Interaction between task values and self-efficacy on maladaptive achievement strategy use

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Interaction between task values and self-efficacy on maladaptive achievement strategy use

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We tested the interaction between task value and self-efficacy on defensive pessimism, academic cheating, procrastination and self-handicapping among 574 Korean 11th graders in the context of English as a foreign language. We hypothesised that perceiving high value in tasks or domains for which self-efficacy was low would pose a threat to perceived self-worth, leading students to resort to various maladaptive achievement strategies. Hierarchical multiple regression analyses demonstrated that, consistent with our hypothesis, the relationships of task value with academic cheating and procrastination depended on the level of self-efficacy. Perceiving high intrinsic value positively predicted academic cheating for students with low self-efficacy but not for students with high self-efficacy. Likewise, perceiving intrinsic or utility value positively predicted procrastination for students with low self-efficacy but not for students with high self-efficacy. Our findings support the major tenets of self-worth theory.

Keywords: expectancy-value theory; self-efficacy; self-worth; defensive strategies; maladaptive strategies

Introduction

Individuals tend to value the tasks at which they are good and, at the same time, become good at the tasks to which they attach high value (Eccles & Wigfield, 2002). Expectancy and value, therefore, typically demonstrate a positive correlation with each other. This positive relationship between expectancy and value has been a unique and major contribution of Eccles–Wigfield’s modern expectancy-value theory to academic motivation research, along with the differentiation between multiple task value components. Research conducted with Eccles–Wigfield’s expectancy-value framework has thus focused mostly on this positive association between expectancy and task value components and the role of these constructs in predicting desirable consequences.

What happens when individuals do not expect to succeed at the tasks for which they hold high value? Eccles–Wigfield’s theory proposes that individuals’ values toward given tasks are influenced both directly and indirectly by a host of factors, including cultural milieu and socialisers’ beliefs and perceptions, as well as the individuals’ expectancies for achieving the given tasks (Eccles & Wigfield, 2002). Differently stated, if the society to which individuals belong places high value on

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certain tasks and domains, the individuals may find it difficult not to value those tasks and domains (Eccles & Wigfield, 1995). Incongruence could exist between expectancies and values such that individuals face the tasks that are highly valued by others, and society as a whole, with different degrees of expectancies.

In the present research, we sought an answer to the question, ‘what happens when students are not feeling competent at the tasks that they value?’ Covington’s (1984, 1992, 2009) self-worth theory provides a useful framework for generating possible answers to this question. According to this theory, perceiving low competence in socially valued tasks and activities could pose a threat to students’ sense of self-worth. The perceived threat prompt students to use maladaptive strategies such as making excuses, procrastinating and cheating, in the hopes of protecting their self-worth. They use these strategies in the face of imminent failure to help make others ascribe their low achievement to factors other than their lack of competence (Covington, 1992).

We tried to probe this phenomenon within a specific academic domain in which high achievement in the domain is valued by the society at large, yet is difficult for everyone to attain. Our focus on a specific domain is also consistent with the claim of Wigfield (1994) that the strength of the positive association between expectancy and value depends on particular subject matter areas. Given the strong appreciation of the ability to communicate fluently in English in Korea (Park, 2009) and in many other Asian countries (Liem, Lau, & Nie, 2008; Tickoo, 1996), we examined the situation where students’ value beliefs toward English were unaccompanied by their expectancies for successful performance in English and the role of this incongruence between the two constructs in predicting undesirable consequences. Because we generated hypotheses on the basis of modern expectancy-value theory (Eccles & Wigfield, 1995; Wigfield & Eccles, 1994) and self-worth theory (Covington, 1984), we briefly review major tenets of each theory as they relate to the specific hypotheses examined in this research.

**Modern expectancy-value theory**

Competence-related beliefs and value beliefs have received special attention among academic motivation researchers. These researchers put a specific emphasis on the importance of simultaneously examining both competence and value beliefs to better understand individuals’ achievement-related behaviours (e.g. Atkinson, 1957; Wigfield & Eccles, 1994). In particular, the modern expectancy-value theory of Eccles and Wigfield (1995) has generated great interest among academic motivation researchers by elucidating how the perceptions of value and competence-related beliefs in certain tasks develop and influence individuals’ choice behaviours and task performance (Eccles & Wigfield, 1995; Wigfield & Eccles, 1994).

Major contributions of Eccles–Wigfield’s modern revision of the expectancy-value theory to the field of academic motivation include, but are not limited to, the following three: (a) The theory has established value beliefs as predictors of various behavioural outcomes, which demonstrate similar predictive utility to that of expectancy beliefs; (b) it has presented more elaborate definitions of the task value construct compared to previous conceptualizations; and (c) it has proposed and empirically documented a positive relationship between expectancy and value beliefs. We elaborated upon each point in the following paragraphs.
First, both expectancy and value independently and strongly predict positive and adaptive outcomes. While the strong predictive role of competence-related beliefs has been well demonstrated by extensive research (e.g. Pintrich & De Groot, 1990; Schunk, 1981), Eccles–Wigfield’s theory suggests the equally important role of task value in predicting similar outcomes. Meece, Wigfield, and Eccles (1990), for example, found that students’ expectancies significantly predicted achievement in math, while students’ value beliefs significantly predicted course enrolment decisions among early adolescents. In a study with Korean college students, Bong (2001) reported that students’ self-efficacy beliefs and components of task value strongly predicted students’ course performance and enrolment intentions. Expectancies have also been negatively associated with detrimental outcomes such as negative emotions (Pekrun, 2006), cheating (Murdock, Hale, & Weber, 2001) and procrastination (Van Eerde, 2003). Similarly, task value displays negative associations with undesirable outcomes such as task disengagement (Liem et al., 2008) and help-seeking avoidance (Karabenick, 2003). In this study, we tried to replicate the negative relationships of task value with maladaptive achievement strategies such as academic cheating and procrastination.

