Teachers' transformational leadership and students' employability development: A social cognitive career perspective

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Higher education policy and talent training are failing to meet the ever-changing expectations of employers and society in Taiwan, resulting in a gap between university education and employment. We used social cognitive career theory to explore the relationships between problem-based learning, teachers' transformational leadership, and students' self-efficacy and employability. Participants were 619 undergraduates from 12 Taiwanese higher education institutions. We performed structural equation modeling and found that there were significant positive correlations between students' self-efficacy, problem-based learning, and employability, along with teachers' transformational leadership. Further, problem-based learning and the students' self-efficacy were key mediators of the relationship between teachers' transformational leadership and students' employability. Implications are discussed for related issues and future research involving models of students' employability.

Scholars have confirmed the importance of developing university students' employability. De Vos, De Hauw, and Van der Heijden (2011) defined *employability* as the skills, knowledge, and other qualities individuals must acquire to realize their professional potential and meet employers' needs. Crossman and Clarke (2010) emphasized the link between higher education and students' employability, stating that this relationship affects employers' and graduates' satisfaction with higher education. However, most researchers who have discussed employee performance in the workplace (e.g., De Cuyper, Bernhard-Oettel, Berntson, De Witte, & Alarco, 2008), have neglected the fact that employability training takes root in the higher education curriculum. Indeed, universities must improve students' employment through to-be-clarified factors or modes of operation, and students' employment performance can increase schools' visibility, which is a focus of investment and attention for higher education institutions.

Most factors affecting student performance are indirect (Pascarella & Terenzini, 2005). For example, teachers' positive inspiration and guidance can promote the development of students' employability and influence students' learning motivation, effectiveness, and investment (Robinson, Lloyd, & Rowe, 2008). Previous researchers have found that teachers' use of a transformational leadership style heightens the consciousness of collective interest among students, and helps them achieve their learning goals (Bolkan &

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Goodboy, 2011; Pounder, 2008, 2014; Robinson et al., 2008; Shatzer, Caldarella, Hallam, & Brown, 2014). Using transformational leadership allows teachers to promote students' self-efficacy and aids the development of their skills and abilities, thereby enhancing their employability. For instance, teachers' use of problem-based learning can help students to acquire resource-/information-search capabilities to solve problems, become invested in learning contexts, develop learning effectiveness, and acquire new knowledge to form strategies (Chang, Jong, & Huang, 2012). This is the foundation for developing students' employability (Lent & Brown, 2006).

According to social cognitive theory (Bandura, 1997), intentional behaviors, personal attributions, and environmental influences constitute a triangular relationship of interaction. As an extension of this theory, social cognitive career theory (SCCT) was put forward to explain the influence of satisfaction with education in regard to career development (Lent & Brown, 2006; Lent, Brown, & Hackett, 1994). In the SCCT model there is an indirect effect of environmental and behavioral factors on personal cognitive factors. Because personal cognitive factors directly affect employability, the development of students' employability will be less affected by transformational leadership. *Self-efficacy* is defined in the context of this study as students' belief in their ability to successfully perform education-related behaviors and abilities, and it is an important factor in initiating spontaneous learning motivation and engagement (Parker, Williams, & Turner, 2006), as well as being central to SCCT. Therefore, we combined the social cognitive process variables of self-efficacy, students' employability, and transformational leadership to fill a gap in the existing literature in these fields.

Literature Review and Hypotheses

Social Cognitive Career Theory

Lent and Brown (2006) developed SCCT, extending social cognitive theory (Bandura, 1997) and Lent's (2004) general well-being model by integrating top–down (aptitude) and bottom–up (context) factors into the study of well-being to explain the adaptation process of individuals affected by different factors in education and occupation. Specifically, Lent and Brown considered the influence of students and their background factors on behavior choice by adding career choice, development of interests, and performance to the original model. Further, in SCCT there is a focus on the significance of self-efficacy and learning experience for the development of employability. Thus, we explored the supportive context for the class or course created by teachers via transformational leadership, so as to verify its relationship with students' employability. Furthermore, we used problem-based learning, which is an important part of the learning context and output (Chang et al., 2012), to examine the direct and indirect effects of all aspects in the model.

