



# MODELING TEACHER SELF-EFFICACY AS A FUNCTION OF PEER OBSERVATION, ADMINISTRATIVE FEEDBACK, JOB SATISFACTION, AND WORK ENJOYMENT

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**Abstract.** This study used a large-scale, international data set – the Organization for Economic Cooperation and Development (OECD) – Teaching and Learning International Survey (TALIS) 2013, consisting of 14,583 teachers from 34 countries – to examine the manner in which feedback from administrators, time spent observing colleagues’ classes, job satisfaction, and work enjoyment predicted teachers’ instructional self-efficacy. To guide the present study, Bandura’s (1986, 1997) part of the social cognitive theory – that is, self-efficacy theory – is utilized. We adopted Bandura’s self-efficacy theory as the framework, for it provides a valuable lens through which we could identify the predictors of teacher self-efficacy to include in the model investigated in this study. The results of this study suggest that feedback from administrators was not a significant predictor of teacher self-efficacy for instruction, whilst peer observation, job satisfaction, and work enjoyment were estimated as being significant predictors. These results have implications for practice – specifically, how teachers and school leaders should cultivate teachers’ self-efficacy for instruction – and future research.

**Keywords:** teacher self-efficacy, administrative feedback, peer observation, job satisfaction, work enjoyment

## 1. Introduction

Grounded in Bandura’s (1986) social cognitive theory (see next section), Skaalvik and Skaalvik (2010) conceptualized teacher self-efficacy as “individual teachers’ beliefs in their own ability to plan, organize, and carry out activities that are required to attain given educational goals” (p. 1059). A large body of existing research has shown that teacher self-efficacy occupies a crucial role in enhancing the effectiveness of teacher teaching and student learning. Specifically, on the one hand, teacher self-efficacy correlates positively with teacher well-being (e.g., Brouwers & Tomic, 2000; Zee & Koomen, 2016), teacher professional practices (e.g., Gibson & Dembo, 1984), teacher job satisfaction (e.g., Avanzi et al., 2013; Caprara, Barbaranelli, Borgogni, & Steca, 2003), teacher commitment to teaching (e.g., Chesnut & Burley, 2015; Coladarci, 1992;

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Evans & Tribble, 1986), student motivation (e.g., Dembo & Gibson, 1985), and student achievement (e.g., Anderson, Greene, & Loewen, 1988; Kassen & Tze, 2014; Ross, 1992; Tschannen-Moran & Johnson, 2011). On the other hand, teacher self-efficacy has a negative correlation with teacher burnout (e.g., Betoret, 2006; Chwalisz, Altmaier, & Russell, 1992; Evers, Brouwers, & Tomic, 2002; Skaalvik & Skaalvik, 2009). Morris and Usher (2011) contended, "Although a growing body of research attests to the benefits associated with teaching self-efficacy, less is known about how teaching self-efficacy is cultivated" (pp. 232–233). Responding to this gap in the research literature, the present study was designed to examine the manner in which feedback from administrators, time spent observing colleagues' classes, job satisfaction, and work enjoyment predicted teacher self-efficacy for instruction.

## 2. Theoretical framework

This study was guided by Bandura's (1986, 1997) part of the social cognitive theory – that is, self-efficacy theory which is depicted as follows:

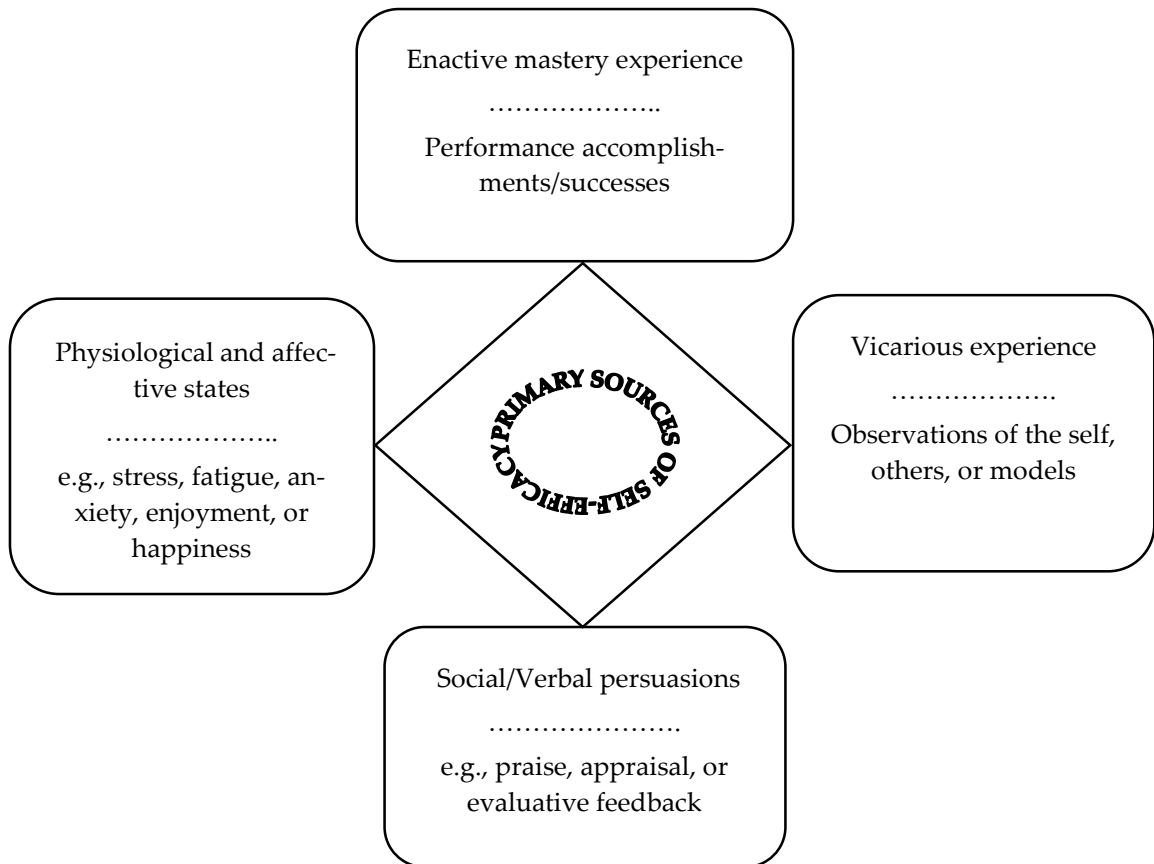
### 2.1. Definition of self-efficacy

In his social cognitive theory, Bandura (1986) defines self-efficacy as "people's judgements of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). Bandura emphasizes, "[Self-efficacy] is concerned not with the skills one has but with judgements of what one can do with whatever skills one possesses" (p. 391).

### 2.2. Principal sources of self-efficacy

Bandura (1997) theorizes that self-efficacy beliefs are constructed as individuals interpret information from four major sources: (a) enactive mastery experience, (b) vicarious experience, (c) verbal persuasion, and (d) physiological and affective states. Of these four self-efficacy sources, enactive mastery experience, Bandura postulates, is the most influential since it is derived from one's own personal experience, hence is the most authentic evidence of one's capabilities. He posits that performance successes would raise one's self-efficacy; whereas repeated performance failures would undermine it. In respect of the second source, Bandura explains that one's self-efficacy is also influenced by his/her vicarious experience – that is, visualizing other people perform, through which he/she can compare his/her performance with that of others and form a perception of his/her own capabilities. Regarding verbal persuasion, Bandura claims one's self-efficacy could be bolstered if others verbally persuade him/her that, for instance, he/she is capable to successfully perform a certain task. It should, however, be noted that the effectiveness of verbal persuasion (e.g., praise and evaluative feedback) is mediated not only