Second, Eccles–Wigfield’s theory differentiates between multiple components of competence and value beliefs. Ability beliefs and expectancies were differentiated among competence-related beliefs, while intrinsic value, attainment value, utility value and perceived cost were distinguished among task value beliefs (e.g. Eccles, 2005; Eccles & Wigfield, 2002). However, empirical tests were not successful in distinguishing ability beliefs from expectancies (see Eccles & Wigfield, 2002). Moreover, the expectancy construct was viewed as analogous to Bandura’s (1977) self-efficacy construct (Bong, 2001).

Regarding the specific task value components, intrinsic value refers to the ‘enjoyment or interest’ individuals experience in performing a task or toward a subject; attainment value refers to the ‘importance’ of performing well on a task to individuals’ self-identity; utility value refers to the ‘usefulness’ of a task in accomplishing desired goals; and cost refers to the negative aspects of engaging in a certain task (e.g. Eccles, 2009; Wigfield & Eccles, 2000). These specific components of task value are presumed to be distinct from each other and predict various types of behaviours (Eccles & Wigfield, 1995). With the exception of cost, however, the three components have correlated strongly with each other and played similar roles in predicting adaptive outcomes (Hulleman, Durik, Schweigert, & Harackiewicz, 2008).

In the present research, we examined whether intrinsic value and utility value would show distinct patterns in predicting maladaptive achievement strategy use. We selected these two value components for comparison because of the following two reasons: (a) intrinsic value and utility value differ conceptually in that the former represents more ‘intrinsic’ aspects of task value than does the latter (Eccles, 2009; Wigfield & Eccles, 2002); and (b) in the past research, intrinsic value shows stronger negative relations to maladaptive outcomes than does utility value (e.g. Newstead, Franklyn-Stokes, & Armstead, 1996). Borrowing the language of self-determination theory (e.g. Ryan & Deci, 2000), intrinsic value represents more ‘intrinsic’ or ‘integrated’ regulation of motivation, whereas utility value represents more ‘introjected’ or ‘extrinsic’ regulation of motivation (Eccles, 2005). We thus focused on these two value components, which in our view represents the most
intrinsic and the most extrinsic aspects of task value, respectively, among the four task value components.

Third, the modern expectancy-value theory contends a positive linear relationship between value and expectancies. That is, children come to perceive greater value in the tasks which they are good at, among various tasks that they get to experience (Wigfield, 1994). Unlike the original expectancy-value theory that postulated an inverse relationship between expectancy and value (Atkinson, 1957), Eccles–Wigfield’s theory posits that expectancy and value not only are positively related but also become more strongly related to each other as children get older (Wigfield, 1994). In classroom settings, students who feel more efficacious in math would more likely value performing well in math, while those who are less efficacious in math would less likely to do so (Eccles & Wigfield, 1995).

Although this presumed positive relationship between value and expectancies has received much empirical support in the literature, there are nonetheless situations where discrepancies exist between the two constructs. In a study by Cole, Bergin, and Whittaker (2008), for example, college students who perceived low value in taking low-stake tests were less likely to exert effort in taking the tests, despite their strong self-efficacy. Even when individuals feel competent in performing a certain task, they would not engage in it unless they also perceive value in performing it (Wigfield & Eccles, 1994).

What happens when individuals do not feel competent in performing the tasks that they value? Eccles and Wigfield (1995) stated that if individuals value the tasks at which they are poor, this may negatively influence their self-esteem. Two possible scenarios may follow. First, they may gradually lower the value they place on the tasks in an attempt to maintain positive self-views (Eccles & Wigfield, 2002). Second, when lowering the value is not possible because the task is highly valued by significant other such as parents, they may seek other ways to cope with the situation and to protect their self-worth. We focused on this latter situation, where individuals’ high perceived value, either internally generated or externally imposed, is unaccompanied by high expectancies. In classroom settings, the combination of high values and low expectancies could lead to particularly negative consequences such as stronger perceived stress (Lee, Lee, & Bong, 2013). Heightened stress would prompt students to deploy diverse maladaptive achievement strategies for immediate, yet temporary relief.

**Expectancy x value from the perspective of self-worth theory**

**High value unaccompanied by self-efficacy as a self-worth threat**

Perceiving high value in the task at which one is poor may be perceived by the individual as a threatening experience (Linnenbrink & Pintrich, 2003). From the self-worth theory perspective, this phenomenon results from the dynamics among motive, competence, value and achievement. The theory assumes that individuals have the motive to maintain positive self-regard, and thus strive to protect their self-worth against potential threats (see Covington, 1992 for review). Self-worth refers to individuals’ ‘judgment on their worthiness’ and is assumed to be strongly influenced by their competence beliefs (Covington, 1984).

Based on the equation that individuals’ performance equals to competence, which is also equated with worthiness in classroom settings (Beery, 1975),
self-worth theory asserts that having low competence beliefs in what others as well as themselves deem desirable could provide the individuals with threats to their sense of self-worth (Covington, 2009). In the present study, we expected that this phenomenon would be clearly observed in the domain of English. English is viewed as an important domain, which is highly valued across the whole society, especially in Asian countries, including Korea and Singapore (Liem et al., 2008; Park, 2009; Tickoo, 1996). Because not all students could feel similarly efficacious for performing well in this important domain, the potential negative consequences of perceiving high value unaccompanied by self-efficacy would be more easily observed in English.

