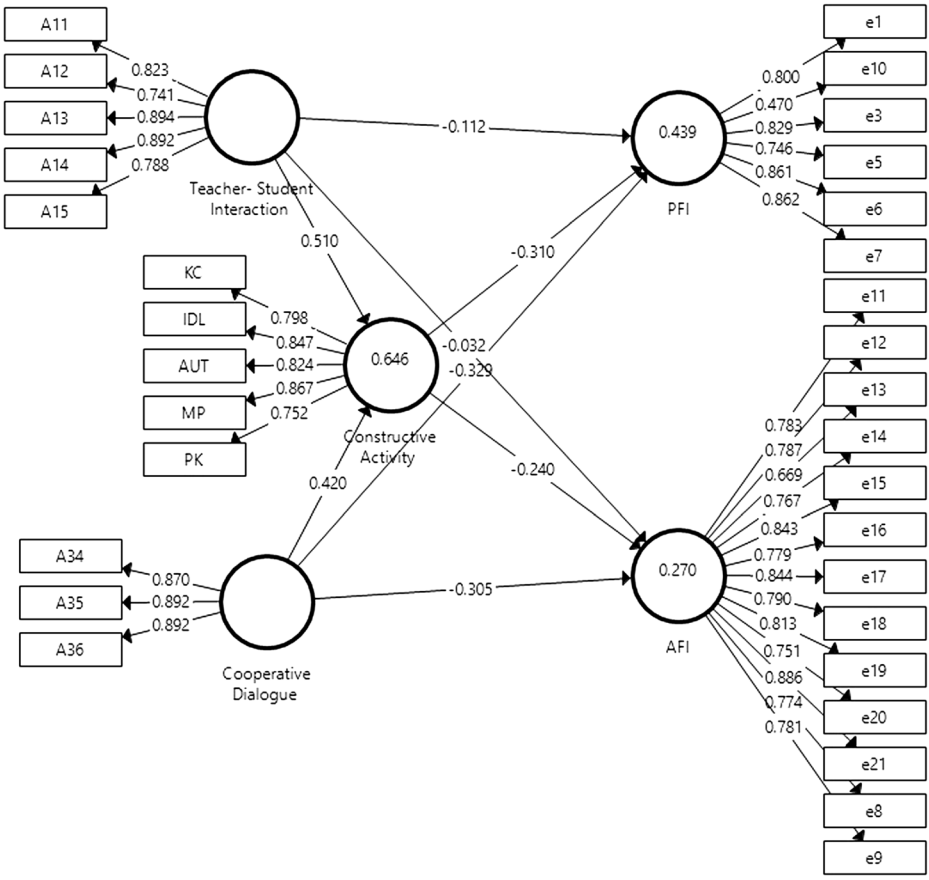

Fig. 2 Model 2. Analysis results of the examination of *H1* in SmartPLS

constructs. This measure is referred to as the f^2 effect size when values of 0.02, 0.15, and 0.35, respectively, represent small, medium, and large effect (Cohen 1988). According to the results, constructive activity had a small effect size of 0.061 on PFI. The cooperative dialogue construct had relatively higher effect sizes of 0.107 on PFI and 0.071 on AFI.

Table 4 Significance analysis of the direct and indirect effects

	Direct effect	*t* value	*p* value	Indirect effect	*t* value	*p* value
Teacher-student interaction–constructive activity	0.510	8.183	0.000			
CD–constructive activity	0.420	5.932	0.000			
Constructive activity–PFI	− 0.310	2.405	0.016			
Constructive activity–AFI	− 0.240	1.517	0.130			
Teacher-student interaction–AFI	− 0.032	0.275	0.783	− 0.122	1.415	0.157
Teacher-student interaction–PFI	− 0.112	1.045	0.296	− 0.158	2.202	0.028
Cooperative dialogue–AFI	− 0.305	2.611	0.009	− 0.101	1.576	0.115
Cooperative dialogue–PFI	− 0.329	3.974	0.000	− 0.130	2.205	0.028