by who provides it, but also by the way in which the message is constructed (Bandura, 1997; Morris, Usher, & Chen, 2017; Pajares, 2006). For example, feedback from peers or inexperienced people tends to exert less influence upon one’s efficacy beliefs compared with that from professional experts or those who are experienced (Bandura, 1997). Or, as found by Parajes (2016), “knee-jerk praise or empty inspirational homilies” (p. 349) are unlikely to be an effective means of nurturing one’s positive beliefs about their capabilities. Finally, one’s physiological and affective states are also important indicators one uses to judge his/her efficacy. Such states comprise, for example, “stress, fatigue, anxiety, and mood” (Morris et al., 2017, p. 798). For instance, when one is suffering from fatigue or pains, his/her self-efficacy tends to be lowered compared with when he/she is in a good mood. We summarize Bandura’s theoretical framework for sources of self-efficacy as follows:



**Figure 1.** Theoretical framework for sources of self-efficacy (Bandura, 1997)

This theoretical framework informs the variables included in the model investigated in this study. Said differently, the present study addresses the following research question: How do feedback from one’s administrators (verbal persuasion), observation of one’s peers (vica-

rious experience), satisfaction with one's own performance (enactive mastery experience), and enjoyment of one's own work (physiological and affective states) contribute to the development of teachers' instructional self-efficacy?

### **3. Literature review**

In the existing literature, there is a large body of both quantitative and qualitative research examining the influence of Bandura's four hypothesized sources on teacher self-efficacy. The majority of the extant studies indicate that all four sources play roles in teacher self-efficacy development (e.g., Hendricks, 2016; Pfitzner-Eden, 2016; Phan & Locke, 2015; Poulou, 2007). However, those study results are not consistent with respect to the strength of each source. For example, Morris and Usher (2011), Pfitzner-Eden (2016), Poulou (2007), and Tschannen-Moran and McMaster (2009) found that mastery experience wields the greatest effect on teacher self-efficacy. In contrast, the studies by Johnson (2010) and Mills (2011) demonstrated that vicarious experience is the most influential source of teaching self-efficacy. Meanwhile, other researchers have observed that verbal persuasion is the predominant source that can raise or diminish teacher self-efficacy (Aydin & Hoy, 2005; Milner, 2002; Milner & Hoy, 2003; Phan & Locke, 2015). Completely different from the above-mentioned findings, the study by Palmer (2006) indicated that most of Bandura's sources of self-efficacy, including enactive mastery experience, vicarious experience, and verbal persuasion are not significant factors contributing towards teacher self-efficacy. The main source of teacher self-efficacy, found in Palmer's study, is cognitive pedagogical mastery – that is, “successes in understanding how to teach” (p. 349). Palmer considered this factor (cognitive pedagogical mastery) a potential additional source of self-efficacy in relation to those hypothesized by Bandura.

The literature suggests the inconsistencies regarding the impact level of Bandura's sources on teacher efficacy beliefs. In addition, there are still few studies investigating this issue in international or cross-nations contexts. In response to this need, the present study was conducted utilizing a large-scale, international data set with the participation of teachers from 34 countries to reexamine this issue.

## **4. Methodology**

### **4.1. Statistical method**

To examine how feedback from one's administrators, observation of one's peers, satisfaction with one's own performance, and enjoyment of one's own work contribute to the development of teachers' instructional self-efficacy, multiple linear regression was employed. Urdan (2017) writes that multiple linear regression “allows researchers to examine the nature and

strength of the relations between variables, the relative predictive power of several independent variables on a dependent variable" (p. 183). In addition, as explained by Field (2013), this form of statistical modeling is "a method in which all predictors are forced into the model simultaneously" (p. 322). The predictors used in the present study (i.e., feedback from one's administrators, observation of one's peers, satisfaction with one's own performance, and enjoyment of one's own work) were selected based entirely on the self-efficacy theoretical framework by Bandura (1997).

