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general equilibrium models with nomin
SOCIAL PERSUASIONS BY TEACHERS AS A SOURCE OF STUDENT SELF-EFFICACY:
THE MODERATING ROLE OF PERCEIVED TEACHER CREDIBILITY

SUNGJUN WON, SUN-YOUNG LEE, AND MIMI BONG
Korea University

The primary purpose of this study was to ascertain whether the degree to which Korean middle school students perceived their teachers to be credible made a difference in the effectiveness of teachers’ persuasion as a source of students’ academic self-efficacy. In the contexts of both general school learning and a specific subject of Korean language and literature, social persuasions by teachers were a significant predictor of student self-efficacy. Students’ academic self-efficacy, in turn, was a significant predictor of students’ expected final examination scores. Although perceived teacher credibility did not predict student self-efficacy directly, it interacted significantly with teacher persuasion in the prediction of student self-efficacy, as determined by the latent interaction analysis. Consistent with Bandura’s (1997) assertion and our hypothesis, students reported stronger academic self-efficacy as they perceived the teachers who delivered the social persuasion to be more credible.

Social cognitive theory has emerged as a prominent theoretical framework for understanding student motivation, learning, and achievement over the past several decades (Bandura, 1997). In particular, academic self-efficacy has proven to be the most powerful predictor of student achievement among various motivational constructs (Bong & Skaalvik, 2003; Pajares, 1996). Owing to its well-established predictive utility, much attention has been paid to the development and maintenance of this important belief. Many researchers have thus examined the relative utility of the four primary sources of self-efficacy information for student self-efficacy—mastery experience, vicarious experience, social persuasions, and physiological states (e.g., Klassen, 2004; Lent, Lopez, & Bieschke, 1991; Usher & Pajares, 2009).

Among these sources, our focus in this research was on the social persuasion delivered by teachers. Specifically, we sought to examine whether students’ perceptions of credibility in their teachers would make a difference in the effectiveness of teachers’ social persuasions as a source of information in shaping student self-efficacy. We hypothesized that perceived credibility of teachers would moderate the power of their social persuasions such that, when efficacy-building comments and feedback were provided by teachers that students perceived to be highly credible, they would increase student self-efficacy significantly. When similar comments and feedback were conveyed by teachers that students did not perceive to be credible, they would not necessarily affect student self-efficacy.

Messages are more convincing when coming from reliable than unreliable sources (Hovland & Weiss, 1951). The hypothesized moderation of social persuasion effects by persuader credibility is what Bandura (1997) has anticipated, adopting the longstanding discovery from communications research. This claim, however, has not undergone empirical scrutiny in the teaching–learning context. In addition to testing Bandura’s theoretical tenet in classroom situations, ascertaining the role of credibility in teachers for imbuing academic confidence in their students will be of practical import for teacher education.

Sungjun Won is now studying at the Ohio State University.

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Self-efficacy refers to the subjective judgment of individuals regarding their capability to perform a specific task successfully in a given context (Bandura, 1986). The importance of academic self-efficacy, or students’ subjective convictions that they can learn and perform given academic tasks satisfactorily at designated levels (Schunk, 1991), has been repeatedly demonstrated in learning contexts. Besides its predictive power for student achievement, academic self-efficacy has exhibited strong explanatory utility for students’ choice of learning activities, amount and intensity of effort, persistence in the face of obstacles, and degree of self-regulation (Bong & Skaalvik, 2003; Pajares, 1996; Schunk, 1991).

Given such critical role of self-efficacy in learning processes and educational outcomes, a number of investigators have closely examined the four sources of self-efficacy information identified by Bandura (1986, 1997). Students build and adjust their self-efficacy beliefs by interpreting their mastery experience, vicarious experience, social persuasions, and emotional and physiological states. Among these self-efficacy sources, one’s own past mastery experience has consistently explained the largest variance in student self-efficacy (Lopez, Lent, Brown, & Gore, 1997; Usher & Pajares, 2006), in agreement with Bandura’s (1997) assertion. Emotional and physiological states such as anxiety, which are detrimental to students’ competence appraisals, have often emerged as the second strongest, yet negative, predictor of student self-efficacy, following mastery experience (Joët, Usher, & Bressoux, 2011; Usher, 2009; Usher & Pajares, 2006, 2008).

