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Utility value and emotional support of teachers as predictors of student utility value and achievement

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ABSTRACT
We investigated the transmission of utility value from teachers to students by testing a model based on modern expectancy-value theory and empirical evidence for value transmission. A sample of 219 Korean 8th graders responded to surveys regarding the subject of history and their history teacher. Structural equation modelling showed that students’ perceptions of their teachers’ emotional support related positively to their perceptions of their teachers’ utility value and their own utility value for history. Student perceptions of their teachers’ utility value also related positively to the students’ utility value. Both the teachers’ and students’ utility value for history positively predicted students’ achievement in history. These findings suggest that students who believe that they receive stronger emotional support from their teachers tend to believe that their teachers value the subject more, and they in turn benefit from these beliefs in the form of increased utility value and achievement in the subject.

The importance of utility value in student learning and performance

Subjective task value is an important determinant of an individual’s performance and choice behaviours (Wigfield & Eccles, 2000). In the expectancy-value framework, perceptions of task value can be divided into four components: intrinsic value, which represents the enjoyment and intrinsic interest in performing a task; attainment value, which represents the perceived importance of doing a task well as part of their self-concept; utility value, which represents the usefulness of a task in terms of future goals; and cost, which represents the negative aspects of engaging in a task. Intrinsic, attainment, and utility value correlate positively with each other, while cost correlates negatively with the other three task value components (Hulleman, Durik, Schweigert, & Harackiewicz, 2008). Task value often refers to the three positive value components.

Considerable evidence has documented the constructive function of students’ task value beliefs in determining beneficial achievement outcomes, including task selection,
engagement, persistence, and performance (e.g. Bong, 2001; Perez, Cromley, & Kaplan, 2014). Of the value components, many researchers have focussed on the role of utility value. Compared to intrinsic and attainment value, utility value is relatively more extrinsic in nature and thus more easily manipulated by external influences. For example, when college students were led to believe that a task was relevant to their lives or instrumental in attaining their desired goals, they demonstrated significantly stronger interest and performance in the task than those who were not subject to utility value manipulation (Durik, Shechter, Noh, Rozek, & Harackiewicz, 2015; Hulleman, Godes, Hendricks, & Harackiewicz, 2010).

However, simply stressing the utility value of a task without considering other factors may fail to produce the expected benefits. For example, perceptions of heighten utility value unaccompanied by correspondingly high expectancy beliefs result in negative consequences such as high levels of anxiety and stress, academic procrastination, avoidance of help-seeking, and self-handicapping (Durik et al., 2015; Lee, Bong, & Kim, 2014; Lee, Lee, & Bong, 2014). When students perceive high utility value in a task but believe that the value is imposed from the outside and is not generated from within, they may feel that attempting to perform well on the task is nonself-determined or even controlling (Deci & Ryan, 2000). Therefore, it is important to investigate ways in which utility value can be transmitted to students in a manner that helps them to readily internalise it.

**Teachers as social agents who transmit utility value to students**

A wealth of research has focussed on improving students’ utility value beliefs toward the task or subject under consideration, often by having students participate in an intervention programme (Gaspard et al., 2015; Hulleman et al., 2010; Shin et al., 2019). These studies have produced convincing evidence that the interest and performance of students in an activity or domain of interest improve significantly when they perceive greater utility value.

Attempts to directly intervene in students’ value beliefs have been commonly reported in contemporary literature. In comparison, attempts to change the value beliefs of socialisers (i.e. parents, teachers, and other caregivers) and study the impact of these changes on students’ subsequent achievement motivation have been scarce. However, the expectancy-value theory makes it clear that the achievement motivation of children, including their task value belief, is formed through socialisation and that the beliefs and behaviours of socialisers play a critical role in this process (Eccles, 2007). According to Jacobs and Eccles (2000), parents influence their children by modelling and communicating messages. When it comes to academic value, parental communication regarding how much they value an activity can influence their children’s perception of that activity, and their children subsequently construct their own value in the activity by integrating their parents’ message.

A notable example of value transmission within the family is the intervention conducted by Harackiewicz, Rozek, Hulleman, and Hyde (2012), in which they demonstrated the effects of mothers’ utility value on the achievement motivation and behaviour of their children. The researchers mailed brochures to parents of high
school students twice, once when the students were 10th graders and again when they were 11th graders. These brochures contained information about the importance and relevance of mathematics and science to daily life, various careers, and college preparation, and how the parents could communicate this information to their children. The parents were also invited to visit a website that included links to many resources related to topics, fields, and careers in science, technology, engineering, and mathematics (STEM).