Further, the situation where high value is unaccompanied by high expectancies likely involves utility value more than intrinsic value, among the multiple task value components discussed in Eccles–Wigfield’s expectancy-value theory. As a relatively more extrinsic form of task value, individuals’ perceptions of utility value are more heavily affected by others’ views and what is required of them. As such, individuals would find it more difficult to lower utility value than intrinsic value in an attempt to protect their self-worth, even when they hold low expectations of success. Indeed, empirical evidence has shown that utility value is less closely related to expectancies than intrinsic value is (Trautwein, Marsh, Nagengast, & Lüdtke, 2012; Trautwein et al., 2013). Moreover, the negative consequence of high value coupled with low expectancies was more clearly observed with utility value than with intrinsic value (Trautwein et al., 2012).

**Use of defensive strategies upon perceiving a self-worth threat**

Students can use diverse strategies to deal with this threatening situation, which Covington (1984, 1992, 2009) depicted as ‘defensive strategies’. Students employ these strategies out of the motive to protect their self-worth in classroom settings. In situations where failure is anticipated, students strive to divert observers’ attention to factors other than their low ability (Covington & Omelich, 1981). These strategies are maladaptive, however, because using them does not provide real solutions but only a temporary relief (Covington, 1992). In the present study, we selected self-handicapping, procrastination, academic cheating and defensive pessimism as such maladaptive strategies because they are most frequently used in classroom contexts (see Covington, 2009 for review).

In a study using a large-scale data, Lee et al. (2013) found that associations of task value components with self-handicapping and test stress differed, depending on the level of self-efficacy. High values predicted greater use of self-handicapping when self-efficacy was low and this pattern did not depend on the particular task value component under consideration. In Lee et al.’s study, however, the domains in which specific components of task value were measured were not consistent. Also, attainment and intrinsic values were assessed with only a single item each. We tried to address these limitations in the present study and examine whether the interaction between different task value components and self-efficacy would generalise across different types of maladaptive strategies.

Four different types of maladaptive achievement strategies were assessed in this study: (a) Defensive pessimism refers to a strategy of expecting worst outcomes when facing achievement situations (Norem & Cantor, 1986). Setting ‘unrealistically low expectations’ helps students prepare for the possibility of an impending failure
(Martin, Marsh, & Debus, 2001); (b) self-handicapping is defined as a strategy which involves providing legitimate excuses for the possibility of poor performance (Urdan & Midgley, 2001). By creating obstacles in the face of potential failures, students entice others to ascribe their failures to those obstacles (Elliot & Church, 2003); (c) academic cheating includes copying tests or assignments (Baird, 1980) and reflects ‘students’ having tied their self-worth to higher achievement’ (Covington, 1992); and (d) procrastination refers to a tendency to delay performing academic tasks, while experiencing ‘subjective discomfort’ (Solomon & Rothblum, 1984).

Present research
In sum, we aimed to examine the relationships between task value components, self-efficacy and maladaptive achievement strategy use in the present study. Two specific hypotheses were tested. First, the associations between task value and maladaptive achievement strategy use would be different, depending on the level of self-efficacy. Students with low self-efficacy, compared to those with high self-efficacy, would more likely resort to maladaptive achievement strategies upon perceiving high value. Second, different components of task value would demonstrate different patterns in predicting students’ use of maladaptive achievement strategies. Specifically, intrinsic value would predict maladaptive achievement strategy use negatively, regardless of the level of self-efficacy. Utility value, in contrast, would predict maladaptive achievement strategy use positively for students with low self-efficacy. Additionally, we predicted that, in general, students with stronger fear of failure would be more inclined to use maladaptive achievement strategies.

Method
Participants
A total of 591 students in Grade 11 attending a public high school near Seoul, Korea, participated in the present study. Seventeen students were excluded from the analysis because of too many missing responses. The final sample included N = 574 (302 girls and 272 boys). Students came from middle- to low-income families and had a mean age of 16.42 (SD = .49).

Measures
We used existing measures with proven reliability and validity. After translating all survey items into Korean, the research team double-checked whether each of the translated items was consistent in meaning with its original English counterpart. With the exception of fear of failure, which was assessed as a general motive, all items referred to English as a foreign language as a target domain. High scores on the measures signified greater possession of the construct or stronger agreement with the item content.

Fear of failure
We used the Motive to Avoid Failure (MaF) scale to assess fear of failure. MaF is a 15-item subscale of the Achievement Motivation Scale, developed by Nygard and Gjesme (1973; as cited in Hagtvet & Benson 1997) and translated into English by
Hagtvet and Benson (1997). We used Hagtvet and Benson’s short version of MaF, which consists of six items measuring fear and aversion of failing in given situations. Sample items are: ‘Just thinking about working on new, somewhat difficult tasks makes me feel uneasy’ and ‘I am afraid of failing in situations where the outcome is uncertain’. We used a five-point response scale for this measure, ranging from 1 (strongly disagree) to 5 (strongly agree). This scale showed strong internal consistency ($\alpha = .88$) in the study of Hagtvet and Benson (1997) and demonstrated its validity in prior research (e.g. Pang, Villacorta, Chin, & Morrison, 2009). The Cronbach’s alpha in the present study was .79.

Self-efficacy

We used the Academic Self-Efficacy scale of the Student Motivation In the Learning Environment Scales (SMILES; Bong et al., 2012). The Academic Self-Efficacy scale is a subscale of SMILES, developed to measure students’ motivational beliefs, dispositions and academic perceptions concerning engagement and social relationships. It consists of two subscales measuring two types of self-efficacy: self-efficacy for learning and self-efficacy for performance. We used the composite score of the two subscales in the present study. Sample items include: ‘I can understand even the complicated things presented in English class’ and ‘I feel confident that I’ll get a good grade in English’. The scale consists of eight items and showed strong reliability ($\alpha = .93$) in the present study. A response scale ranged from 1 (very strongly disagree) to 7 (very strongly agree).