Unlike mastery experience or emotional and physiological states that are self-focused, vicarious experience and social persuasions are other-focused sources of self-efficacy (Klassen, 2004). They involve social agents that communicate efficacy-relevant information to the individual in question. Past research has uncovered factors related to these social agents that moderate the power of self-efficacy information that they deliver. Similarity of models to observers in personal attributes such as age and gender is one such factor. Students are more strongly influenced by models that they perceive to be similar to themselves than by dissimilar models when estimating their self-efficacy (Schunk, 1987). Types of performance demonstrated by the model are another moderator of vicarious experience. Classroom experiments showed that students reported stronger self-efficacy after observing coping models, who initially struggled but gradually overcame difficulties, than after observing mastery models, who put together competent performance from the very beginning (Schunk & Hanson, 1985, 1989; Schunk, Hanson, & Cox, 1987). Modeling experiments hence suggest that power of vicarious experience in shaping student self-efficacy partly depends on students’ evaluation of the social model.

In comparison, research on potential moderators of social persuasions has been scarce. Early experimental studies on social persuasions by Schunk (1982, 1984) focused on different types of feedback and demonstrated that verbal feedback from instructors emphasizing students’ ability and effort for making progress significantly improved student self-efficacy. Whereas this research has shown that the effect of social persuasions differs depending on the type of messages delivered by the social agent, it has not addressed factors related to social agents as possible moderators of their social persuasions. As a result, information is lacking on the characteristics of social agents that can intensify or diminish the effectiveness of their social persuasions on students’ academic self-efficacy.

Social Persuasions by Teachers as a Source of Students’ Academic Self-Efficacy

Students form their academic self-efficacy partly based on social persuasions from others regarding their capability (Bandura, 1997). Social persuasions are particularly effective for students who do not recognize or are not reaching their potential. Social persuasions also help learners
sustain their self-efficacy beliefs when they face challenge and doubt their own capability to succeed (Bandura, 1997; Schunk, 1985).

Although social persuasions have been associated with self-efficacy repeatedly, they have often failed to demonstrate unique predictive utility in the presence of other sources (Lent et al., 1991; Usher & Pajares, 2008). For instance, social persuasions significantly predicted, along with other sources, the self-efficacy of high school students toward algebra but not their self-efficacy toward geometry (Lopez et al., 1997). Similarly, while mastery experience consistently accounted for the self-efficacy of students in writing at all school levels, social persuasions explained only the self-efficacy of high school students and not that of elementary or middle school students (Pajares, Johnson, & Usher, 2007).

These inconsistent findings concerning the predictive utility of social persuasions may be attributed in part to how they have been operationalized in past research. Researchers have measured social persuasions with scales assessing the extent to which students receive encouraging messages about their competence from significant others such as parents, teachers, peers, and other adults (e.g., Joët et al., 2011; Lent et al., 1991; Lopez et al., 1997; Matsui, Matsui, & Ohnishi, 1990; Pajares et al., 2007; Usher & Pajares, 2009). This approach inevitably intermixes persuasions from different social agents. However, some students might receive strong and positive social persuasions from teachers but not from their parents, whereas others might experience the opposite. Students might be quick to adjust their self-efficacy upward when praised by a teacher but not when equally praised by a peer. Assessing social persuasions as a single source without distinguishing between different social agents makes it difficult to separate the unique contribution of the social persuasion delivered by each social agent or discern the specific characteristics of social agents that strengthen or weaken their social persuasions to the listening student (Ahn, Bong, & Kim, in press).

Among diverse social agents that provide persuasions to adolescent learners regarding their scholarly competence, teachers are easily the most influential figure. Teachers generally wield a significant influence on students at school (Wentzel, Battle, Russell, & Looney, 2010). They transmit their values to students through various methods of verbal and nonverbal communications. The manner with which teacher–student interaction takes place also affects the development of student motivation (Felner, Ginter, & Primavera, 1982; Marchant, Paulson, & Rothlisberg, 2001; Wentzel, 1997; Wentzel et al., 2010). Implicit and explicit messages that teachers convey are capable of modifying students’ beliefs about the purpose of learning, students’ assessment of their own academic capability, as well as students’ engagement and achievement at school (Ryan & Patrick, 2001; Turner et al., 2002).