This simple intervention targeting the STEM utility value of parents produced remarkable differences in their high school children. Compared to children whose parents did not receive the brochures, the children of parents who received them took a significantly greater number of advanced elective courses in mathematics and science. A path model revealed that the intervention increased the perception of STEM utility value among mothers as well as the number of parent-child conversations about STEM course choices and the importance of STEM. Both factors enhanced the children's perception of STEM utility value. That the utility value held by the mothers predicted the utility value held by their child at a later point in time is consistent with the tenet of the expectancy-value theory that children’s perception of socialisers’ beliefs and attitudes influences their understanding of themselves, the task, and eventually task value (Wigfield & Eccles, 2000). Recognising the high value that significant others see in a task can bring about meaningful changes in the subjective task value held by students for the same target.

Considering the amount of time students spend at school, it seems reasonable to expect that teachers also play a key role in transmitting task value to students. Eccles (2007) emphasised the role of teachers as transmitters of positive task value beliefs to students. Supporting this view, a recent study demonstrated that the enjoyment of teaching mathematics reported by mathematics teachers correlated positively with the enjoyment of mathematics class reported by their students, even after controlling for the students’ enjoyment of mathematics assessed during the previous year (Frenzel, Goetz, Lüdtke, Pekrun, & Sutton, 2009).

Social cognitive theory also emphasises the importance of social agents as transmitters of messages that shape the motivation of observers for similar tasks (Bandura, 1997). When Zeldin and Pajares (2000) interviewed 15 women with successful careers in STEM fields and asked them about the experiences that encouraged them to pursue their current career, modelling and verbal encouragement from family members and teachers were the most frequently recurring responses. All mentioned a teacher who provided them with verbal encouragement and emotional support, which helped them to believe in their own ability to succeed in STEM fields. Many spontaneously recollected the enthusiasm for the subject that their teachers expressed as a factor that influenced their career decision-making. Apparently, when teachers value the subject that they teach, it is communicated to their students and shapes the value that their students place on the same subject.

The significance of teachers as mediators in the process of generating motivated learners has also been discussed by Brophy (1999). He argued that contemporary theories of motivation place too much emphasis on expectancy and confidence when an equally important aspect of motivation is the value and appreciation of the learning
experience by students. To this end, teachers should provide more than direct instruction of knowledge and skills but should also model, coach, and scaffold relevant attitudes, values, and beliefs. Brophy's assertion is consistent with the tenets of expectancy-value (Eccles, 2007; Wigfield & Eccles, 2000) and social cognitive theory (Zeldin & Pajares, 2000), in which teachers are powerful socialising agents who transfer the value of, enthusiasm for, and satisfaction with a domain to their students, who can then develop a 'scaffolded appreciation' (p. 82) of what they are learning.

**Teachers’ emotional support in the value transmission process**

Perceived emotional support from teachers can further improve the value transmission process from teachers to students. Earlier, we argued that utility value needs to be internalised by students to whom it is communicated, or else they may feel pressed and adopt maladaptive responses (Durik et al., 2015; Lee, Bong, et al., 2014; Lee, Bong, et al., 2014). Children accept the goals and values of significant others when they are raised in an emotionally supportive environment (Eccles, 2007). Therefore, believing that their teachers support them emotionally would help students to internalise the utility value of a target subject conveyed by their teachers.

Teachers’ emotional support is defined as a student’s belief that a teacher cherishes and cares about them as a person (Patrick, Ryan, & Kaplan, 2007). Students feel connected and comfortable in their relationship with their teachers when they believe that their teachers trust them, try to understand their feelings, and are genuinely concerned about their learning, development, and well-being. Student perceptions that they are being emotionally supported by their teachers lead to many desirable consequences such as positive self-concept and strong self-efficacy, better engagement and effort investment, and high task value in a given task (Ahmed, Minnaert, van der Werf, & Kuyper, 2010; Eccles & Roeser, 2009; Furrer & Skinner, 2003; Wentzel, 2002).

Emotional support is expected to be particularly important for middle school students. Middle school is known to be a period during which adolescent students face significant changes in their physical and psychological maturity as well as their social atmosphere (Eccles & Roeser, 2009). Compared to the elementary school environment, middle school presents students with greater achievement pressure, less individual attention, and less interpersonal exchanges with teachers. It requires greater independence from students yet offers only limited opportunities for them to exercise independent decision-making. Midgley and Feldlaufer (1987) thus argued that there is a ‘developmental mismatch’ between the emerging needs of adolescents during this period and the responses they receive from their classroom environment.

