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Reforming Multicultural and Multilingual Teaching Through Knowledge Co-Creation: Strengthening Engagement Self-Efficacy

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Abstract

Multicultural and multilingual classrooms require teachers to respond to differences in language proficiency, cultural expectations, and patterns of participation. This study examines the professional resources and classroom demands associated with teachers' self-efficacy in student engagement and considers how the findings can inform knowledge co-creation-oriented teaching reform. Data were drawn from 77,147 lower-secondary teachers with experience teaching culturally diverse students in the OECD Teaching and Learning International Survey 2018. Descriptive statistics, Pearson correlations, and multiple linear regression were used to analyse the relationships among multicultural self-efficacy, instructional self-efficacy, preparedness for multicultural and multilingual teaching, student-behaviour stress, and self-efficacy in student engagement. The results indicated that multicultural self-efficacy, instructional self-efficacy, and teaching preparedness were positively associated with teachers' confidence in motivating students and supporting their participation, whereas student-behaviour stress was negatively associated with engagement-related self-efficacy. Teachers also reported lower confidence in multicultural and multilingual classrooms than in their overall teaching practice. Drawing on these findings, the study proposes knowledge co-creation as a reform framework through which teachers and students jointly identify participation barriers, adjust learning activities, and evaluate classroom practices. The findings highlight the need to combine teacher preparation with inclusive feedback mechanisms and sustained support for managing classroom demands.

Keywords

Knowledge co-creation; multicultural education; multilingual education; teacher self-efficacy; student engagement

1. Introduction

Classrooms are becoming increasingly multicultural and multilingual because of migration, international mobility, and growing linguistic diversity. Although this diversity brings valuable experiences and perspectives into learning, differences in language proficiency, cultural expectations, and communication styles may influence students' classroom participation. Teachers consequently need to engage students while responding to diverse learning needs. Teacher self-efficacy in student engagement refers to teachers' perceived capacity to motivate students, help them value learning, strengthen their confidence, and support those who show limited interest in schoolwork (Zhang et

al., 2025). These tasks may become more complex in multicultural and multilingual classrooms, where limited participation may arise from language barriers, unfamiliar classroom expectations, or concerns about cultural belonging.

Previous research has connected teacher self-efficacy with instructional competence, multicultural competence, teaching preparedness, classroom conditions, and occupational stress (Jang et al., 2026). However, these factors are often examined separately. An integrated analysis is needed to identify the professional resources that support teachers' confidence in engaging students and the classroom demands that may constrain it.

These relationships also have implications for teaching reform. Formal education and professional development provide teachers with relevant knowledge and strategies, but many multicultural classroom challenges emerge through daily interaction. Knowledge co-creation offers a potential reform direction by enabling teachers and students to identify participation barriers, exchange feedback, and adjust learning activities collaboratively (Ma et al., 2026).

Using TALIS 2018 data, this study examines how multicultural self-efficacy, instructional self-efficacy, teaching preparedness, and student-behaviour stress are associated with teacher self-efficacy in student engagement. Knowledge co-creation is not directly measured in the dataset; it is used to translate the findings into an evidence-informed framework for multicultural and multilingual teaching reform.

2. Literature Review

2.1 Multicultural and Multilingual Teaching Reform

Multicultural and multilingual classrooms require teachers to interpret participation across differences in language proficiency, communication habits, cultural knowledge, and expectations of teacher–student interaction (Hamm-Rodríguez et al., 2025). These differences affect everyday decisions about explanations, examples, group work, and feedback, yet teacher education may treat cultural diversity as an additional topic rather than an issue embedded in routine classroom practice. Effective reform should therefore give teachers opportunities to examine specific participation problems, reconsider their assumptions, and adapt instruction in response to students' experiences instead of relying only on general training about diversity (Szelei et al., 2020). Whether teachers feel able to make such adjustments is central to this process, making self-efficacy an important link between professional preparation and inclusive classroom participation.

2.2 Teacher Self-Efficacy in Student Engagement

Teacher self-efficacy refers to teachers' beliefs about their capacity to organise and perform the actions required to achieve educational goals (Bandura, 1997; Tschannen-Moran & Hoy, 2001). It is task- and context-sensitive. A teacher may feel confident in general instructional practice while feeling less capable of responding to students from unfamiliar cultural or linguistic backgrounds. General instructional self-efficacy and multicultural self-efficacy should therefore be treated as related but distinguishable dimensions of professional capacity (Zhou & Liu, 2025).