In fact, women working in the fields of mathematics, science, and technology often trace their initial self-efficacy and career success to the social persuasions they received during their school years from teachers whom they trusted (Zeldin & Pajares, 2000). When Ahn et al. (in press) assessed vicarious experience and social persuasions conveyed by family members, teachers, and peers separately, it was those delivered by teachers that displayed the strongest predictive utility for student self-efficacy. Taken together, evidence suggests that teachers are the most important social agent that communicates self-efficacy information to adolescent learners.

**Perceived Credibility of Teachers as a Moderator of Their Social Persuasions**

What type of teachers would be particularly effective for delivering efficacy-relevant social persuasions to students? Credibility of persuaders is one quality that makes their messages more convincing to the audience (Bandura, 1997; Schunk, 1985). Persuader credibility has been studied extensively in communications and counseling research (e.g., Chaiken & Maheswaran, 1994; Hovland & Weiss, 1951; McCroskey & Teven, 1999; McCroskey & Young, 1981; Pornpitakpan,
Won et al.

2004; Tormala, Briñol, & Petty, 2006), with the overall finding that persuasion is more effective when the persuader is judged credible. Bandura (1997) likewise claimed that persuaders who are perceived as credible, knowledgeable, and competent are more powerful in enhancing the self-efficacy of their listeners than those who lack these characteristics. Students are thus expected to be more responsive to the social persuasion when it is provided by the teachers that they consider credible.

Existing research on teacher credibility has indeed demonstrated its positive associations with student motivation and learning. Gray, Anderman, and O’Connell (2011), for example, examined the role of teacher credibility in learning contexts and observed that student perceptions of teacher credibility were positively related to increases in students’ knowledge. An experimental study with college students also showed that students reported greater motivation and positive affect when they were exposed to the scenario of being taught by credible teachers as opposed to by unreliable teachers (Pogue & AhYun, 2006). Although it is almost commonsensical to anticipate that the same social persuasion to improve student self-efficacy will be more potent when delivered by credible teachers than by noncredible ones, no empirical research to our knowledge has directly tested this hypothesis.

PRESIDENT STUDY

To test whether perceived credibility of teachers would moderate the power of their social persuasions as a source of student self-efficacy, we assessed student perceptions of social persuasions from teachers, along with student perceptions of credibility of the teachers, among Korean middle school students. Consistent with the previous research on teachers’ verbal feedback on student self-efficacy (Schunk, 1982, 1984; Zeldin & Pajares, 2000), we operationally defined teachers’ social persuasions as verbal encouragement and positive feedback indicating that a student could perform well academically with the investment of effort.

We assessed the social persuasion and credibility of teachers separately for homeroom teachers and subject matter teachers in Korean language and literature. In Korean secondary schools, a clear distinction exists in the expected role of homeroom teachers and that of subject teachers (Chi & Kim, 2004). As in Western countries, subject teachers are mainly held accountable for students’ subject matter learning. Homeroom teachers in Korean middle and high schools, in contrast, are presumed to oversee an overall academic achievement, emotional and behavioral adjustment, peer relationships, as well as academic career of the students in their homeroom class (Lee & Jeung, 2006). They hold morning and evening homeroom assemblies every day, maintain a close relationship with the students in their homeroom class, and are typically considered a “surrogate parent” at school (Seol, 2008). For this reason, Korean students treat their homeroom and subject teachers differently (Bong, Hwang, & Song, 2010).

Social persuasions from homeroom teachers on students’ academic competence are also wider reaching than those from subject teachers (Lee & Jeung, 2006). Because homeroom teachers are responsible for their students’ overall academic achievement, they counsel students and parents about students’ academic standings in all subject areas. Whereas subject teachers may offer social persuasions to enhance student self-efficacy in the subject that they teach, homeroom teachers provide social persuasions to their students with the goal of augmenting students’ academic self-efficacy toward school learning in general. Given that self-efficacy is a context-specific construct (Bandura, 1997; Pajares, 1996), we deemed it important to represent this difference in scope of influence between homeroom and subject teachers in our assessment and analysis. Nevertheless, we expected that credibility of the respective teacher perceived by the students would consistently moderate the relationship between teachers’ social persuasions and students’ academic self-efficacy in the corresponding context.