Intrinsic value

To assess intrinsic value in English, we used the Academic Interest scale of SMILES (Bong et al., 2012). The Academic Interest scale consists of two subscales: situational interest and individual interest. In the present study, we used the individual interest subscale. The interest measure that we used shared many common aspects with the intrinsic value scale. For example, the most widely used intrinsic value scale includes items such as ‘How much do you like math?’ (Wigfield, 1994). Despite their conceptual differences between intrinsic value and interest (e.g. Fredricks & Eccles, 2002), the two scales have been used interchangeably in the literature (Woo, 2012). The definition of intrinsic value by Eccles and Wigfield (2002) as ‘the enjoyment the individual gets from performing the activity or the subjective interest the individual has in the subject’ is also very similar with that of individual interest, which involves values, preferences and positive feelings toward a particular subject (Hidi & Renninger, 2006). The individual interest scale of SMILES consists of five items measuring students’ willingness to engage and re-engage in certain domains or task. Sample items for this subscale are: ‘I find English interesting’ and ‘I feel happy when I learn new things related to English’. A seven-point response scale was used for this measure, ranging from 1 (very strongly disagree) to 7 (very strongly agree). The Cronbach’s alpha for the scale was .87 in the present study.

Utility value

In order to assess the degree to which students find English useful, we used the utility value items among the perceived task value items developed by Eccles and
Wigfield (1995). Although the original items were in the interrogative form, we used the declarative form in the survey to make the items parallel with other items on the survey. The two items were: ‘I find learning advanced high school English useful for what I want to do after I graduate and go to work’ and ‘Learning advanced high school English is useful for my daily life outside school’. A seven-point response scale was used for this measure, ranging from 1 (very strongly disagree) to 7 (very strongly agree). Eccles and Wigfield (1995) reported reliability for this two-item measure to be .62. In the present study, it showed better internal consistency with the Cronbach’s alpha of .73.

Defensive pessimism

The Defensive Pessimism Questionnaire (DPQ), developed by Canter and Norem (1989), was used. Because the content of the original scale only applies to competent students, we adopted the eight DPQ items as used in Martin et al. (2001), so they applied to students at all levels of achievement. Sample items include: ‘I go into academic situations expecting to do worse, no matter how well I have done in the past’ and ‘When going into academic situations, I let others think that I expect to do worse than I really think I’ll do, no matter how well I have done in the past’. A response scale ranged from 1 (very strongly disagree) to 7 (very strongly agree). Martin et al. reported a reliability coefficient of .91. The Cronbach’s alpha in the present study was .95.

Academic cheating

The academic cheating scale developed by Anderman, Griesinger, and Westerfield (1998) was adopted. This scale consists of five items which assess the degree to which students engage in cheating while performing various academic tasks. A five-point response scale was used for this measure, ranging from 1 (strongly disagree) to 5 (strongly agree). Sample items include: ‘I copy answers from other students on English tests’ and ‘I cheat on my English work’. Although evidence of reliability and validity has been reported in prior research (e.g. α = .89 in Anderman, Cupp, & Lane, 2010), the scale showed low reliability (α = .56) in the present study. After excluding one item which showed noticeably high mean score and variability (M = 2.85, SD = 1.23) compared to those of other items (Ms = 1.10–1.44, SDs = .43–.82), the four-item scale showed acceptable reliability (α = .76). We conjectured that students might have perceived the excluded item (i.e. ‘When I don’t understand my English work, I get the answers from my friends’) as a help-seeking rather than cheating behaviour.

Procrastination

To assess the extent to which students procrastinate on English-related tasks, we used the Procrastination Assessment Scale-Students (PASS; Solomon & Rothblum, 1984). PASS consists of two sections. The first section assesses the extent to which students procrastinate, they perceive procrastination problematic and they want to decrease procrastinating behaviour in reference to a given task. The second section assesses possible reasons for procrastination. In the present research, we only used the first section in reference to studying for an English examination and completing
English-related assignments. Sample items include: ‘I procrastinate on English tasks’ and ‘I find procrastination on English-related tasks to be a problem for me’. A response scale ranged from 1 (strongly disagree) to 5 (strongly agree). This measure has proven to be both reliable and valid (Solomon & Rothblum, 1984). The Cronbach’s alpha reliability coefficient for the six-item scale in the present study was .85.

Self-handicapping

We used the academic self-handicapping scale of the Patterns of Adaptive Learning Scales (PALS; Midgley et al., 2000). The self-handicapping scale consists of six items. A sample item is: ‘Some students purposely get involved in lots of activities. Then if they don’t do well on their class work, they can say it is because they were involved with other things. How true is this of you?’ Although this scale is associated with marginally acceptable internal consistency in the present study ($\alpha = .69$), it had demonstrated good reliability and validity evidence in prior studies (e.g. Midgley & Urdan, 2001; Smith, Sinclair, & Chapman, 2002). Midgley and Urdan (2001) reported reliability for this measure to be .86. A response scale ranged from 1 (strongly disagree) to 5 (strongly agree).

Achievement

We asked students to write down their scores on the two English examinations (i.e. midterm and final) in an open-ended form. Research indicates that data from a self-report measure can substitute for objective data (Crockett, Schulenberg, & Petersen, 1987), with the correlation between self-reported and actual grades to be above .85 (e.g. Valiga, 1987). We used the composite score for the analysis. Reliability for this two-item measure was .91.

Procedures

The survey was administered near the end of July, a week after the final examinations, in classrooms where students took regular classes. We introduced the students with the general purpose of the study and distributed the questionnaires with a consent form, informing them that participation was voluntary and their responses would be treated with strict confidentiality. Students completed the survey without the presence of teachers, which we believed was essential to reduce social desirability bias in students’ responses, especially to maladaptive achievement strategy use items. We provided students with stickers to seal the survey upon completion, as a means of further assuring confidentiality of their responses. The whole procedure took 30–35 min in each participating class.