Student-engagement self-efficacy is especially relevant in multicultural and multilingual classrooms(Matsumura & Tatsuyama, 2024). Teachers may need to engage students who have difficulty expressing themselves in the instructional language, interpret classroom participation differently, or feel that their cultural experiences are not recognised. Teachers with stronger multicultural self-efficacy may be more confident in adapting instruction, supporting interaction among culturally diverse students, and addressing cultural stereotypes. Instructional self-efficacy may also provide the practical capacity to vary teaching methods and explanations in response to different learning needs. Preparedness provides another potential professional resource (Gülle et al., 2025). The association between self-efficacy and classroom stress may also be reciprocal: demanding conditions can weaken teachers' confidence, while stronger self-efficacy can influence how teachers interpret and respond to those demands. Together, multicultural self-efficacy, instructional self-efficacy, preparedness, classroom challenges, and student-behaviour stress represent complementary aspects of teachers' professional experience.

2.3 Knowledge Co-Creation as a Teaching Reform Approach

Knowledge co-creation offers a way to reconsider whose knowledge informs teaching decisions. In co-created learning, students contribute to selected aspects of educational design, while teachers remain responsible for

academic quality and inclusion. The purpose is not simply to transfer authority to students, but to recognise their classroom experiences as a source of pedagogical knowledge. Students may explain why a discussion format discourages participation, identify examples that are culturally unfamiliar, or suggest feedback methods that make it easier to express uncertainty (Bovill, 2020).

This contribution is particularly relevant in multicultural and multilingual classrooms because student participation is not always easy for teachers to interpret. When a student remains silent, the behaviour may be attributed to limited interest or effort. However, it may also reflect difficulty using the instructional language, unfamiliarity with expected discussion practices, concern about making mistakes publicly, or previous experiences of exclusion. Learners' perspectives can provide information for designing educational activities that respond more closely to their actual experiences and needs (Di et al., 2024). Inviting students to describe how they experience a task may therefore reveal barriers that classroom observation alone cannot fully explain.

Co-creation does not require teachers and students to redesign an entire course together. It can be incorporated through relatively focused classroom practices. For example, teachers may use anonymous written feedback to identify participation barriers, discuss alternative group arrangements with students, or revise examples that depend on culturally specific knowledge. Students can subsequently comment on whether these adjustments have changed their opportunities or confidence to participate. Pedagogical adjustment consequently becomes an exchange between teachers' professional judgement and students' situated knowledge.

Teacher self-efficacy is important to this reform process. Teachers who feel capable of engaging students may be more willing to invite student contributions, experiment with collaborative approaches, and adapt their teaching in response to feedback. Multicultural self-efficacy can support teachers in interpreting cultural differences and recognising diverse forms of knowledge, while instructional self-efficacy can help them translate student contributions into workable classroom activities. Preparedness may provide the initial knowledge and strategies needed to begin this process. Conversely, high levels of classroom challenge and student-behaviour stress may make teachers less confident about sharing decisions or introducing unfamiliar forms of participation.

In this study, knowledge co-creation serves as an interpretive framework rather than an empirically tested construct. TALIS 2018 does not measure whether teachers and students jointly design or revise classroom activities. The analysis instead examines the professional capacities and classroom demands associated with teachers' confidence in engaging students. The findings are then used to consider the conditions under which co-created practices may be feasible in multicultural and multilingual classrooms. Establishing whether knowledge co-creation improves teacher self-efficacy or student participation would require direct measures, classroom interventions, or longitudinal evidence.

2.4 Theoretical Framework and Hypotheses

Three professional resources are examined in this study. Multicultural self-efficacy concerns teachers' perceived capacity to respond to cultural diversity and facilitate interaction among students from different backgrounds. This form of confidence should be relevant to student engagement because teachers frequently need to interpret participation across different cultural and linguistic contexts. Instructional self-efficacy represents a related but broader resource. Teachers who believe that they can vary explanations, tasks, and teaching strategies may be better able to provide students with different routes into classroom participation. Preparedness for multicultural and multilingual teaching provides a third resource. Although preparedness does not necessarily guarantee effective practice, teachers who consider their prior education and training relevant to diverse classrooms may feel better equipped to engage students whose experiences differ from their own. On this basis, the following hypotheses are proposed:

H1a. Multicultural self-efficacy is positively associated with teacher self-efficacy in student engagement.