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The following hypotheses were thus generated. First, student perceptions of social persuasions delivered by teachers would positively predict student self-efficacy in the given academic context. Second, student self-efficacy would mediate the relationship between social persuasions from teachers and expected final examination scores reported by the students. Third and of particular interest in the present research, student perceptions of teacher credibility would moderate the relationship between teacher persuasion and student self-efficacy such that the relationship would become stronger as students judged their teachers to be more credible. We expected to observe a consistent pattern across different types of teachers.

METHOD

Participants and Procedure

Four hundred and fourteen students from a public middle school in a metropolitan city in Korea participated in the study. Thirty students were excluded due to the suspected insincerity of their responses (e.g., identical responses to all survey items on the same page), reducing the final sample size to \( N = 384 \) (176 seventh graders and 208 ninth graders). The sample included slightly more boys (\( n = 215, 56.0\% \)) than girls (\( n = 168, 43.8\% \)). Students at this school came primarily from middle class families.

To minimize any potential confounding due to having a homeroom teacher who was also a Korean language teacher, we only recruited students from classes whose homeroom teachers were not teachers of Korean language and literature. All participating students thus responded to teacher-related items in reference to two different teachers. The paper-and-pencil survey took place during regular classroom hours with the permission of the school and individual teachers, 3 weeks before the first semester final examinations. Students were told that they should answer the items as honestly as possible and that they could refuse to answer any of the items on the survey. They were also assured of the confidentiality of their individual responses.

Measures

Teacher Persuasion. We adopted four items that specifically assess perceived social persuasions delivered by teachers as a source of student self-efficacy (Ahn, Usher, Butz, & Bong, 2016). Social persuasions from homeroom teachers and those from Korean language teachers were assessed separately (e.g., “When I’m struggling with [studying/Korean language and literature], my [homeroom/Korean language] teacher tells me that I can do well,” “My [homeroom/Korean language] teacher tells me that everyone can solve difficult problems if she or he tries hard”). Students responded to these items on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The reliability coefficients of the social persuasion by teacher scale were \( \alpha_s = .93 \) for both homeroom and Korean language teachers.

Teacher Credibility. Students responded to six items to rate their perceptions of teacher credibility, using a 7-point bipolar scale. The credibility measure was originally developed by McCroskey and Young (1981), with its short version tested by Gray et al. (2011). We adopted the short version, which consists of six pairs of opposing adjectives (e.g., “intelligent vs. unintelligent,” “untrustworthy vs. trustworthy”). Students selected which of the two opposing expressions they agreed with as an adjective describing their teachers and how much, on a scale of 1 (strongly disagree that the teacher is “untrustworthy”) to 7 (strongly agree that the teacher is “trustworthy”). Credibility of homeroom teachers and that of Korean language teachers were rated separately. All items were coded such that high scores indicated greater credibility. The reliability coefficients in the present study were acceptable, with \( \alpha_s = .82 \) for homeroom teachers and .86 for Korean language teachers.
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Academic Self-Efficacy. Students also responded to eight items for academic self-efficacy, using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The items came from the self-efficacy subscale of the Student Motivation in the Learning Environment Scales (SMILES; Bong et al., 2012). We assessed student self-efficacy toward school learning in general and the subject of Korean language and literature. Sample items were, “I can understand even the complicated things presented in (class/Korean language and literature class),” “I feel confident that I can follow the (class/Korean language and literature class) well even if it’s difficult.” The reliability coefficients were acceptable for both academic self-efficacy in general school learning ($\alpha = .95$) and academic self-efficacy in Korean language and literature ($\alpha = .96$).

Expected Final Examination Scores. We asked students to report the scores they expected to attain on the final examination in two subjects, Korean language and literature and science. These scores were obtained to ascertain the predictive validity of the academic self-efficacy measure. Possible scores on the final examinations ranged from 0 to 100. We used expected final examination scores in Korean language and literature to test the predictive utility of academic self-efficacy in Korean language and literature that students reported. To analyze the predictive validity of academic self-efficacy toward general school learning, we combined expected final examination scores in both Korean language and literature and science.