#### 4.2. Data sources and variables

The sample of this study, which was drawn from the OECD Teaching and Learning International Survey (TALIS) 2013 data set, consisted of 14,583 teachers from 34 countries (OECD, 2014). The survey questions included in the model as independent variables were presented in Table 1. These questions were answered on a Likert scale, with Items 46-TT2G46I, 31-TT2G31C, and 46-TT2G46E using a 4-point scale from *strongly disagree* to *strongly agree*, and Item 33-TT2G33B asking about the frequency of peer observation using a 6-point scale from *never* to *once a week or more*. Note that the TALIS 2013 employed a 4-point scale from *strongly disagree* to *strongly agree* in lieu of a 5-point scale. However, this is not a concern because, as admitted by Dillman, Smyth, and Christian (2014):

[W]hile many people agonize over the decision of whether or not to offer a midpoint [such as "neutral" or "neither disagree nor agree"], the literature suggests whether one offers a midpoint has little effect on the resulting data quality and conclusions drawn from the data. (p. 154)

**Table 1.** Independent variables included in the model

Independent Variables	Questions/Items	Scales
Performance satisfaction	46. How strongly do you agree or disagree with the following statement? <b>TT2G46I</b> – <i>I am satisfied with my performance in this school.</i>	1 – Strongly disagree 2 – Disagree 3 – Agree 4 – Strongly agree
Peer observation	33. On average, how often do you do the following in this school? <b>TT2G33B</b> – <i>Observe other teachers' classes and provide feedback.</i>	1 – Never 2 – Once a year or less 3 – 2-4 times a year 4 – 5-10 times a year 5 – 1-3 times a month 6 – Once a week or more
Administrative feedback	31. How strongly do you agree or disagree with the following statement about this school? <b>TT2G31C</b> – <i>Teacher appraisal</i>	1 – Strongly disagree 2 – Disagree 3 – Agree

	<i>and feedback are largely done to fulfil administrative requirements.</i>	4 – Strongly agree
Work enjoyment	46. How strongly do you agree or disagree with the following statement? TT2G46E – <i>I enjoy working at this school.</i>	1 – Strongly disagree 2 – Disagree 3 – Agree 4 – Strongly agree

The dependent variable in the model was assessed through the following survey question, measured on a 4-point Likert scale:

**Table 2.** Dependent variable included in the model

Dependent Variable	Question/Item	Scale
Teachers’ instructional self-efficacy	34. In your teaching, to what extent can you do the following? TT2G34L – <i>Implement alternative instructional strategies in my classroom.</i>	1 – Not at all 2 – To some extent 3 – Quite a bit 4 – A lot

Concerning the validity of self-efficacy measures, Bandura (2006) emphasizes, “Efficacy items should accurately reflect the construct. Self-efficacy is concerned with perceived capability. The items should be phrased in terms of *can do* rather than *will do*. *Can* is a judgment of capability; *will* is a statement of intention” (p. 308, italics original). Furthermore, Bandura (2006) maintains, “Perceived self-efficacy is a judgment of capability to execute given types of performances” (p. 309). That is, as elucidated by Klassen and Usher (2010), self-efficacy measures/scales need to adhere to the tenet of specificity; they should be constructed in the way that can measure one’s judgements of their capabilities “to carry out specific tasks or in a specific domain” (p. 19). The item/question used in this study (which measures teachers’ self-efficacy for implementing alternative instructional strategies) is congruent with Bandura’s (1986) definition of self-efficacy (i.e., one’s beliefs about their competence to produce given attainments rather than their actual capability or intention) as well as with Bandura’s (2006) principle of specificity. This item can, therefore, be seen as a valid measure of self-efficacy within the scope of the present study, for it “measure[s] what [it] purport[s] to measure” (Bandura, 2006, p. 318).