H1b. Instructional self-efficacy is positively associated with teacher self-efficacy in student engagement.

H1c. Preparedness for multicultural and multilingual teaching is positively associated with teacher self-efficacy in student engagement.

Professional resources operate within classroom conditions that may either support or constrain their use. Student-behaviour stress can direct teachers' attention towards discipline and immediate classroom control, leaving fewer emotional and cognitive resources for motivating students or developing inclusive forms of participation. Previous research has also connected behaviour-related stress with teachers' perceptions of their professional capacity. A negative association is therefore expected between student-behaviour stress and engagement-related self-efficacy.

H2a. Student-behaviour stress is negatively associated with teacher self-efficacy in student engagement.

H2b. Perceived multicultural classroom challenges are negatively associated with teacher self-efficacy in student engagement.

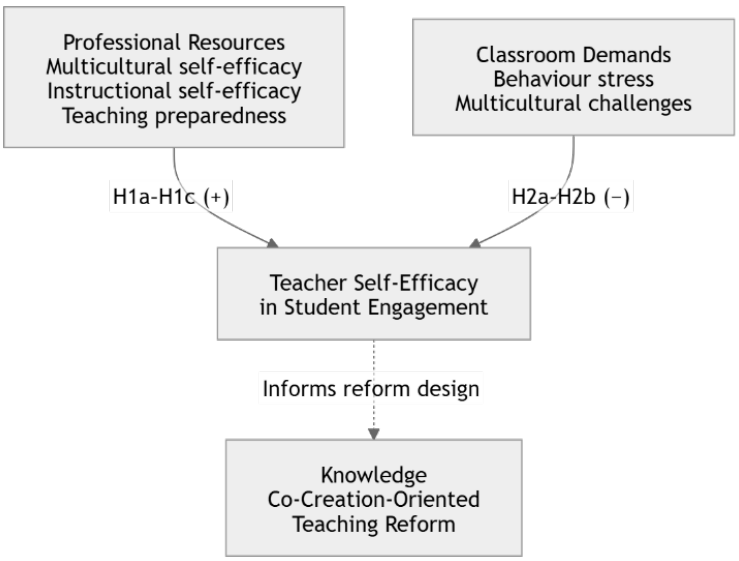

Figure 1. Theoretical Framework for Knowledge Co-Creation-Oriented Multicultural and Multilingual Teaching Reform.

Figure 1 presents the hypothesised relationships. The empirical model identifies the professional resources that should be strengthened and the classroom demands that should be addressed. The findings are subsequently interpreted through knowledge co-creation as a teaching reform approach based on teacher–student dialogue, shared identification of participation barriers, and collaborative adjustment of learning activities. Knowledge co-creation is therefore an application framework rather than a variable directly tested using TALIS 2018 data.

3. Method

3.1 Data and Sample

This study used publicly available data from the 2018 Teaching and Learning International Survey, administered by the Organisation for Economic Co-operation and Development. The survey collected internationally comparable information on teachers' professional preparation, self-efficacy, classroom experiences, and working conditions. The study used data from lower-secondary teachers who had experience teaching students from culturally diverse backgrounds. After cases with missing values were excluded, the final analytical sample consisted of 77,147 teachers from participating countries and economies.

3.2 Measures

The analysis used six teacher-reported variables from TALIS 2018. Self-efficacy in student engagement was the outcome and covered teachers' confidence in motivating students, building their confidence, and supporting those with little interest in schoolwork. Three predictors represented professional resources: multicultural self-efficacy concerned adapting teaching and supporting interaction across cultural backgrounds; instructional self-efficacy concerned changing strategies or explanations when necessary; and preparedness indicated how well formal education or training had equipped teachers for multicultural and multilingual settings, with responses ranging from *not at all prepared* to *very well prepared*. Two measures represented classroom demands. One recorded the challenges teachers perceived in multicultural classrooms, while student-behaviour stress covered discipline, disruptive conduct, and pressure related to student achievement. All measures reflect teachers' perceptions rather than direct observations of classroom practice or student engagement.

3.3 Data Analysis

Data were analysed using Stata 18.0. Descriptive statistics were calculated to summarise the study variables, followed by Pearson correlation analysis to examine their bivariate relationships. Multiple linear regression analysis was conducted to examine the associations of multicultural self-efficacy, instructional self-efficacy, preparedness for multicultural and multilingual teaching, and student-behaviour stress with teacher self-efficacy in student engagement. All predictors were entered simultaneously so that the association of each predictor could be estimated while accounting for the other variables in the model. Variance inflation factors were examined to assess multicollinearity. Cases with missing values were excluded using listwise deletion, and statistical significance was evaluated at the .05 level. Because the data were cross-sectional, the results were interpreted as associations rather than causal effects.