Data Analysis

We computed descriptive statistics and correlation coefficients among variables using SPSS 22.0. Next, we tested measurement models with the homeroom teacher data and Korean language teacher data, using confirmatory factor analysis (CFA). To evaluate the model fit, we consulted several fit indexes recommend by Hu and Bentler (1999). Because the chi-square statistics ($\chi^2$) is sensitive to sample size, we used values of the Tucker–Lewis index (TLI) greater than .95, comparative fit index (CFI) greater than .95, root mean square error of approximation (RMSEA) less than .06, and standardized root mean square residual (SRMR) less than .08 as indicating a good fit (Hu & Bentler, 1999). Values of the TLI and CFI greater than .90, RMSEA less than .08, and SRMR less than .10 were judged to represent an acceptable fit (Kline, 2005).

We then conducted structural equation modeling (SEM) to assess the predictive utility of social persuasions from teachers for student self-efficacy. To examine whether student self-efficacy mediated the relationship between teacher persuasion and expected final examination scores, we adopted a bootstrap procedure with 1,000 bootstrapping samples. A bias-corrected confidence interval was used, taking into account that the distribution of indirect effects is not normal (MacKinnon, Fairchild, & Fritz, 2007; Williams & MacKinnon, 2008).

The hypothesized interaction between teacher persuasion and teacher credibility in the prediction of student self-efficacy was tested with the latent moderated structural equations (LMS) approach (Klein & Moosbruger, 2000). This approach has several advantages in testing interactions, including statistical efficiency (i.e., only one additional parameter needs to be estimated) and measurement error corrections of latent constructs (Kelava et al., 2011). Because traditional model fit indexes such as TLI, CFI, RMSEA, and SRMR are not applicable to the interaction model, we constructed models with and without the latent interaction term and consulted the log-likelihood ratio test, Akaike information criteria (AIC), Bayes information criteria (BIC), and sample-size adjusted BIC (Kelava et al., 2011; Maslowsky, Jager, & Hemken, 2015). The log-likelihood ratio test is used to determine whether adding the interaction significantly improves the model fit. Smaller values of AIC, BIC, and sample-size adjusted BIC suggest a better fit of the model to the empirical data. Mplus 7.31 program (Muthén & Muthén, 1998–2012) was used to test all measurement and

DOI: 10.1002/pits
Teacher Credibility

### Table 1
Descriptive Statistics and Zero-Order Correlation Coefficients for Observed Variable

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>M</th>
<th>SD</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teacher persuasion</td>
<td>–</td>
<td>.59</td>
<td>.47</td>
<td>.05</td>
<td>3.96</td>
<td>1.46</td>
<td>.93</td>
</tr>
<tr>
<td>2. Teacher credibility</td>
<td>.59</td>
<td>–</td>
<td>.31</td>
<td>.02</td>
<td>4.53</td>
<td>1.22</td>
<td>.86</td>
</tr>
<tr>
<td>3. Academic self-efficacy</td>
<td>.32</td>
<td>.24</td>
<td>–</td>
<td>.38</td>
<td>4.48</td>
<td>1.19</td>
<td>.96</td>
</tr>
<tr>
<td>4. Expected final examination score</td>
<td>.07</td>
<td>.05</td>
<td>.46</td>
<td>–</td>
<td>83.64</td>
<td>13.06</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>4.50</td>
<td>4.69</td>
<td>4.41</td>
<td>79.88</td>
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<tr>
<td>SD</td>
<td>1.62</td>
<td>1.19</td>
<td>1.24</td>
<td>15.03</td>
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<tr>
<td>α</td>
<td>.93</td>
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</tbody>
</table>

N = 384. Coefficients from the homeroom teacher data are presented below the diagonal; coefficients from the Korean language teacher data are presented above the diagonal. Expected final examination scores ranged from 0 to 100. The response scale for all other variables ranged from 1 to 7.

*p < .001.

### Results

### Descriptive Statistics and Correlation Coefficients

Less than 3.91% of the responses were missing across all items, except for the two items that asked students to report their expected final examination scores, for which 17.96% of the answers were missing. To determine whether it was primarily low-achieving students who did not respond to these items, we performed independent samples t-tests comparing the academic self-efficacy scores of the responding and nonresponding students. There was no significant difference between the participants with and without expected final examination scores. We thus used the full information maximum-likelihood (FIML) method to impute the missing data for SEM.

Descriptive statistics and correlation coefficients for all variables are reported in Table 1. Student perceptions of teacher persuasion and teacher credibility were positively correlated with each other as well as with student self-efficacy in both the homeroom teacher and Korean language teacher data. Academic self-efficacy of the students correlated positively with their expected final examination scores in both data sets.