Students' Employability

Students' perceptions and engagement are important to foster employability for several reasons (Hennemann & Liefner, 2010). First, effective learning requires clear understanding of the value of materials and instruments, which can be enhanced via constructive alignment with explicit learning outcomes (De Cuyper et al., 2008; Van der Heijde & Van der Heijden, 2006). Second, the ability to transfer their acquired skills across contexts, such as from the classroom to the workplace, may be enhanced if students value what they are learning (De Vos et al., 2011). Third, developed skills may be better used in employment if undergraduates recognize the importance of employability, thereby benefiting their employment prospects (Hennemann & Liefner, 2010). Thus, students' employability may be considered as a higher-order construct that includes various components (Hennemann & Liefner, 2010; Pan & Lee, 2011). The students' employability skills and competencies of general ability for work, expertise for work, attitude at work, and career planning and confidence, identified by Pan and Lee (2011) in the Taiwanese context, are the basis of the theoretical framework of this paper.

Transformational Leadership

The concept of *transformational leadership* was proposed by Burns (1978), who stated that leaders who

possess qualities such as enthusiasm, vision, empowerment, mutual cooperation, and creativity can inspire high motivation, performance, and values in their followers. Thus, transformational leadership is a process of communicating leaders' emotions, attitudes, values, and beliefs to motivate followers (Öqvist & Malmström, 2016). The measurement variables summarized by Bass and Steidlmeier (1999) have been used in many studies to measure four dimensions of transformational leadership perception: idealized influence, intellectual stimulation, individualized consideration, and inspirational motivation (Avolio, Bass, & Jung, 1999; Bolkan & Goodboy, 2011; Harrison, 2011; Shatzer et al., 2014).

We included transformational leadership in our SCCT model to explore students' employment development. Poekert (2012) claimed that teachers' leadership is centered on influence and interaction, rather than power and authority. Thus, teachers create a vision for students to follow in class, leading students to remain open-minded and respectful of others, thereby improving their learning practice (Pounder, 2014; Shatzer et al., 2014). Öqvist and Malmström (2016) proposed that students' educational motivation and performance are reliant on teachers' leadership, and that teachers have power over students, for example, in terms of guidance, modeling, enthusiasm, sincere praise, self-efficacy, reinforcement, and inducing interest. Teachers' conveyance of learning values and educational concepts can improve students' commitment to learning and self-efficacy (Harrison, 2011; Pounder, 2014). Thus, we proposed the following hypothesis:

Hypothesis 1: Teachers' transformational leadership will positively predict students' self-efficacy.

Students' employability is more diversified than their skills and abilities. Therefore, teachers must guide students to cultivate their own employment conditions via internal and external incentives (Bogler, Caspi, & Roccas, 2013; Harrison, 2011). Scholars have found that transformational leadership-oriented teachers are more competent than are those who use a transactional leadership style in leading students to reach individual or group goals and achieve high learning satisfaction (McGrath, Comfort, Luo, Samaranayake, & Clark, 2006). To establish students' learning values and teach them more skills, teachers must offer opportunities for students to participate, trust in responses from teachers, and pursue refinement of their learning values (Bogler et al., 2013; Harrison, 2011; Pounder, 2014). Thus, we formed the following hypothesis:

Hypothesis 2: Teachers' transformational leadership will positively predict students' employability.

Students must gain employment knowledge before entering the workplace. Previous researchers have indicated that problem-solving skills are a core capability gained from learning (De Cuyper et al., 2008; Pan & Lee, 2011; Van der Heijde & Van der Heijden, 2006). *Problem-based learning* is an effective learning model (Chang et al., 2012; Dunlap, 2005; McGrath et al., 2006), in which student-centered teaching guidance is emphasized, and in which the learning process is divided into the five stages of proposing a problem, establishing a hypothesis, collecting data, testing the hypothesis, and summarizing the information. However, the problem-based learning approach is created not via students' learning behaviors, but through teachers' guidance and curriculum design (Tagg, 2003). Bolkan and Goodboy (2011) indicated that teachers who promote participation in specific learning contexts generally facilitate individualized consideration and intellectually stimulating conversations among students. By sharing opinions and collaborating with each other, students are exposed to a multitude of ideas and can address problems in new ways. Therefore, through transformational leadership teachers can introduce different theoretical models and instructional designs to inspire students to improve insights in the classroom and develop problem-oriented thinking (Chang et al., 2012; Pounder, 2008, 2014; Robinson et al., 2008). Thus, we proposed the following hypothesis:

Hypothesis 3: Teachers' transformational leadership will positively predict students' use of problem-based learning.