### 4.3. Data analysis

The data related to the five above-mentioned variables were first screened to identify and evaluate the seriousness of missing cases. This first step produced the results that the variable job satisfaction had 3.7% cases missing, peer observation 3.7%, administrative feedback 7.3%, work enjoyment 3.8%, and teacher self-efficacy for instructional strategies 3.7%. Because the sample size is large (14,583 participants), and all the variables each had less than 10% cases missing, *Listwise* was utilized to exclude those missing cases from the whole analysis (Mertler &

Reinhart, 2017). Thereafter, the data were screened again to evaluate the normal distribution of the variables; the evaluation indicates that the normality of distributions of these five variables is tenable. Finally, multiple linear regression analysis was conducted employing SPSS to determine how feedback from one's administrators, observation of one's peers, satisfaction with one's own performance, and enjoyment of one's own work contribute towards nurturing teachers' instructional self-efficacy.

## 5. Results

A multiple linear regression analysis was conducted to examine the manner in which feedback from administrators, time spent observing colleagues' classes, job satisfaction, and work enjoyment predicted teacher self-efficacy for instructional strategies. As previously mentioned, all these four predictors were concurrently entered into the model. The regression results demonstrated that tolerance was high (0.859 for job satisfaction, 0.980 for peer observation, 0.947 for administrative feedback, and 0.832 for work enjoyment), suggesting that multicollinearity was not a concern (Mertler & Reinhart, 2017). The results of the estimation of the coefficients for the linear regression model revealed that the overall model significantly predicted the level of teacher self-efficacy for instruction  $R^2 = 0.062$ ,  $R^2_{adj.} = 0.062$ ,  $F(4,13154) = 218.617$ ,  $p < 0.001$ . However, as the results demonstrated, this model accounted for only 6.2 percent of the variance in teacher self-efficacy for instructional strategies, leaving up to 93.8 percent of the variance in teachers' instructional self-efficacy unexplained. The results also indicated that out of the four independent variables included in the model, job satisfaction ( $\beta = 0.203$ ,  $p < 0.001$ ) was the strongest predictor and positively related with teacher instructional self-efficacy, followed by time spent observing other teachers' classes ( $\beta = 0.089$ ,  $p < 0.001$ ), and work enjoyment ( $\beta = 0.046$ ,  $p < 0.001$ ). These two predictors were also positively associated with teacher instructional self-efficacy. Interestingly, the coefficient estimate for feedback from administrators ( $\beta = -0.010$ ,  $p = 0.226$ ) was not statistically significant. A *post hoc* analysis was then also conducted using G\*Power to calculate the power for this multiple regression design. The power achieved was 1.0, indicating a high level of power which reduces the chance of making a type II error (Mertler & Reinhart, 2017). A summary of regression coefficients is presented in Table 3.

**Table 3.** Coefficients for model variables

	<i>B</i>	$\beta$	<i>t</i>	<i>p</i>	Bivariate <i>r</i>	Partial <i>r</i>
Job satisfaction	0.281	0.203	22.279	<0.001	0.227	0.191
Time spent observing colleagues' classes	0.042	0.089	10.465	<0.001	0.108	0.091
Feedback from administrators	-0.010	-0.010	-10.210	0.226	-0.052	-0.011
Work enjoyment	0.054	0.046	4.974	<0.001	0.131	0.043

## 6. Discussion and conclusion

The results indicate that first, teachers who are more satisfied with their teaching performance are most likely to have a higher level of instructional self-efficacy than those who are not. Second, teachers who spend more time observing the teaching of their peers tend to be more confident in their ability for instruction as opposed to those spending less time in so doing. Third, teachers with more work enjoyment report having a higher level of self-efficacy for instruction compared with those with less work enjoyment. It is worth noting that of the three variables significantly contributing to informing teacher instructional self-efficacy, teaching performance satisfaction is the most influential predictor; whereas, feedback from administrators does not appear to have an influence. These results are, on the one hand, consistent with Bandura's (1997) theory as well as previous empirical research (e.g., Morris & Usher, 2011; Pfitzner-Eden, 2016; Poulou, 2007; Tschannen-Moran & Hoy, 2007) suggesting that enactive mastery experience (i.e., self-perception of successful job performance) is the most powerful factor supporting the development of teachers' instructional self-efficacy. On the other hand, the results of this study contradict the assertion that verbal persuasion (i.e., appraisal and feedback) is a primary source of teacher self-efficacy (cf. Aydin & Hoy, 2005; Bandura, 1997; Milner, 2002; Milner & Hoy, 2003; Pfitzner-Eden, 2016; Phan & Lock, 2015). Regarding verbal persuasion, Bandura (1997) and Parajes (2016) state that its potency depends on the credibility and knowledgeableness or expertise of the persuader. Similarly, Pitts, Davidson, and McPherson (2000) posit that appraisal and feedback are meaningful only when they are specific and genuine. Due to the dearth of qualitative data, the reason for administrative feedback being an insignificant predictor of teacher self-efficacy, in this study, is left unexplained. To address this limitation, more qualitative studies are needed to provide explanations for these quantitative findings. In addition, further research is also warranted to identify the remaining predictors of teacher self-efficacy which are still unknown in this model.