Data Analysis

We coded the data for analysis with the Statistical Package for the Social Sciences (SPSS) 20.0. Missing values were less than 2% across all items and were dealt with the expectation maximisation method. Descriptive statistics were examined to see if the assumption of normality was met. Academic cheating, which was positively skewed, was transformed through the logarithm (numexpr) recode function of SPSS
To test the hypothesised interaction between task value components and self-efficacy on maladaptive achievement strategy use, we conducted hierarchical multiple regression analyses with use of each maladaptive achievement strategy as a dependent variable. Prior to computation of the interaction terms, we centred self-efficacy and the two task value components (i.e. intrinsic and utility value) around their mean scores to avoid problems associated with multicollinearity (Aiken & West, 1991).

In Step 1 of the hierarchical multiple regression, we entered fear of failure as a control variable. In Step 2, we entered the main predictors (i.e. self-efficacy and each task value component). In Step 3, an interaction term between self-efficacy and task value entered the equation. By conducting hierarchical regression analysis in this fashion, we were able to test whether the interaction between the two independent variables could account for a significant portion of the variance in each dependent variable, after the variance explained by fear of failure and the two independent variables was taken out.

Result

Preliminary analysis

Descriptive statistics, including means, standard deviations and internal consistency estimates of each measured variable are presented in Table 1. All scales yielded acceptable internal consistency estimates, with the exception of self-handicapping ($\alpha = .69$).

Table 2 lists zero-order correlation coefficients among the measured variables. Consistent with the extant literature (e.g. Hulleman et al., 2008), moderate to strong correlations emerged between task value components as well as self-efficacy and task value. In particular, self-efficacy correlated more strongly to intrinsic value ($r = .66$) than to utility value ($r = .43$), Fisher’s $Z = 5.63$, $p < .001$. Self-efficacy demonstrated a strong correlation with achievement ($r = .68$), which was significantly stronger than the correlation between either intrinsic value and achievement ($r = .36$, Fisher’s $Z = 7.64$, $p < .001$, or utility value and achievement ($r = .21$, Fisher’s $Z = 10.41$, $p < .001$).

Self-efficacy correlated negatively with all types of maladaptive achievement strategy use ($-.14 \leq rs \leq -.65$). Different associations were observed between task

<table>
<thead>
<tr>
<th>Variable</th>
<th>No. of items</th>
<th>$M$</th>
<th>$SD$</th>
<th>$\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear of failure</td>
<td>6</td>
<td>3.13</td>
<td>.73</td>
<td>.79</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>8</td>
<td>4.25</td>
<td>1.25</td>
<td>.93</td>
</tr>
<tr>
<td>Intrinsic value</td>
<td>5</td>
<td>3.64</td>
<td>1.30</td>
<td>.87</td>
</tr>
<tr>
<td>Utility value</td>
<td>2</td>
<td>5.08</td>
<td>1.44</td>
<td>.73</td>
</tr>
<tr>
<td>Defensive pessimism</td>
<td>8</td>
<td>2.95</td>
<td>1.43</td>
<td>.95</td>
</tr>
<tr>
<td>Academic cheating*</td>
<td>4</td>
<td>.06</td>
<td>.12</td>
<td>.76</td>
</tr>
<tr>
<td>Procrastination</td>
<td>6</td>
<td>3.49</td>
<td>.83</td>
<td>.85</td>
</tr>
<tr>
<td>Self-handicapping</td>
<td>6</td>
<td>2.35</td>
<td>.77</td>
<td>.69</td>
</tr>
<tr>
<td>Achievement</td>
<td>2</td>
<td>63.91</td>
<td>19.63</td>
<td>.91</td>
</tr>
</tbody>
</table>

Note: $N = 574$.

*Academic cheating was log-transformed to satisfy the assumption of normality.
Table 2. Zero-order correlation coefficients among observed variables.

<table>
<thead>
<tr>
<th>Sl. no.</th>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>2</td>
<td>Self-efficacy</td>
<td>–.14**</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>3</td>
<td>Intrinsic value</td>
<td>–.08</td>
<td>.66**</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>4</td>
<td>Utility value</td>
<td>–.01</td>
<td>.43**</td>
<td>.53**</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>5</td>
<td>Self-handicapping</td>
<td>.18**</td>
<td>–.14**</td>
<td>–.05</td>
<td>–.04</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>6</td>
<td>Procrastination</td>
<td>.21**</td>
<td>–.24**</td>
<td>–.12**</td>
<td>.09*</td>
<td>.22**</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>7</td>
<td>Academic cheating</td>
<td>.11*</td>
<td>–.16**</td>
<td>–.10*</td>
<td>–.09*</td>
<td>.27**</td>
<td>–.03</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>8</td>
<td>Defensive pessimism</td>
<td>.27**</td>
<td>–.65**</td>
<td>–.45**</td>
<td>–.29**</td>
<td>.13**</td>
<td>.17**</td>
<td>.18**</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>9</td>
<td>Achievement</td>
<td>–.05</td>
<td>.68**</td>
<td>.36**</td>
<td>.21**</td>
<td>–.14**</td>
<td>–.27**</td>
<td>–.18**</td>
<td>–</td>
<td>–.43**</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01.
value variables and maladaptive achievement strategy use, depending on the type of maladaptive achievement strategies. Specifically, while the two task values showed negative correlations with defensive pessimism ($r_s = -.45$ and $-.29$) and academic cheating ($r_s = -.10$ and $-.09$ with intrinsic and utility value, respectively), they showed no significant relationship with self-handicapping ($ps > .05$). Procrastination correlated negatively with intrinsic value ($r = -.12$) but positively with utility value ($r = .09$). Use of all types of maladaptive achievement strategies correlated positively with fear of failure ($-.11 \leq r_s \leq .27$) and negatively with achievement ($-.43 \leq r_s \leq -.14$).