Students' Self-Efficacy

Bandura's (1997) social cognitive theory has been used in research on many fields of behavior, especially regarding the impact of self-efficacy on aspects of task performance, such as students' academic

achievement (Choi, 2005; Dunlap, 2005). In the learning situation, students' perceived self-efficacy affects their academic interest, cognitive ability, learning motivation, emotion management, and achievement growth (Bandura, 1997). Nevertheless, conclusions differ regarding the relationship between outcome variables and self-efficacy (Lent & Brown, 2006; Lent, do Céu Taveira, & Lobo, 2012). The measurement methods used may be the reason for this difference. There is a high degree of predictive validity when measuring task-specific self-efficacy, that is, the significant effects of self-efficacy on measurable variables and performance indicators (Bandura, 1997; Choi, 2005). However, context-specific self-efficacy has been generalized by using operational variables (e.g., academic self-efficacy; Lent, Brown, & Gore, 1997) to study different tasks in various fields.

Zhao, Seibert, and Hills (2005) used social cognitive theory to understand the relationships between the personal characteristics and self-efficacy, entrepreneurial intention, and cognitive experience of a group of students enrolled in a Master of Business Administration course. Their results show that high self-efficacy can enhance students' understanding and provide them with the self-confidence required to start a business or enter the workplace, and can also improve their work attitude and career planning. Dacre Pool and Qualter (2013) pointed out that students have low initiative in the formation and application of employment power, which can be attributed to students' lack of self-efficacy or low motivation to pursue employment knowledge. Therefore, students' self-efficacy matters in developing and maintaining their social connections and relationships so that they can acquire, use, and manage the interpersonal relationships, technology, and knowledge components that are needed in the workplace. Thus, we formed the following hypothesis:
Hypothesis 4: Self-efficacy will positively predict students' employability.

According to the above arguments, teachers can use transformational leadership to provide support and guidance for students' learning, which will help improve students' employability (Bogler et al., 2013; Harrison, 2011; Pounder, 2008, 2014). In the SCCT model cognitive variables can enhance the support derived from transformational leadership and further the development of students' employability. Garriott, Flores, and Martens (2013) used SCCT to examine the learning interests and learning goals of first-generation college students from low-income households, and found that self-efficacy has a significant indirect (i.e., mediating) effect on support and goals. Teachers provide the supporting elements of transformational leadership during classes to give students motivation and confidence to develop skills, acquire related knowledge (Wang & Fu, 2015), and strengthen their psychological cognition regarding career planning, thereby cultivating employability. Thus, we proposed the following hypothesis:
Hypothesis 5: Self-efficacy will mediate the relationship between transformational leadership and students' employability.

Problem-Based Learning

Regarding problem-oriented learning measurement, Chang et al. (2012) proposed that problem resolution and knowledge sharing should be the major measurement variables. Problem resolution means addressing problems and challenges facing individuals or groups, breaking existing thinking, and recombining ideas and problem-solving plans, whereas knowledge sharing is focused on the problem-solving process and establishing a common understanding.

Researchers have shown that learning opportunities enhance individuals' ability and performance outcomes, thus improving their self-efficacy (Zhao et al., 2005). Learning experiences gained over a long period of time affect students' subjective assessment of actions (challenges) and individual abilities (skills) regarding environmental opportunities. Therefore, in addition to internal incentives, learning activities should be designed to encourage students to explore the meaning of learning, so as to shape their long-range learning goals and predict their individual career tendency (Delle Fave & Massimini, 2005).

Individuals' performance and self-realization are also closely correlated with self-efficacy (Lent & Brown, 2006). Dunlap (2005) found that problem-based learning helps students to acquire professional knowledge

and skills required in the workplace; however, learning effectiveness is difficult to realize without self-efficacy as a prerequisite. Therefore, the focus of a problem-oriented teaching strategy should be on setting both short-term and long-term goals as an information source of learning improvement, thereby enhancing students' self-efficacy. Thus, we proposed the following hypothesis:

Hypothesis 6: Problem-based learning will positively predict students' self-efficacy.