The blindfolding procedure was used to assess the predictive relevance (Q^2) of the path model. Values larger than 0 suggest that the model has predictive relevance for a certain endogenous construct (Hair et al. 2017). The Q^2 value of the PFI construct was 0.250, whereas a relatively lower value was indicated for AFI (0.134). Finally, the q^2 effect size was assessed. This value shows the relative impact of predictive relevance. As indicated for f^2 effect size, values of 0.02, 0.15, and 0.35, respectively, represent small, medium, and large effect. The q^2 effect size values for the relationships between cooperative dialogue, PFI, and AFI were small ($q^2_{\text{Cooperative dialogue} \rightarrow \text{PFI}} = 0.047$, $q^2_{\text{Cooperative dialogue} \rightarrow \text{AFI}} = 0.031$). Lower results were found for the relative impact of the constructive activity construct on PFI ($q^2_{\text{Constructive activity} \rightarrow \text{PFI}} = 0.019$).

Discussion

This study's overarching aim was to examine the impact of constructivist-based activities in the classroom on students' perception of their teachers' authoritarian-based behaviors measured by FI. It was postulated that teachers who endorse a traditional epistemological approach and use nonconstructivist activities in their classrooms might also demonstrate uncivil authoritarian-based behaviors. Collectively, the results showed the relative importance of the cooperative dialogue exogenous construct in decreasing PFI and AFI, followed by constructive activity and teacher-student interaction.

Cooperative dialogue exerted a pronounced negative effect on PFI directly and indirectly through the constructive activity construct. A relatively smaller direct negative effect was found between cooperative dialogue and AFI. Dialogue is a key tenet of social constructivism. This principle emphasizes the cooperative nature of the learning process aimed at fostering a dialogic thinking (Alt 2015). It includes the promotion of communities of inquiry and dialogue skills through the use of forums of alternative voices (Vella 2008). The role of the teacher is to set up a learning environment in which a genuine dialogue can take place—a real learning community where students share their experiences, listen to, and learn from others. Dialogue must be based on mutual respect and cooperation between the educator and the learner. In order to establish a more democratic relationship, by which students are respected, it is important to establish a dialogue between the educator and the learner whereby a mutual relationship between the teachers and learners and a genuine ethos of acceptance and support are encouraged. This is different from the kind of relationship sought by teachers who endorse a traditional-based epistemology and attempt to limit what can be achieved through dialogue. Learning environment features associated with dialogue-based practices may explain the cooperative dialogue centrality in decreasing FI. This pedagogical approach differs from the policy-based approach (Alt 2015; Lachman 2015) which encourages zero tolerance toward FI. While the policy-based approach is centered on the prevention of the "wrongdoing," the constructivist learning environment is focused on promoting the "right doing" as an effective measure for curbing FI.

The mediating role of constructive activity in the relationships between cooperative dialogue and FI may be explained by the constructivist teachers' tendency to assimilate into the life of their students. For example, those teachers are better able to ascertain their students' prior knowledge and teach accordingly (Alt 2014) and bring into discussion authentic situations and real-world tasks, thereby ensure that learning becomes personally interesting. In order to do so, educators need to learn their students' language and practice because the

content of learning is derived from the context within which the learners live. It might be inferred that those educators are more familiar with the thinking and values of their learners and use this to facilitate classroom discussions. Because FI is related to power differences between students and lecturers, it is plausible to suggest that facilitating nonhierarchic and nonauthoritarian environments by using constructivist approaches to learning and teaching may narrow the hierarchical gap between teachers and students and facilitate rational authority-based environments where students are respected.