**Confirmatory factor analysis**

Prior to the main analysis, we tested a measurement model of the task value construct by performing confirmatory factor analysis (CFA). The purpose of this analysis was to ascertain the hypothesised two-factor structure of task value (i.e. intrinsic value and utility value) assessed in the present research. We treated each task value component as a latent variable and used the respective items as observed variables of their respective factor. We used AMOS 16.0 for testing the CFA model. The following indexes were consulted in evaluating the model fit: the ratio between chi-square and its degree of freedom ($\chi^2/df$), the comparative fit index (CFI), the Tucker–Lewis index (TLI) and the root mean square error of approximation (RMSEA). Values of $\chi^2/df$ below 5.00 (Marsh & Hocevar, 1985), CFI above .95 (Hu & Bentler, 1999), TLI at or above .95 (Tucker & Lewis, 1973) and RMSEA close to .06 (Hu & Bentler, 1999) represent good model fit.

An initial CFA model failed to satisfy the above-mentioned standards of good model fit ($\chi^2/df = 8.32$, TLI = .92, CFI = .95, RMSEA = .11), with the correlation between intrinsic value and utility value to be .66. The modification indexes suggested highly correlated errors between the following two intrinsic value items: ‘I want to learn English more, outside my English classes’ and ‘I want to have a career related to English’. Correlated errors result from common aspects between items undefined by the model (Kline, 2011), which in this case referred to ‘extracurricular work in English’. We thus incorporated a correlated error path between these two items. The final model with this single error correlation path demonstrated excellent model fit: $\chi^2/df = 2.69$, TLI = .98, CFI = .99 and RMSEA = .05. Factor loadings for the intrinsic value items ranged from .64 to 89 and those for the utility value items ranged from .73 to 80. All loadings were significant at $p < .001$, suggesting that each latent variable was well represented by its indicators. The correlation between the two value factors was .65, indicating that intrinsic and utility values were empirically separable.

**Hierarchical regression analysis**

We conducted eight hierarchical regression analyses, each predicting defensive pessimism, academic cheating, procrastination and self-handicapping with fear of failure, each of the two task values and self-efficacy. Tables 3–6 present the standardised regression coefficients ($\beta$s), $R^2$ and $R^2$ change for the model in each analysis. When the interaction effect was significant, we plotted interaction graphs for the particular type of maladaptive achievement strategy use. We plotted the graphs at self-efficacy values at the mean, one and two standard deviations above the mean (+1 $SD$ & +2
SD), and one and two standard deviations below the mean (−1 SD & −2 SD), to clearly display differences in the predictive pattern associated with each level of self-efficacy (e.g. Trautwein et al., 2012). We also tested whether the regression coefficient for each slope was statistically significant (Aiken & West, 1991).

**Defensive pessimism**

Table 3 presents results of the hierarchical regression analyses predicting defensive pessimism. Fear of failure independently explained a significant portion of the variance in defensive pessimism ($\Delta R^2 = .075, p < .001$). Self-efficacy also accounted for a significant amount of the variance in defensive pessimism. While self-efficacy

Table 3. Hierarchical multiple regression analysis examining interaction between self-efficacy and task values on defensive pessimism.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Intrinsic value</th>
<th>Utility value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
</tr>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear of failure</td>
<td>.075***</td>
<td>.364***</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>.382***</td>
<td>−.824***</td>
</tr>
<tr>
<td>Value</td>
<td>−.073</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy × value</td>
<td>.004</td>
<td>.082*</td>
</tr>
<tr>
<td><strong>Total $R^2$</strong></td>
<td>.462***</td>
<td></td>
</tr>
</tbody>
</table>

$p < .05, ***p < .001$.

Table 4. Hierarchical multiple regression analysis examining interaction between self-efficacy and task values on academic cheating.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Intrinsic value</th>
<th>Utility value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
</tr>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear of failure</td>
<td>.012**</td>
<td>.118*</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>.020**</td>
<td>−.145**</td>
</tr>
<tr>
<td>Value</td>
<td>.055</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy × value</td>
<td>.011**</td>
<td>−.105**</td>
</tr>
<tr>
<td><strong>Total $R^2$</strong></td>
<td>.042***</td>
<td></td>
</tr>
</tbody>
</table>

$^† p = .06, *p < .05, **p < .01, ***p < .001$. Note: Academic cheating was log-transformed to satisfy the assumption of normality.
negatively predicted defensive pessimism ($\beta_s = -.824$ and $-.875$, both $ps < .001$), task values did not demonstrate significant relationships with it. The interaction term between intrinsic value and self-efficacy entered in Step 3, however, significantly increased the amount of the variance explained ($\Delta R^2 = .004$, $p < .05$) in defensive pessimism ($\beta = .082$, $p < .05$).

Because the interaction was significant, we plotted interaction graphs with slopes at five different levels of self-efficacy (see Figure 1). The regression equations of the two extreme groups are as follows: for high SE (+2 SD); $\hat{Y} = .091X + 1.246$ and for low SE (−2 SD); $\hat{Y} = -.237X + 4.542$. While intrinsic value did not significantly

Table 5. Hierarchical multiple regression analysis examining interaction between self-efficacy and task values on procrastination.

<table>
<thead>
<tr>
<th>Subjective task value</th>
<th>Intrinsic value</th>
<th>Utility value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictor</td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear of failure</td>
<td>.042***</td>
<td>.198***</td>
</tr>
<tr>
<td>Step 2</td>
<td>.045***</td>
<td>-.236***</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td></td>
<td>.063</td>
</tr>
<tr>
<td>Value</td>
<td>.011**</td>
<td>-.080**</td>
</tr>
<tr>
<td>Step 2</td>
<td>.006**</td>
<td>-.046</td>
</tr>
<tr>
<td>Self-efficacy × value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total $R^2$</td>
<td>.098***</td>
<td>.137***</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.

Table 6. Hierarchical multiple regression analysis examining interaction between self-efficacy and task values on self-handicapping.