In fact, when asked to report their perception of teachers before and after the transition to middle school, students claimed that their middle school teachers did not care for them as much, were less fair in their evaluation, exercised more extrinsic control, and made them feel a higher level of stress because of examinations (Wigfield, Eccles, & Rodriguez, 1998). Classroom observations confirmed that these perceptions largely reflected the characteristics of a middle school classroom (Feldlaufer, Midgley, & Eccles, 1988). Nonetheless, it is emotional support from their teachers that students yearn for and respond to most strongly during middle school.
Malecki and Demaray (2003) investigated what type of support students in Grades 5–8 perceived most frequently from their parents, teachers, classmates, and close friends. They reported receiving emotional (i.e. caring about them) and informational support (i.e. helping them to understand the material better) from their parents, informational support from their teachers, and emotional and instrumental support (i.e. spending time with them when they need help or provide what they need for school) from their classmates and close friends. However, it was the emotional support from their teachers that significantly predicted the students’ social skills and academic ability. Neither the other types of support (i.e. informational, appraisal, and instrumental support) from their teachers nor support from the other social agents such as parents, classmates, and close friends significantly predicted student outcomes.

When Tennant et al. (2015) compared the relationship of different types of teacher social support with students’ academic and social-emotional outcomes among a group of 7th and 8th graders, teachers’ emotional support emerged as a significant predictor of almost all the investigated outcomes. Student ratings of emotional support from their teachers positively related to the students’ GPA and personal adjustment and negatively related to school problems, internalising problems, inattention/hyperactivity, and emotional symptoms. Teacher emotional support also related to the scores on standardised achievement tests, but only for girls. Other types of social support, including teacher informational support, appraisal (i.e. telling students how well they are doing), and instrumental support did not exhibit a significant relationship with student outcomes, supporting the findings of Malecki and Demaray (2003).

Adolescent students may neither accept nor internalise the utility value of an academic task emphasised by their teachers unless they also believe that their teachers care about them and that these messages are an expression of the teachers’ genuine concern about the students’ welfare. When students perceive strong emotional support from their teachers, they would become more likely to not only perceive the utility value of their teachers but also internalise this value and make it their own.

**Importance of students’ subjective perceptions**

What may be more critical in the value transmission process is the students’ subjective perception of the value their teacher holds rather than the actual task value reported by the teachers themselves. In the study by Frenzel et al. (2009), enjoyment of teachers and that of students was mediated by the students’ perception of their teachers’ enthusiasm. As the mathematics teachers reported greater enjoyment in teaching the subject to their students, the students reported perceiving greater enthusiasm for teaching in their mathematics teacher; it was this perceived enthusiasm of the teachers that then explained the greater enjoyment of mathematics class by the students.

The relative power of the perceived environment over the objective reality as a determinant of student motivation has been well documented in the achievement goal literature. The accumulation of empirical evidence attests to the strong predictive utility of student ratings of mastery- and performance-oriented classroom goal structures for student motivation, behaviour, and achievement. Moreover, students’ subjective perceptions of the classroom environment explain various student outcomes.
better than teachers’ reports of their own instructional practices (for a review, see Meece, Anderman, & Anderman, 2006). Ames (1992) suggested that students’ perceptions and interpretations of the same instructional practices can vary widely depending on their achievement levels and prior classroom experiences. She thus claimed that researchers need to pay attention to how students subjectively experience and give meaning to classroom events if their goal is to more accurately predict student outcomes. Following this advice, we asked students to rate their perception of their teacher’s utility value and emotional support rather than asking teachers to report their own utility value for the subject and emotional support to their students.

**Present research**

This study was designed to examine the role of a teacher as a value transmitter, as suggested by expectancy-value (Eccles, 2007; Wigfield & Eccles, 2000) and social cognitive theorists (Bandura, 1997; Zeldin & Pajares, 2000). Harackiewicz et al. (2012) had previously reported on the transmission of STEM utility value from parents to their children, and we designed the present study to be a logical extension of these findings by investigating whether teachers’ utility value in a subject was transmitted to students. We also examined the role of teachers’ emotional support in the utility value transmission process from teachers to students.

Specifically, we looked to answer the following research questions:

Q1. Does a student’s perception of a teacher’s utility value predict the student’s utility value for the subject?