4. Results

4.1 Teacher Self-Efficacy across Teaching Contexts

Figure 2 presents the descriptive comparison between teachers' overall self-efficacy and their self-efficacy in multicultural and multilingual classrooms. Overall teacher self-efficacy had a mean of 12.68 (SD = 2.00), whereas self-efficacy in multicultural and multilingual classrooms had a mean of 11.17 (SD = 1.99). The descriptive difference indicates that teachers reported lower confidence when teaching in culturally and linguistically diverse settings than in their general teaching practice. As no inferential test of the mean difference was conducted, this comparison should be interpreted descriptively.

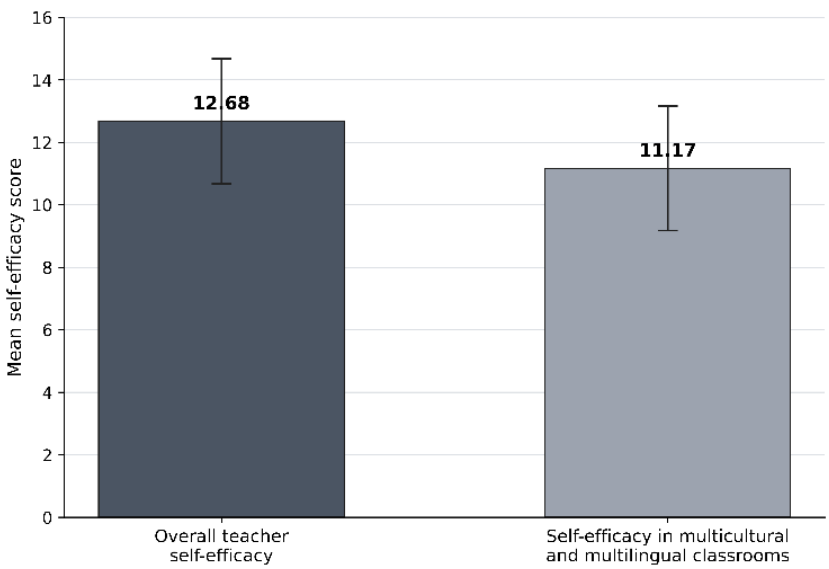

Figure 2. Comparison of Overall Teacher Self-Efficacy and Multicultural Classroom Self-Efficacy.

4.2 Factors Associated with Self-Efficacy in Student Engagement

Multiple linear regression analysis was conducted to examine the factors associated with teacher self-efficacy in student engagement. The model was statistically significant, $F = 9525.82$, $p < .001$, and explained 38.17% of the variance in the dependent variable.

As shown in Table 1, multicultural self-efficacy was positively associated with teacher self-efficacy in student engagement ($B = 0.140$, $SE = 0.004$, $p < .001$), supporting H1a. Preparedness for multicultural and multilingual teaching was also positively associated with the dependent variable ($B = 0.117$, $SE = 0.006$, $p < .001$), supporting H1c. Student-behaviour stress showed a negative association with teacher self-efficacy in student engagement ($B = -0.102$, $SE = 0.003$, $p < .001$), supporting H2a.

Table 1. Multiple Regression Predicting Teacher Self-Efficacy in Student Engagement

Variable	Coefficient	Std. Error	t	P>|t|	[95% conf. interval]	
Self-efficacy in multi-cultural and multilingual classrooms	0.140179	0.0040213	34.86	<.001	0.1322973	0.1480606
Student behavior stress	-0.1017593	0.0028335	-35.91	<.001	-0.107313	-0.0962056
Challenges in a multi-cultural and multilingual classroom	-0.0821886	0.0099883	-8.23	<.001	-0.1017656	-0.0626117
Teacher preparedness	0.1172767	0.0057273	20.48	<.001	0.1060512	0.1285021
_cons	4.29422	0.052837	81.27	<.001	4.19066	4.39778

Dependent variable: teacher and student interaction quality in a multilingual class

R-squared: 0.4817; Adj R-squared: 0.4817; F-statistic: 9525.82; Number of observations: 77,147; Root MSE: 1.5658