These limitations notwithstanding, the results of the present study significantly contribute to the field as well as offer several implications for practice – specifically, how teachers and school leaders should cultivate teachers' self-efficacy for instruction – and future research.

## 7. Implications

Teachers' self-efficacy correlates positively with teacher well-being (e.g., Zee & Koomen, 2016), teacher professional practices (e.g., Gibson & Dembo, 1984), teacher job satisfaction (e.g., Avanzi et al., 2013), teacher commitment to teaching (e.g., Chesnut & Burley, 2015), and student achievement (e.g., Kassen & Tze, 2014); thus, cultivating teachers' self-efficacy should be one of the primary goals within schools. The current study has important implications for schools to consider in this respect. First, as the results of this study indicate, teachers' sense of efficacy can



be nurtured through enactive, vicarious, and physiological and affective means with enactive experience being the most influential. It is hence desirable that teachers be, in Schön's (1983) words, reflective practitioners. That is, they should self-reflect on their own teaching performance regularly not only to gain real-world experience or transform their professional practice (Dewey, 1933, 1938; Schön; 1983), but also to enjoy and celebrate their success since, as these findings reveal, experiencing a sense of instructional accomplishment will most likely strengthen teachers' beliefs about their efficacy. According to Schön (1983), there are two ways in which teachers can reflect on their practice: reflection *in* action (i.e., teacher reflection occurs during or in the midst of ongoing action/teaching) and reflection *on* action (i.e., teacher reflection takes place after action/teaching) (see Schön, 1983).

Furthermore, this investigation's findings demonstrate that verbal persuasion (i.e., appraisal and feedback) from administrators do not seem to contribute significantly to teachers' instructional self-efficacy. Given these findings, administrators should, perhaps, rely less on administrative feedback as the primary mode for increasing teachers' instructional self-efficacy. Instead, the results of this study suggest that it may be far more effective for schools to create opportunities for teachers to observe one another, and more importantly, engage in peer review of one another's teaching (see Bernstein, 2008). It merits noting that teachers should be involved in these activities (i.e., peer observations, and/or – to quote Bernstein (2008, p. 48) – “peer review of teaching”) in a frequent manner because, as postulated by Bandura (1997) and Morris et al. (2017), not only the quality of events, but also the frequency an individual takes part in those events is of crucial importance in building teacher self-efficacy. As Morris et al. (2017) explain, “[T]eachers may become more confident from their observations of other teachers, but if opportunities to watch their colleagues are limited, so too may be the influence of these vicarious experiences on teaching self-efficacy” (p. 823).

The results of this study also, as noted earlier, suggest directions for future research. Specifically, although the coefficients estimated within this regression model were statistically significant, the model itself explained only approximately 6% of the variability observed in the dependent variable. Thus, future research should continue to investigate causes of how and why teachers feel confident to implement different instructional strategies in their classrooms. Additionally, it is worth noting that the current study utilized data taken from an international sample of teachers. Future studies may want to examine how teacher self-efficacy is cultivated within different local contexts and to see if Bandura's model is mediated by contextual variables.

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