Q2. Does a student’s perception of their teacher’s emotional support predict the student’s perception of their teacher’s utility value and the student’s utility value for the subject?

Q3. Does a student’s utility value mediate the relationship between the student’s perception of a teacher’s utility value as well as that of the teacher’s emotional support and the student’s academic achievement in the subject?

It was hypothesised that a student’s perception of a teacher’s utility value for a subject would predict the students’ own utility value for that subject (Hypothesis 1). We further hypothesised that a student’s perception of their teacher’s emotional support would predict both the student’s perception of their teacher’s utility value (Hypothesis 2a) and the students’ own utility value for the subject (Hypothesis 2b). In effect, perceived teacher utility value functions as a mediator between the student’s perception of teacher emotional support and the student’s own utility value, as depicted in Model A (Figure 1). Alternatively, students might perceive stronger emotional support from their teacher in the subject of interest when they realised that the teacher saw more utility value in that subject (Hypothesis 2c). This effectively means that perceived teacher emotional support would function as a mediator for perceived teacher utility value. Model B illustrates these pathways (Figure 1).

We also postulated that a student’s perception of their teacher’s emotional support might work as a moderator rather than a mediator in the value transmission process.
In the study of Hamre and Pianta (2005), kindergarten children were classified into groups of low and high functional risk of school failure. High-risk children placed in first-grade classrooms with high emotional support demonstrated comparable levels of performance on standardised achievement batteries to their peers with low functional risk. However, high-risk children in classrooms with moderate or low emotional support performed significantly more poorly compared to children with a low risk.

Shin and Ryan (2017) study on the friendship dynamics within middle school classrooms likewise reported a moderating role for teacher emotional support in the process of peer influence. There was no difference across classrooms in the levels of disruptive behaviour at the beginning of the school year. However, by the end of the school year, students in classrooms with low emotional support from their teachers exhibited significantly higher levels of disruptive behaviour compared to those in classrooms with high teacher emotional support.

These results attest to the moderating role of teacher emotional support in various student psychological processes. We thus tested the possibility that utility value transmission from teachers to students takes place only when students perceive their teachers to be emotionally supportive (Hypothesis 2d). Even if a student perceives that a teacher sees high utility value in a subject, this may not necessarily predict a commensurate degree of utility value in the students themselves if they do not perceive the teacher as providing enough emotional support. Model C is a visual representation of the hypothesised moderation relationship (Figure 1).

Finally, we hypothesised that a student’s utility value for a subject would mediate the relationship between their perception of their teacher’s utility value and their achievement (Hypothesis 3a) as well as that between the student’s perception of the teacher’s emotional support and the student’s achievement in the subject (Hypothesis 3b). In Shin et al. (2019), participation in the science utility intervention explained an
increase in the students’ science interest, appreciation of the role of science in future careers, and intention to engage in science-related activities via a stronger perception of the personal utility value of science. Significant indirect effects of the intervention on student outcomes via students’ utility value were observed after controlling for the corresponding variables assessed before the onset of the intervention.

Similarly, we hypothesized that significant paths between the variables would emerge even after the student’s earlier utility value in the same subject was controlled for. A student’s utility value for history at the beginning of the semester was thus hypothesized to relate positively to the student’s own utility value for the subject (Hypothesis 4a), the student’s perception of their teacher’s utility value for history (Hypothesis 4b), and the student’s perception of their teacher’s emotional support (Hypothesis 4c) assessed around the time of the midterm examination at T2. Figure 1 presents the three competing models, with all hypothesized paths specified.

Method

Participants and procedure

Eighth graders attending a public middle school near Seoul, Korea, participated in the study. A total of 245 students agreed to participate at Time 1 (T1) and 228 students agreed at Time 2 (T2). After matching the T1 and T2 responses, the final sample consisted of 219 students (106 girls and 113 boys). Excluding 7 students who did not report their age, the mean age of the sample was 13.46 years old (SD = .61).

All surveys took place during regular class hours. The surveys were administered twice, once during the first week of the semester (T1) and once during the 7th week of the semester (T2). At T1, only students’ initial utility value for the subject was assessed; at T2, which was two weeks before the midterm examination, the students’ perceptions of their teacher’s utility value and emotional support, as well as their own utility value for the subject, were assessed. It took approximately 20 minutes for the students to complete each survey. The midterm examination scores represented an achievement index.