### Measurement Models

Before examining the predictive relationship between variables, we tested measurement models that included all latent variables with the individual items as their indicators. The measurement model demonstrated acceptable fit to the homeroom teacher data, \( \chi^2(132, N = 384) = 278.28, p < .001 \) (TLI = 948, CFI = .955, RMSEA = .054, SRMR = .038). The measurement model with the Korean language teacher data resulted in the TLI value that was slightly below the cutoff criteria, \( \chi^2(132, N = 384) = 408.34, p < .001 \) (TLI = 898, CFI = .912, RMSEA = .074, SRMR = .046). Based on the modification index and similarity in the wording of items, one error covariance was incorporated between two self-efficacy items. This change improved the fit of the Korean language teacher model to an acceptable level, \( \chi^2(131, N = 384) = 346.55, p < .001 \) (TLI = 920, CFI = .931, RMSEA = .066, SRMR = .045). This error covariance path thus remained in all subsequent models. All factor loadings were significant at \( p < .001 \) and substantial in magnitude.
Next, we performed SEM to examine whether perceived teacher persuasion significantly predicted student self-efficacy and whether student self-efficacy mediated the relationship between perceived teacher persuasion and expected final examination scores. The model fit indexes were acceptable with both the homeroom teacher, $\chi^2(149, N = 384) = 305.19, p < .001$ (TLI = .947, CFI = .954, RMSEA = .052, SRMR = .040) and Korean language teacher data, $\chi^2(131, N = 384) = 377.56, p < .001$ (TLI = .919, CFI = .930, RMSEA = .064, SRMR = .048).

Figure 1 presents the results. The predictive pattern was highly similar across the homeroom and Korean language teacher models. Consistent with our hypothesis, social persuasions delivered by both homeroom ($\beta = .27, p < .001$) and Korean language teachers ($\beta = .46, p < .001$) positively predicted student self-efficacy beliefs. Student self-efficacy, in turn, positively predicted expected final examination scores ($\beta_s = .47$ and .37 in the homeroom and Korean language teacher models, respectively). Perceived teacher credibility did not predict student self-efficacy directly in either model.

We evaluated the statistical significance of the indirect effect associated with the path from teacher persuasion to expected final examination scores via student self-efficacy, using a bootstrap procedure with 1,000 bootstrapping samples and a 95% bias-corrected confidence interval. The standardized indirect effect was .13 ($p < .01$) in the homeroom teacher model and .17 ($p < .001$) in the Korean language teacher model. The confidence intervals did not include zero, supporting the statistical significance of the indirect effect in both the homeroom teacher (95% CI = .37, 1.81) and Korean language teacher models (95% CI = .93, 2.35). Our second hypothesis on self-efficacy mediation was therefore supported.

**SEM with Latent Interaction**

Finally, we introduced the latent interaction term between teacher persuasion and teacher credibility to the model. Based on the LMS approach, we compared the fit of the interaction model to that of the previous SEM model without the interaction term. The log-likelihood ratio test between the two models was significant with both the homeroom teacher, $\Delta \chi^2(1, N = 384) = 10.56, p < .01$, and the Korean language teacher data, $\Delta \chi^2(1, N = 384) = 5.03, p < .05$. In addition, the values of AIC, BIC, and adjusted BIC became smaller in the models with the interaction term with both the homeroom teacher ($\Delta$ AIC = 19.17, $\Delta$ BIC = 15.22, $\Delta$ adjusted BIC = 19.40) and the Korean language teacher data ($\Delta$ AIC = 10.52, $\Delta$ BIC = 6.58, $\Delta$ adjusted BIC = 9.76), compared to those in the models without the latent interaction.

The results are shown in Figure 2. The interaction between student perceptions of teacher persuasion and those of teacher credibility significantly predicted student self-efficacy in both general school learning and Korean language and literature. Supporting our hypothesis, the predictive power of teacher persuasion on student self-efficacy depended on student perceptions of teacher credibility. The regression coefficients of the latent interaction terms on student self-efficacy were positive in both models ($\beta = .21, p < .01$, in the homeroom teacher model and $\beta = .14, p < .05$, in the Korean language teacher model), indicating that the relationship between teacher persuasion and student self-efficacy became stronger as students reported perceiving greater credibility in the respective teachers. Figure 3 depicts the changes in the strengths of the predictive relationship between teachers’ social persuasions and students’ academic self-efficacy across different levels of perceived teacher credibility. Consistent with our expectation, the interaction pattern was highly similar across the general and specific learning contexts.
Figure 1. Standardized path coefficients from the structural equation models. Only significant paths at $p < .05$ are presented. Coefficients from the homeroom teacher model (left) and the Korean language teacher model (right) are presented. Error terms are not presented for clarity.