<table>
<thead>
<tr>
<th>Subjective task value</th>
<th>Intrinsic value</th>
<th>Utility value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictor</td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear of failure</td>
<td>.031***</td>
<td>.168***</td>
</tr>
<tr>
<td>Step 2</td>
<td>.015**</td>
<td>-.136**</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td></td>
<td>.058</td>
</tr>
<tr>
<td>Value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>.004</td>
<td>-.046</td>
</tr>
<tr>
<td>Self-efficacy × value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total $R^2$</td>
<td>.050***</td>
<td>.047***</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.
predict defensive pessimism for students with high self-efficacy, it negatively predicted defensive pessimism ($p < .001$) for students with low self-efficacy.

**Academic cheating**

Table 4 presents results of the hierarchical regression analyses predicting academic cheating. Fear of failure accounted for a significant amount of variance in academic cheating ($\Delta R^2 = .012$, $p < .01$). When each type of value and self-efficacy entered the equation in Step 2, self-efficacy further explained a significant portion of the variance in academic cheating. While self-efficacy negatively predicted academic cheating ($\beta$s = −.145 and −.122, both $p$s < .01, in the intrinsic value and utility value model, respectively), neither type of task value showed a significant relationship with it. The interaction term between intrinsic value and self-efficacy significantly increased the amount of variance explained in academic cheating ($\Delta R^2 = .011$, $p = .01$). The amount of additional variance explained by the interaction between utility value and self-efficacy was marginally significant ($\Delta R^2 = .006$, $p = .06$).

Figure 2 presents the predictive pattern of intrinsic value regarding academic cheating at each level of self-efficacy. The regression equations of the two extreme groups of self-efficacy are as follows: for high SE (+2 SD); $\hat{Y} = -.138X + .158$ and for low SE (−2 SD); $\hat{Y} = .158X + .33$. The prediction coefficients of the slopes were not significant. However, the interaction term was significant, indicating that the degree with which intrinsic value predicted academic cheating depended on the level of self-efficacy.

Figure 3 presents the predictive pattern of utility value on academic cheating. The regression equations used are the followings: for high SE (+2 SD); $\hat{Y} = -.152X + .182$ and for low SE (−2 SD); $\hat{Y} = .1X + .964$. Similar to the preceding result, neither regression coefficient was significant, yet the strengths with which utility value predicted academic cheating differed marginally significantly by the level of self-efficacy.

**Procrastination**

Table 5 presents results of the hierarchical regression analyses predicting procrastination strategy use. Fear of failure again accounted for a significant amount
of the variance in procrastination ($\Delta R^2 = .042$, $p < .001$). Self-efficacy accounted for a significant additional amount of the variance in procrastination, with or without task value. Specifically, self-efficacy negatively predicted procrastination ($\beta = -.236$ and $-.265$, both $ps < .001$, in the intrinsic value and utility value model, respectively). While utility value significantly predicted procrastination ($\beta = .166$, $p < .001$), intrinsic value was not associated significantly with it ($\beta = .063$, $p > .05$). Again, the interaction term significantly increased the proportion of explained variance in procrastination ($\Delta R^2 = .011$, $p < .01$, in the intrinsic value model; $\Delta R^2 = .009$, $p < .05$, in the utility value model).

The following two regression equations illustrate the relationship between intrinsic value and procrastination at each of the two extreme levels of self-efficacy, respectively; for high SE ($+2 \text{ SD}$); $\hat{Y} = -.097X + 3.072$ and for low SE ($-2 \text{ SD}$); $\hat{Y} = .223X + 4.016$. The regression coefficients of both slopes were significant (see Figure 4), with the direction being negative for students with high self-efficacy and positive for those with low self-efficacy.
The regression equations between utility value and procrastination at the two extreme levels of self-efficacy are as follows; for high SE (+2 SD); $\hat{Y} = .028X + 2.996$ and for low SE (−2 SD); $\hat{Y} = .304X + 4.056$. The interaction graphs illustrate (see Figure 5) that no significant relationship existed between utility value and procrastination for students with high self-efficacy. For students with low self-efficacy, however, utility value positively predicted procrastination strategy use ($p < .05$).

**Self-handicapping**

Table 6 presents results of the hierarchical regression analyses predicting self-handicapping strategy use. Fear of failure accounted for a significant amount of the variance in self-handicapping ($\Delta R^2 = .031$, $p < .001$). Self-efficacy was a significant negative predictor of self-handicapping ($\beta s = -136$ and $-094$ to $-136$, both $ps < .01$, in the intrinsic value and utility value model, respectively). Neither intrinsic value nor utility value, however, demonstrated a significant relationship with self-handicapping (both $ps > .05$). Interaction between self-efficacy values was not significant, either.
Discussion
We sought to examine the relationships between task value beliefs, competence beliefs and maladaptive achievement strategy use in this research. In particular, we focused on the situation where discrepancies existed between task value and expectancies for success. We found a partial answer to the question ‘what happens when students are not feeling competent at the tasks that they value?’ which we discuss below.

What happens when high value is unaccompanied by high expectancies?
Of the four maladaptive achievement strategies examined in this study, two of them showed different relationships with task value depending on the level of self-efficacy. On average, students tended to rely less on defensive pessimism, cheating, procrastination and self-handicapping strategies when they possessed strong self-efficacy in the given subject domain, regardless of the type and strength of task value attached to the domain. When students lacked self-efficacy, however, perceiving greater task value in the domain led to the greater use of academic cheating and procrastination.

Our finding that students displayed more maladaptive tendencies when high values were unaccompanied by high expectancies is consistent with the observation of Trautwein et al. (2012). In their study, high values increased achievement when expectancies were high but lowered achievement when expectancies were low. We find these findings to be in line with the argument of self-worth theory (Covington, 1984). In a society where academic achievement is highly valued, being less efficacious in performing important academic tasks would function as threats to students, challenging their worthiness as students. Whereas weak self-efficacy alone could make students vulnerable to self-worth threats, perceiving they are not efficacious in what others view as valuable could amplify the threats even further (Lee et al., 2013). In such threatening situations, students would resort to maladaptive achievement strategies as a means of maintaining their self-worth.