Measures

All items on the survey referred to a history class that the students were currently taking and their current history teacher. The decision to recruit students from history classes was an expedient one as we did not expect the results to differ between school subjects. The survey items were written in Korean, which was the students’ native language. The response scale for the survey ranged from 1 (disagree very strongly) to 7 (agree very strongly).

Utility value

Students’ utility value for history was assessed with two items used in previous research (Eccles & Wigfield, 1995): ‘It is useful to learn history for what I want to do in the future’ and ‘It is useful to learn history for my life outside school.’ The Cronbach’s alpha coefficients were .73 at T1 and .86 at T2, respectively.
Student perception of a teacher’s utility value
The above two utility value items were modified by adding the phrase, ‘My history teacher thinks’ at the beginning of each item (Gniewosz & Noack, 2012): ‘My history teacher thinks it is useful to learn history for what she/he wants to do in the future’ and ‘My history teacher thinks it is useful to learn history for her/his life outside school.’ High scores on this scale indicate that the students perceived their history teacher to find history to be useful and relevant. The Cronbach’s alpha coefficient was .91.

Student perception of a teacher’s emotional support
The Teacher Emotional Support subscale in the Student Motivation in the Learning Environment Scales (SMILES; Bong et al., 2012) was used. This six-item subscale assesses students’ perceptions of how much their teacher understands, trusts, and respects them as a person. Sample items include, ‘My history teacher is there to listen to my concerns’ and ‘My history teacher accepts me as I am.’ The scale demonstrated strong reliability with the Cronbach’s alpha coefficient of .94.

Academic achievement
Students’ midterm examination scores in history were used as an index of their academic achievement. The scores could range from 0 to 100. The history examination was developed by the students’ history teacher and primarily consisted of multiple-choice questions.

Data analysis
Missing answers accounted for less than 1.8% of all survey items. The missing values were imputed with the expectation-maximization (EM) algorithm in SPSS 20.0. Descriptive statistics were computed with SPSS 20.0, while structural equation modeling (SEM) was conducted with Amos 16.0. When evaluating the model fit, several goodness-of-fit indexes were consulted, including the ratio of the chi-square value to its degrees of freedom, the Tucker-Lewis index (TLI), the comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardised root mean square residual (SRMR). Values of the TLI and CFI close to .95 and those of SRMR and RMSEA close to .08 were judged to indicate acceptable model fit (Browne & Cudeck, 1993; Hu & Bentler, 1999).

Results
Descriptive statistics and correlations
Table 1 presents the means, standard deviations, and reliability coefficients of the variables, in addition to their correlation coefficients with each other. On average, students expressed strong agreement with the statements that their history teacher believed history was useful and relevant, $M = 5.24$, $SD = 1.18$. They also provided positive responses to the statements that their history teacher provided emotional support, $M = 4.39$, $SD = 1.24$. 
The students’ utility value for history assessed at T1 correlated strongly with their utility value assessed at T2, \( r = .63, p < .01 \). The scores for the students’ utility value for history at T1 (\( M = 3.79 \)) and T2 (\( M = 3.84 \)) did not differ significantly, \( t(218) = –.558, p = .577 \). However, the two variables shared only 39.7% of their variance, indicating there was room for change in student utility value for history from T1 to T2. The students’ utility value for history at T2 correlated positively with their perception of emotional support from their history teachers, \( r = .54, p < .01 \), and their perception of their teachers’ utility value for history, \( r = .30, p < .01 \). Student perceptions of teachers’ emotional support and utility value in history also correlated with each other, \( r = .31, p < .01 \). Students’ achievement scores on the history midterm examination correlated with students’ utility value of history at both T1, \( r = .19, p < .01 \), and T2, \( r = .20, p < .01 \), as well as student perceptions of teachers’ utility value of history at T2, \( r = .26, p < .01 \).

\textbf{SEM analysis}

A measurement model with five latent variables was examined first. The multiple items used to assess each of the variables functioned as indicators of their respective factors, except for achievement. For the history achievement that had only a single indicator, a reliability-driven composite was created by fixing the error variance of the latent variable with a formula, \((1 – \text{scale reliability}) \times \text{scale variance}\) (Hayduk, 1987), assuming \( \alpha = .70 \). This model demonstrated an acceptable fit to the data, \( \chi^2(56, N = 219) = 149.80, p < .001 \) (TLI = .94, CFI = .95, SRMR = .04, RMSEA = .09 with 90% CI [.07, .11]).