Another result showed a slightly smaller impact of the teacher-student interaction on PFI, mediated by constructive activity. Teacher-student interaction is one of the main conceptual pillars of the constructivist pedagogy. The teacher is no longer perceived as the sole authority but as the facilitator of learning, guiding, and supporting learners in the process of constructing knowledge (Evans 2014). Teachers provide scaffolding during the learning process while encouraging and guiding students to reflect on their own learning processes, rather than acting as a knowledge conduit (Alt 2014). Based on this idea, it might be inferred that in such personal/individual-level learning processes, teachers share authority with students, and they are both responsible for setting goals, designing learning tasks, and assessing what is learned, thus an adequate communication is established. In this atmosphere, it is expected that teachers will use inclusive, rather than exclusive, practices whereby an appreciation and respect for the unique characteristics and abilities of each individual exist (Esmonde and Caswell 2010). Compared with cooperative dialogue, the teacher-student interaction construct had a somewhat lower and indirect impact on FI. This can be explained by the different levels of interactions, individual and class level, associated with these constructs (Alt 2014, 2015). As the individual-level interaction is associated with the teacher-student interaction construct, it is plausible to assume that this level of interaction is less important in understanding the relations between effective communications in the classroom level.

An additional noteworthy result is the significantly higher mean result of PFI compared with the mean result of the AFI variable, in line with previous studies (Alt and Itzkovich 2015). PFI mainly includes occurrences in which the lecturer is not available for students and ignores their difficulties. A possible explanation for these findings could be that PFI behaviors are not viewed by faculty as warranting severe sanctions compared with active occurrences of incivility as shown by the study of Braxton et al. (2011). According to their findings, academics believe that admonitory behaviors should be avoided but not severely sanctioned, such as advisement negligence and inconvenience avoidance. Another result pertaining to AFI and PFI revealed nonnormal distributions for both variables, based on previous studies (Alt and Itzkovich 2015) that might have been expected. However, it should be noted that in situations where it is difficult to meet the strict requirements of more traditional multivariate techniques, such as normal data distribution, PLS-SEM should be considered as a preferred method. PLS-SEM has a greater flexibility in this respect compared with covariance-based SEM (CB-SEM) when generally making no assumption about the data distribution.

Limitations and directions for future studies

Several limitations and directions for future investigations warrant mentioning. First, the coefficients of determination (R^2) for the FI constructs were weak to moderate; therefore, future research should consider expanding the model tested here with additional variables that may explain FI. For example, a previous study (Alt and Itzkovich 2015) has shown a positive connection between students' experiences of their teachers' just behavior, informed by the

students' belief in a just world (BJW), and uncivil occurrences in the classroom. The BJW has been shown as a major predictor of students' experience of their teachers' behavior in the classroom (Alt 2014, 2015; Peter and Dalbert 2010). This belief allows people to perceive their surroundings as stable and orderly. The BJW compels individuals to behave justly in order to maintain a just world, therefore, it might be worthwhile to integrate this psychological construct into the current research model and assess its possible moderating role.

Second, the self-report measures used in this study raise the necessity to employ diverse methods to lend more confidence to the conclusions about the connections between the research factors, such as qualitative techniques. For example, Alt (2014) gathered and analyzed classroom observational activities as experienced by students. Several descriptions have exemplified power relations based on irrational authority between teachers and students. Such descriptions may authentically demonstrate the characteristics of FI and their manifestations in different learning environments. Moreover, future studies may further benefit from an alternative measure that focuses more specifically on observed teacher behaviors and should involve interventions that might contribute to the limited knowledge gathered thus far on FI and learning environments. For this purpose, approaches such as the design-based research (DBR) or participatory design research might have the potential to substantively elaborate the current study's findings. Moreover, engaging constructs such as power relations is critical for DBR to fulfill its potential to contribute toward equity and realize its potential as a democratizing methodology that can intervene in educational practice (Bang and Vossoughi 2016; Vakil et al. 2016).

Third, although "power relation" is relevant to both learning environment and FI theories, this concept was not measured directly in this study, but rather indirectly by interpreting activities and behaviors in the classroom as indicative of different power relation patterns. It might be worthwhile to consider addressing in future studies the typology of relational power (Schrodt et al. 2007). This typology suggests that teachers exert influence over students by communicating from five relational power bases: reward power, coercive power, legitimate power, referent power, and expert power. The students' observations of the teacher's role, demeanor, or behavior form the basis of their perceptions of teacher power. Examining the impact of these variables on the current study's model may allow us to delve deeper into the FI phenomenon and its connections to teaching and learning approaches.