It is particularly noteworthy that the interaction between self-efficacy and task value on maladaptive achievement strategy use proved significant, even after the effects of fear of failure were controlled for. Fear of failure is a personality disposition underlying diverse forms of detrimental achievement tendencies (e.g. Martin et al., 2001). Self-worth theory (Covington, 1992) also acknowledges that students with strong fear of failure are particularly susceptible to self-worth threats and thus are more likely to adopt defensive strategies. The current findings imply that even students without strong fear of failure could engage in maladaptive strivings when they lack self-efficacy for highly valued tasks in desperate attempts to protect their self-worth.

We hypothesised that the interaction between self-efficacy and task value would be more clearly demonstrated with utility value than intrinsic value. This hypothesis did not receive support. The predictive patterns did not differ between the two types of task value in this study. Intrinsic value as well as utility value amplified, rather than buffered, academic cheating and procrastination among students with weak perceptions of self-efficacy. We selected English as a target domain in this research because of the strong value assigned to the domain in Korean society (Park, 2009). Strong value beliefs from a larger group could provide members of the group with
‘internal pressure’, when the values are not fully internalised by individual members. With this less internalised motivation, individuals could engage in self-destructive behaviours to maintain their self-esteem (Knafo & Assor, 2007). Future research should explore whether the present finding is confined to the tasks and domains that are objectively considered important or generalisable across domains.

**Different strategies, different consequences**

The predictive patterns observed in this investigation differed by not the specific task value component but the type of maladaptive achievement strategies. Unlike the patterns observed with other maladaptive achievement strategies, high value decreased defensive pessimism even when self-efficacy was low. High intrinsic value, therefore, operated as a safeguard rather than a risk factor for defensive pessimism. Defensive pessimism is different from academic cheating or procrastination in that the former is a cognitive strategy, whereas the latter two are behavioural strategies.

Rhodewalt and Vohs (2005) classified defensive strategies into two categories, depending on the target against which individuals wish to defend their self-worth. Intrapersonal strategies are primarily cognitive tactics which arise within oneself, whereas interpersonal strategies include cognitive, behavioural and emotional tactics which serve to improve one’s public self-image. Defensive pessimism is considered a representative intrapersonal strategy. It is used to prepare oneself for the possibility of upcoming failure that might hamper their self-image ‘by distorting their psychological reality’ (Rhodewalt & Vohs, 2005). In contrast, cheating and procrastinating are interpersonal strategies used for saving faces in front of others. This other-focused motivation could result in more maladaptive consequences.

As Dweck (1986) argued, children who are concerned with how others judge them are more likely to demonstrate maladaptive behavioural patterns such as helplessness in the face of obstacles, whereas those who focus on their own improvement show adaptive coping behaviours. Presumably, the difference in the present findings between these two types of maladaptive achievement strategies might lie in how strongly students focused on ‘others’ while attempting to maintain positive self-regards.

**Conclusion**

Several limitations of this study should be noted. First, social desirability is always a concern when analysing students’ responses to negative constructs such as maladaptive achievement strategy use and this research is no exception. Nonetheless, we believe that the present results are largely reliable because: (a) we minimised factors contributing to the social desirability threat by having the participants complete the questionnaires in the absence of teachers and seal them before turning them in to assure confidentiality of their responses and (b) all maladaptive achievement strategy use variables so assessed correlated positively with fear of failure and negatively with achievement, which constituted evidence of their concurrent validity. Second, the predictive power associated with the interaction term was rather small. However, given that fear of failure and self-efficacy were allowed to explain a large amount of the variance in each maladaptive achievement strategy use before the interaction term entered the equation, the significant interaction even after controlling for these
variables is particularly meaningful. Third, utility value was measured with a two-item scale in this study. Although this scale (Wigfield, 1994) is a widely used measure of utility value and exhibited acceptable internal consistency in the present research, a scale with a greater number of items could represent the nature of the construct better. Finally, most of the variables were measured at a single time point. Future research should assess variables with temporal intervals to permit estimation of more precise predictor–outcome relationships.

Despite these limitations, the present findings make a unique contribution to the extant motivation literature by demonstrating the potentially negative role of high task value and the condition under which such a negative role might be more easily observed. As the significant interaction between task value and self-efficacy demonstrated, high value attached to the domain of English increased academic cheating and procrastination when students lacked English self-efficacy. It is possible that the strong emphasis on English prevalent in society and the greater influence such external information exerts on East Asians (Markus & Kitayama, 1991) might have magnified the potential interaction between the constructs. Nevertheless, similar observation had been reported in the literature with older students in a different culture, when value was imposed by others rather than internally generated by students themselves (Knafo & Assor, 2007). We encourage future research that investigates other conditions under which attaching greater value poses a threat to one’s self-worth.

A word of caveat seems in order. We are not arguing that value is a negative thing. Quite the contrary, the positive role of task value in many critical aspects of achievement-related strivings, including course enrolment decisions and academic performance, has been demonstrated repeatedly in the literature (e.g. Wigfield & Eccles, 2002). We nonetheless warn, as we have in the past (Lee et al., 2013), the potential danger of high value when students find it impossible to perform well on such coveted tasks. Because lowering value to reduce maladaptive achievement strategy use is neither easy nor desirable, parents and instructors would do well by concentrating their effort on strengthening children’s competence beliefs on highly valued tasks.

Acknowledgements
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References


Trautwein, U., Marsh, H. W., Nagengast, B., & Lüdtke, O. (2012). Probing for the multipli-