Structural equation models were tested next to evaluate the hypotheses (Figure 1). The T1 utility value for history was included as a control variable because students’ prior utility value for the subject could influence their subsequent perception of their history teacher’s emotional support, their history teacher’s utility value, and their own utility value for history assessed at a later point. All T2 variables were specified as predictors of the students’ achievement scores for their history midterm examination.

Because Models A and B contain the same number of parameters, the goodness-of-fit indexes were identical for both models. Both fit the data well,

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**Table 1.** Descriptive statistics and correlation coefficients among the variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. UV1</td>
<td>.73</td>
<td>.48***</td>
<td>.22*</td>
<td>.79***</td>
<td>.27***</td>
</tr>
<tr>
<td>2. TES2</td>
<td>.40**</td>
<td>.40</td>
<td>.32***</td>
<td>.60***</td>
<td>.10</td>
</tr>
<tr>
<td>3. TUV2</td>
<td>.18**</td>
<td>.31**</td>
<td>.91</td>
<td>.34***</td>
<td>.32***</td>
</tr>
<tr>
<td>4. UV2</td>
<td>.63**</td>
<td>.54**</td>
<td>.30**</td>
<td>.86</td>
<td>.27**</td>
</tr>
<tr>
<td>5. Ach2</td>
<td>.19**</td>
<td>.09</td>
<td>.26**</td>
<td>.20**</td>
<td>–</td>
</tr>
<tr>
<td>M</td>
<td>3.79</td>
<td>4.39</td>
<td>5.24</td>
<td>3.84</td>
<td>65.81</td>
</tr>
<tr>
<td>SD</td>
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<td>1.24</td>
<td>1.18</td>
<td>1.42</td>
<td>26.17</td>
</tr>
<tr>
<td>Observed range</td>
<td>1–7</td>
<td>1–7</td>
<td>2–7</td>
<td>1–7</td>
<td>1–100</td>
</tr>
</tbody>
</table>

*Note:* Reliability coefficients are presented in the diagonal. Coefficients for the observed variables are presented below the diagonal; those for the latent variables are above the diagonal. UV: utility value; TES: teacher emotional support; TUV: teacher utility value; Ach: academic achievement; 1: Time 1; 2: Time 2.

*\( p < .05 \).
**\( p < .01 \).
***\( p < .001 \).
v2(57, N = 219) = 150.83, p < .001 (TLI = .94, CFI = .95, SRMR = .04, RMSEA = .09 with 90% CI [.07, .10]). In Model A, a student’s perception of the emotional support from their history teacher positively predicted the student’s perception of their teacher’s utility value for history (Hypothesis 2a: \( \beta = .28, p < .001 \)). Students’ initial utility value for history significantly predicted their perception of their teachers’ emotional support (Hypothesis 4c: \( \beta = .48, p < .001 \)) but not their perception of their teachers’ utility value for the subject (Hypothesis 4b: \( \beta = .09, p = .35 \)). The same path linking the students’ utility value for history at T1 and their perception of their teachers’ utility value for history at T2 proved statistically significant in Model B (H4b: \( \beta = .22, p < .01 \)). Although Models A and B represent the empirical data equally well, Model A has stronger theoretical support from the literature and was hence judged to offer a better representation of the data. Figure 2 represents the path coefficients among the variables for Model A that were statistically significant at \( p < .05 \).

Hypotheses 1, 2a, and 2b received support. The students’ perception of their history teachers’ utility value for the subject significantly predicted their own utility value for history (Hypothesis 1: \( \beta = .12, p < .05 \)). The emotional support that the students perceived from their history teacher predicted both the student’s perception of their teacher’s utility value (Hypothesis 2a: \( \beta = .28, p < .01 \)) and their own utility value for history (Hypothesis 2b: \( \beta = .25, p < .001 \)).

Hypothesis 3a also received support. Both students’ perception of their teachers’ utility value for history (\( \beta = .27, p = .01 \)) and students’ own utility value for history (\( \beta = .28, p < .05 \)) directly predicted the students’ midterm scores in history. Hypothesis 3b did not receive support because the direct path between the students’ perception of their teachers’ emotional support and their history achievement, a prerequisite for testing the mediation of the students’ utility value for history, was not significant (\( \beta = -.16, p = .14 \)).