Fourth, this study was focused on understanding teacher-student power relations in a collaborative learning environment. However, the question of how students construct relations of authority during group work and the catalytic effect that teacher interactions with students can have on such relationships in higher education settings might offer a fertile ground for future studies (Langer-Osuna 2016).

Fifth, it would be beneficial to examine social and cultural impacts on students' learning, development, and identities (Bang 2015; Nasir and Kirshner 2010) to demonstrate how these understandings might be related to this study's constructs. Such examinations might generate more meaningful results.

Conclusions and implications

The importance of effective interaction in the classroom cannot be overstated. Individual- or classroom-level effective interactions are central to the constructivist teaching process. This study links learning processes, aimed at fostering a dialogic thinking, to increased levels of

democratic and respectful environments, wherein conflicts may be resolved through dialogue, and not by exerting power over students or by communicating irrational authority. In these nonauthoritarian environments, based on the social constructivist theory, the teacher, on the one hand, fosters a self-directed learning and assists the student to advance toward greater independence as a learner and greater ownership of his/her learning processes, and on the other hand, encourages broader social skills. Teachers should seek helping their students to become more effective members of democratic learning communities, rather than putting them in inferior roles of passive noninvolved observers. Ramsden (2003) maintains that this reflective and inquiring approach is a necessary condition for improving teaching, as it allows teachers to reflect on their teaching and use what they learned from their students to improve their practice: "To teach is to make an assumption about what and how the student learns; therefore, to teach well implies learning about students' learning" (p. 8).

The negative link between the classroom constructivist activity and teachers' uncivil behavior may imply that some teachers hold a firm epistemic belief about their preferred ways of teaching and learning. This congruency is not always evident, as shown by previous studies (Donnelly et al. 2014; Reinsvold and Cochran 2012). An authoritarian power relation might be used also in environments associated with inquiry-based learning. This power relation represents an important limiting factor in the capacity of teachers to create a constructivist-based learning environment. They attempt at designing an inquiry-based activity, however, may lack the ability or will to promote the affective (teacher-student interaction) and social (cooperative dialogue) key tenets of the social constructivist approach, which may entail, as suggested by this study, hierarchic, controlled, and authority-based discourses. Improving teaching means changing the way teachers think about and experience teaching, and it involves changing their conception through, for example, training programs, design and implementation of curricular reform, teamwork with colleagues, and involvement of management and academic departments and universities (Ramsden 2003). Biggs and Tang (2011) suggest the Bologna as an essential and transnational process that has strong implications for teaching at the institutional and individual classroom level as it puts an emphasis on student-centered learning, lifelong learning, and learning outcomes. This process involves a paradigm shift toward a more learner-centered approach especially in countries where the teaching model is teacher-centered. "Curriculum maps" are suggested to facilitate a constructive alignment between teaching, learning, and assessment. Attention should be paid to providing guidance and best practices for designing new teaching and learning environments. These may serve as useful tools for teachers and learners to tackle different individual approaches to learning by students. Creative and innovative learning environments should be developed and tested to improve the effectiveness of teaching and learning within higher education systems, thus bridging the gap between current educational goals and outcomes of teaching, learning, and assessment processes for the twenty-first century. Such efforts will undoubtedly raise the quality and relevance of the teaching/learning experience and thus of education at large, in line with the main student-centered approach that lies at the core of the Bologna process and, as found in this study, may facilitate a nonauthoritarian learning environment.

As recognized from broader research, the design of high-quality teaching may lead to high-quality student learning and improve students' approaches to learning (Ramsden 2003) and may create a civil learning environment, as argued in the current work. Therefore, with the huge shift from traditional to constructivist conceptions and the growing attention paid to teacher behavior in academia, university teachers may first need to improve the quality of teaching and learning.

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