*** $p < .001$. 
FIGURE 2. Standardized path coefficients from the structural equation models with latent interaction. Only significant paths at \( p < .05 \) are presented. Coefficients from the homeroom teacher model (left) and the Korean language teacher model (right) are presented. Error terms are not presented for clarity.

* \( p < .05 \);
** \( p < .01 \);
*** \( p < .001 \).
FIGURE 3. Interaction between social persuasions and credibility of teachers on student self-efficacy from the homeroom teacher model (left) and the Korean language teacher model (right).
DESIGN

Despite many studies on the sources of self-efficacy, rarely have researchers performed direct empirical investigations on the factors that strengthen or weaken the effectiveness of teachers’ social persuasions in bolstering student self-efficacy. This is unfortunate because, of different social agents for adolescents, teachers are arguably the most influential one in classroom contexts, an idea reinforced by both qualitative and quantitative analyses of instructional discourse (Gehlbach, Brinkworth, & Harris, 2012; Turner et al., 2002). Schunk (1982) has also demonstrated that a simple attributional utterance from a teacher was enough to raise self-efficacy of the students who used to suffer from gross deficits in arithmetic skills. It was of great interest, therefore, to learn the characteristics of teachers that make their social persuasions particularly effective in instilling a sense of academic self-efficacy in their students.

One of our primary goals in the current study was to ascertain the role of social persuasions delivered by teachers as an important source of self-efficacy information for students. Another goal was to test the credibility of teachers as a partial determinant of their persuasive power in the appraisal of students’ academic self-efficacy. Supporting Bandura’s claim (1997), students’ recollections of positive verbal messages from teachers indeed predicted students’ subjective convictions that they could learn and perform successfully at school if they tried hard and did not give up. Also consistent with previous findings, students’ academic self-efficacy was a significant predictor of their expected future achievement. Most germane to the aim of this research, the interaction between student perceptions of teachers’ social persuasions and teachers’ credibility on students’ academic self-efficacy proved significant.

Teacher Persuasion as a Predictor of Student Self-Efficacy

In much of the extant research, student perceptions of social persuasions from all possible social figures have been aggregated into one (e.g., Lent et al., 1991; Lopez et al., 1997; Usher & Pajares, 2009). However, the nature of social persuasions could differ widely depending on who the persuader is. Indeed, recent research hinted at such a possibility by obtaining different relationships between social persuasions from diverse social figures (i.e., family members, teachers, and peers) and students’ academic self-efficacy (Ahn et al., 2016). To avoid any confounding effects due to social figures, we only examined the unique contribution of social persuasions from teachers to students’ academic self-efficacy in this study.

Our findings indicate that teachers’ persuasion alone could predict students’ academic self-efficacy. Students who reported receiving greater encouragement and supportive feedback from their teachers were more likely to report stronger self-efficacy. The predictive utility of social persuasions by teachers for student self-efficacy was evinced in the context of both learning in general and learning the specific subject of Korean language and literature. This finding is consistent with that of previous studies (e.g., Joët et al., 2011) that social persuasions function as an important source of self-efficacy information and extends the findings of Schunk (1982) regarding the power of instructors’ verbal feedback in enhancing their students’ academic self-efficacy beliefs. Research into the social persuasion delivered exclusively by teachers in classroom learning situations as a self-efficacy information source has been rare. The present study provides clear empirical evidence for the role of teachers’ persuasion in the development of students’ academic self-efficacy.