A phantom model approach was applied (Macho & Ledermann, 2011) to test the significance of the two hypothesised mediated paths: the one from the students’ perception of their teachers’ utility value for history to the students’ history achievement via their own utility value for history (Hypothesis 3a) and the other from the students’ perception of their history teacher’s emotional support to the students’ history achievement, again, via their own utility value for history (Hypothesis 3b). This approach involves creating a separate latent variable model representing each indirect
effect to be added to the main structural model and then testing the specific phantom for significance. Bias-corrected percentile bootstrapping based on 1000 random samples with a 95% confidence interval was applied. Table 2 summarises the results.

Only Hypothesis 3b received support. Although the effect was small, the stronger perception of the emotional support from their history teachers related to the stronger utility value for history adopted by the students themselves, which in turn predicted higher achievement in the history \((\beta = .01, p < .05)\). This indirect effect remained statistically significant, even after controlling for students’ utility value for history assessed at T1 (Hypotheses 4a).

Finally, Model C was tested for the possible moderation by student perception of teacher emotional support. We divided the sample into high teacher emotional support and low teacher emotional support groups using a median split of the emotional support scores. A multi-sample path analysis was then conducted with equality constraints imposed on the structural paths for Model A. A factor representing students’ perception of teacher emotional support was removed from the model because it was used to create the high and low teacher emotional support groups. Most importantly, the critical ratio associated with the path linking student perception of teacher utility value and their own utility value for history was examined to see if the path coefficient was significantly different between the two groups. Although this path was stronger in the high teacher emotional support group \((\beta = .18, p = .05)\) than the low teacher emotional support group \((\beta = .16, p = .12)\), the difference was not statistically significant \((CR = .75, p > .05)\). Hypothesis 2d thus did not receive support.

**Discussion**

We investigated the role of a teacher as a social agent who transmits to students the value of a learning task, which is an important motivational determinant of academic engagement and performance. Specifically, we examined whether a subject teacher’s utility value for the subject, as perceived by the students, could help improve the students’ utility value for the same subject. We were also interested in determining whether the students’ recognition of their teacher’s utility value for the subject and its transmission could be facilitated when the students received emotional support from their subject teacher.

On the whole, the results provide support for our hypotheses and the value transmission process described by the expectancy-value theory (Eccles, 2007).
When students believed that their history teachers viewed the subject of history to be useful and relevant, they also tended to view history to be a useful subject to learn. The Korean middle school students who participated in this research perceived that their history teachers saw a stronger utility value in history when they believed these teachers provided them with greater emotional support. The belief that their history teacher trusted them, understood them, and was there to listen to their concerns also directly predicted the students to perceive a stronger utility value for history for themselves.

While the role of a teacher as an important social agent in the formation of children’s task value has been consistently acknowledged in the expectancy-value paradigm (Wigfield & Eccles, 2000), previous studies have mainly focussed on value transmission within the family, especially from parents to their children (e.g. Harackiewicz et al., 2012; Jacobs & Eccles, 2000). Little direct effort has been spent investigating the transmission of task value from teachers to students. The current findings demonstrate that teachers indeed play a critical role in helping their students see the task value in the subject that they teach. Just like the child accepts the values of their parents, the students appeared to have accepted the utility value for the subject that their teachers communicated to them. The path linking teachers’ utility value for history as perceived by the students to the students’ own utility value for history was significant even after taking the students’ existing utility value for history into account. The students’ utility value for history subsequently predicted their achievement in history, confirming once again the motivational power of perceived utility value in academic performance (Durik et al., 2015; Gaspard et al., 2015; Hulleman et al., 2010).

Students’ perception of their history teachers’ utility value functioned as a direct predictor of their history achievement. The path from the students’ perception of their teachers’ utility value to their achievement ($\beta = .27$) was comparable to that from the students’ own utility value to their achievement in the subject ($\beta = .28$). At the same time, the mediated path from the students’ perception of their teachers’ utility value to their achievement via their own utility value for history did not reach statistical significance. These findings suggest that perceiving their teachers to value the subject must have had some beneficial effects on the observing students other than helping them see greater utility value in the subject. The present research cannot determine whether this was the result of prompting students to find the subject more interesting, to concentrate more during the class, to invest greater effort in studying the subject, or all of these. Nevertheless, it seems evident that teachers need to make their students recognise how much they value the subject that they teach. Enhanced utility value results in improved performance on a task (Durik et al., 2015; Hulleman et al., 2010), a finding also supported by the present research.