Table 2. Hypothesis Result

Predictor		SE	t	p	Hypothesis result
Multicultural self-efficacy	0.14	0.004	34.86	<.001	H1a supported
Instructional self-efficacy	0.553	0.003	179	<.001	H1b supported
Teaching preparedness	0.117	0.006	20.48	<.001	H1c supported
Student-behaviour stress	−0.102	0.003	−35.91	<.001	H2a supported

The results (as shown in Table 2) supported all four hypotheses. Multicultural self-efficacy, instructional self-efficacy, and preparedness for multicultural and multilingual teaching were positively associated with teacher self-efficacy in student engagement, supporting H1a, H1b, and H1c. Student-behaviour stress was negatively associated with the dependent variable, supporting H2a.

5. Discussion

This study examined the professional resources and classroom demands associated with teacher self-efficacy in student engagement in multicultural and multilingual classrooms. The findings supported all four hypotheses. Multicultural self-efficacy, instructional self-efficacy, and teaching preparedness were positively associated with engagement-related self-efficacy, whereas student-behaviour stress showed a negative association. The descriptive results also showed that teachers reported lower self-efficacy in multicultural classrooms than in their overall teaching practice, although this difference was not tested inferentially.

5.1 Professional Resources and Student Engagement

The positive association between multicultural self-efficacy and self-efficacy in student engagement supports the view that teachers need context-specific confidence when working with culturally and linguistically diverse students. General teaching competence may not fully prepare teachers to recognise culturally different forms of communication and participation. A student's silence, for instance, may be interpreted as disengagement even when it reflects uncertainty about language or unfamiliar discussion conventions. Teachers must make such judgements before deciding whether to change an explanation, the composition of a group, or the way students are invited to contribute. Preparation should therefore include opportunities to analyse multilingual classroom situations, design culturally responsive activities, and respond to different patterns of student participation. The present association does not show that multicultural self-efficacy causes better engagement. It does, however, indicate that teachers distinguish between confidence in general instruction and confidence in responding to diversity.

5.2 Classroom Demands and Teacher Self-Efficacy

Student-behaviour stress was negatively associated with teacher self-efficacy in student engagement. Behavioural pressures may reduce the emotional and cognitive resources teachers can devote to motivating students and developing inclusive interaction. This result suggests that teaching reform should address classroom demands in addition to improving teachers' knowledge and skills.

The finding should not be interpreted as evidence that student behaviour directly causes lower self-efficacy. Teachers with lower self-efficacy may also experience classroom behaviour as more stressful. The cross-sectional data cannot establish the direction of this relationship. Nevertheless, the association indicates that professional development focused only on teaching techniques may be insufficient when teachers lack support for managing stress and sustaining classroom relationships.

6. Conclusion

Teachers' confidence in engaging culturally and linguistically diverse students reflects both what they feel capable of doing and the conditions under which they teach. In the TALIS 2018 sample, stronger multicultural self-efficacy, instructional self-efficacy, and preparation for diverse classrooms were associated with greater confidence in student engagement. By contrast, student-behaviour stress and perceived multicultural classroom challenges were associated with lower engagement-related self-efficacy. Improving teacher preparation alone may therefore be insufficient if the pressures that restrict teachers' capacity to respond to students remain unaddressed.

Knowledge co-creation provides one possible way of applying these findings, although its effects were not tested in the present analysis. Student feedback may help teachers interpret participation difficulties that are not readily visible through classroom observation, while teachers' professional judgement remains necessary for converting that feedback into inclusive teaching decisions. The study therefore identifies conditions that may support or constrain co-created practice rather than demonstrating that knowledge co-creation itself improves teacher self-efficacy or student participation.

Several limitations should be acknowledged. TALIS 2018 is cross-sectional and based on teacher self-reports; therefore, the findings represent associations and cannot establish causality. Teacher self-efficacy also reflects teachers' perceptions rather than students' actual engagement or learning outcomes. In addition, knowledge co-creation was proposed as a reform framework but was not directly measured in the dataset. Future research should collect data from both teachers and students and use classroom interventions or longitudinal designs to examine whether co-created feedback and learning activities improve teacher self-efficacy and student participation over time.

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Conflict of Interest Statement

The author declares no conflict of interest.

Data Availability Statement

The data used in this study are publicly available from the OECD Teaching and Learning International Survey (TALIS) 2018 database at https://www.oecd.org/en/data/datasets/talis-2018-database.html. No new data were generated in this study.

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