Also in line with previous work showing a strong association between academic self-efficacy and grade goals (Zimmerman & Bandura, 1994), students’ academic self-efficacy predicted students’ expectations about their future achievement. The mediating role of academic self-efficacy was observed consistently across the homeroom and Korean language learning contexts. Given the established relations between the self-efficacy of learners and their task choice, persistence, learning

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strategy use, as well as achievement (Bong & Skaalvik, 2003), it is likely that teachers’ social persuasions would predict other important educational outcomes via students’ academic self-efficacy. Although the results are consistent with theory and prior research, we suggest the present finding be interpreted with caution. Klassen (2004) noted that sources of self-efficacy might function differently between individualistic and collectivistic cultures. Owing to the unique role teachers play in East Asian school systems, social persuasions from teachers might have enjoyed especially strong predictive utility for student self-efficacy. In fact, Ahn et al. (in press) have observed that social persuasions as a source for students’ self-efficacy display different predictive power across countries depending on who delivers the message. It will be an interesting endeavor to see if the current results can be replicated with Western samples.

Teacher Credibility as a Moderator of Teacher Persuasion

Students do not always listen to what their teachers say. Often, they disregard messages from their teachers or rely more heavily on those from other people such as their peers. For teachers who try to enhance the academic self-efficacy of their students by communicating high expectations and providing verbal encouragement, this situation could be frustrating. It was thus worth examining, in the context of teaching and learning, Bandura’s (1997) assertion that the perceived credibility of an individual partly determines the effectiveness of their persuasion.

Persuader credibility has been highlighted as a factor that augments the persuasiveness of messages in communications research (Giffin, 1967). Although credibility has been studied in settings as diverse as advertising, advocacy, and counseling (Pornpitakpan, 2004), it has not been investigated in relation to teachers’ persuasion and students’ academic self-efficacy. In the present study, we adopted the concept of credibility suggested by McCroskey and Young (1981), which consists of competence and trustworthiness as characteristics of credible persuaders. Bandura (1997) also claimed that such characteristics are of critical importance for social persuasions to be effective. Consistent with our expectations and Bandura’s assertion, our findings substantiate the role of teacher credibility as a determinant of teachers’ persuasion power. Students were more likely to report stronger self-efficacy when they believed that the social persuasions were conveyed by credible teachers, again across both general and specific learning contexts.

Social persuasions, as a source of self-efficacy information, have demonstrated inconsistent predictive utility in past research (Usher & Pajares, 2008), often failing to predict academic self-efficacy (e.g., Lent et al., 1991; Lopez et al., 1997; Pajares et al., 2007). We believe this inconsistency was due at least in part to the failure of distinguishing between multiple social agents, whose persuasions adolescent learners may or may not find relevant and do so to different degrees. In this study, we attempted to address this issue by not only focusing on social persuasions provided by teachers but also considering their credibility as persuaders. Our findings indicate that it is necessary to incorporate persuaders’ credibility to gain a clear understanding of the relationship between social persuasions and academic self-efficacy. Continued research on the characteristics of persuaders that can affect the efficacy-raising power of their persuasions in learning contexts is clearly warranted.

Limitations and Educational Implications

The cross-sectional nature of our data prevents us from making a strong causal claim among the variables. Longitudinal investigations into the relationship between teachers’ social persuasions, perceived teacher credibility, and students’ academic self-efficacy will offer stronger implications for classroom teaching practices. Bandura (1997) asserted that social persuasions are a more powerful source of self-efficacy information in the beginning stages of new learning. Therefore, we cautiously
Won et al. expect teachers’ social persuasions to wield stronger influence on student self-efficacy at the start of a new school year or after transition to a new school level.

In the present research, we assessed only the social persuasion from teachers. However, parents and peers are also influential social figures during adolescence (Wentzel, 1999). Some students might receive a fair amount of social persuasions from parents and peers, in addition to those from teachers. More accurate results could have been obtained had these other sources of social persuasions been controlled for. This limitation appears especially noteworthy that the present study was conducted in Korean educational settings, where parents are known to strive for their children’s academic achievement (Kim, 1992).

Despite these limitations, the current research offers meaningful educational implications. It once again demonstrated, consistent with previous research (Schunk, 1982), that teachers’ social persuasions in the form of encouragement and effort attributional feedback were a significant source of self-efficacy information for students. More important, these messages were effective in shaping student self-efficacy only when the delivering teachers were perceived to be credible by the listening students. Student perceptions of teachers change even within a school year (Gehlbach et al., 2012). We encourage teachers to earn the trust of their students before they can convince these students to believe in their own capability to learn.

REFERENCES


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