Perceiving their teacher to be emotionally supportive proved to be a mechanism that could improve both the students’ perception of their teachers’ utility value for the subject and the students’ own utility value for the subject. This is a key finding because middle school is a period in which the adolescent students feel that they are not receiving enough support from their teachers, even though they need ample social support during this period because of their recent transition from elementary to
middle school and the many physical, psychological, and curriculum changes that accompany this transition (Eccles & Roeser, 2009; Midgley & Feldlaufer, 1987). The present results suggest that students believed that teachers who were more emotionally supportive also valued the subject that they were teaching to a greater extent, and both the perceptions of greater emotional support from their teachers and stronger utility value held by their teachers predicted stronger utility value for the subject among students.

It is curious that students’ perception of emotional support from their teachers did not predict student achievement in the subject that was assessed two weeks later. In past studies, teacher support has demonstrated a significant positive correlation with student performance outcomes such as grades; however, when it is used to predict student performance along with other variables in regression analysis, its predictive power is considerably weaker (Ahmed et al., 2010) and sometimes becomes nonsignificant (Wentzel, 2002). In the present research, the teacher emotional support survey took place during the 7th week of the new school year. We suspect that the positive effects of the teachers’ emotional support on tangible student outcomes such as grades and test scores may require more time to be realised.

On the whole, our results are consistent with previous findings that emotional support from teachers improves student confidence, effort, and engagement at school (Eccles & Roeser, 2009; Furrer & Skinner, 2003). Although students’ perception of their teachers’ emotional support did not significantly alter the strength of the relationship between their teachers’ perceived utility value and students’ own utility value, a clear trend was observed that favoured the students who perceived greater emotional support from their teachers in the form of higher utility value for the subject. The present findings provide support for Brophy’s (1999) claim that teachers can and should function as effective mediators in the motivation processes that students undergo. While enhancing students’ confidence to succeed at school remains a goal of great significance, teachers need to be reminded that it is equally important to help children understand the usefulness and relevance of the knowledge that they acquire at school.

**Limitations and suggestions for future research**

Several limitations deserve mention. The interval between the first and second utility value surveys in this research was only seven weeks. The temporal stability coefficient between the students’ T1 and T2 utility value was .63, which indicates that non-negligible changes had occurred during this seven-week period. However, a question remains whether seven weeks is long enough for value transmission to take place. Because the students’ perception of their teacher’s emotional support and that of their teacher’s utility value for the subject were measured simultaneously with the students’ T2 utility value, we cannot be completely confident that the changes in the students’ utility value from T1 to T2 were primarily the result of these teacher-related beliefs. The correlational nature of the data also allows alternative explanations for the current pattern of results. For example, rather than teachers’ utility value shaping students’ utility value, it may be that students’ own utility value for the subject causes them to
perceive their teacher’s utility value to be stronger or their teachers to provide greater emotional support. In future research, we recommend a longer interval between the assessments and separate assessments of the teacher and student variables to clarify the cause-and-effect relationship.

The current study relied only on students’ perceptions. Even though the literature has established that it is the perceived rather than the objective reality that has a critical influence on student motivation and achievement (Meece et al., 2006; Ryan & Grolnick, 1986), securing other sources of information such as classroom observations would nonetheless be helpful in validating the present findings (Urdan, 2004). Directly asking teachers to report their own task value and examining how these scores differ from the students’ perception of the teachers’ task value or testing which of the two utility value scores better predict outcomes would be a worthwhile endeavour.

Finally, in East Asian countries such as Korea and Japan, classroom teachers are often regarded as surrogate parents and wield substantial influence on every aspect of a student’s life including their motivation, peer relationships, career plans, and psychological adjustments (Ito, 2011; Lee & Jeung, 2006). Korean adolescents also display high conformity to authority figures and benefit from this (Jiang, Bong, & Kim, 2015). It is thus possible that the present sample of Korean middle school students was relatively more susceptible to the messages that their teachers conveyed, including the utility value of the subject.

**Contributions of the present research**

The present investigation has illustrated the process by which the task value of teachers can be transmitted to students. The emotional support that the students received from their teacher facilitated this process by establishing a non-intrusive value transmission process and making it more likely for the students to perceive the utility value held by their teachers before making it their own. Believing that their teacher had high utility value for the subject enhanced not only the students’ utility value but also their subsequent achievement.

According to the social cognitive theory (Bandura, 1977), individuals acquire various forms of information from observing others. Teachers represent authentic models in achievement settings, providing persuasive information regarding what is interesting, important, and useful. This study contributes to a better understanding of the significant role that teachers play in student motivation and performance by demonstrating the powerful impact of teachers as value transmitters.

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References