Problem-based learning is helpful in enhancing students' interest in specialized applications and learning, and is connected with students' employability as it facilitates developing learning attitudes and higher-level thinking skills in relation to practical issues, such as critical analysis, problem solving, and reflection (White et al., 2004). Scholars have confirmed that students who complete problem-based learning courses show changes in their attitudes, behaviors, and motivation that result in greater learning autonomy, critical thinking, and employment-related abilities. Therefore, we posited the following hypothesis:

Hypothesis 7: Problem-based learning will positively predict students' employability.

Researchers have found that learning context has a decisive influence on students' employability, depending on differences in attributes (Martin, West, & Bill, 2008); thus, context is an important reference for learning processes and outcomes. Although teachers can use transformational leadership to guide students in learning to enhance their motivation and improve their abilities, scholars have indicated that students must build their own knowledge and develop significant cognitive and social connections between experience, prior knowledge, and new acquired knowledge by cooperating with other learners and teachers (Mierson & Freiert, 2004), thereby improving their employability. Therefore, we proposed the following hypothesis:

Hypothesis 8: Problem-based learning will mediate the relationship between transformational leadership and students' employability.

Problem-based learning is a trial-and-error process and a learning context: Students try new problem-solving strategies and derive new thinking models in different problem-solving contexts. In this process, students can develop learning beliefs that allow them to confidently face problems and challenges (Cai, 2013). Conversely, higher self-efficacy may buffer the reduction in employability caused by a learning context that has insufficient richness and connotation (Dunlap, 2005). Per SCCT, students' self-efficacy smooths the learning process (van Dinther, Dochy, & Segers, 2011), enhancing the effect of problem-based learning on students' employability. Thus, we proposed the following hypothesis:

Hypothesis 9: Self-efficacy will mediate the relationship between problem-based learning and students' employability.
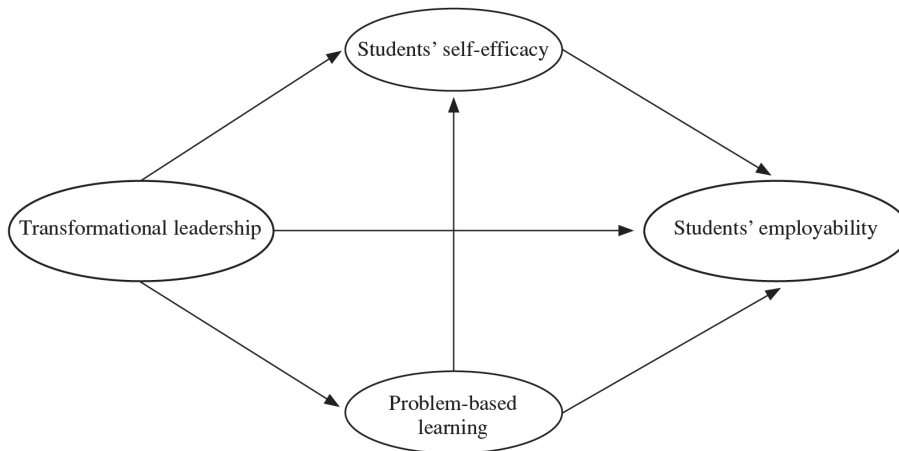
The research framework is shown in Figure 1.

Figure 1. Research framework.

Method

Sampling

The large number of higher education institutions in Taiwan made it infeasible for us to sample all schools; therefore, purposive sampling was employed. To accurately measure college students' perceptions of the focal variables, we set two principles for sampling: First, junior and senior students who had adapted to college life were taken as respondents, and second, we targeted students with a clear employment orientation, so as to enhance the representativeness of the sample.

Participants and Procedure

We initially contacted via telephone and email colleges with teachers who were willing to complete the questionnaire. Students provided informed consent to take part in the study. Of the 1,000 questionnaires we distributed to these students enrolled in social sciences and natural sciences courses at 12 higher education institutions, 619 responses were valid (61.9% response rate). We considered school characteristics, including geographic location, school size, category (university, polytechnic, other), and attributes (national or private), before sampling to increase the generalizability of the study. Regarding the sample structure, 48.9% (303) of respondents were men and 51.1% were women.

Measures

The scales were originally developed in the English language and, for our study, were translated into Chinese by a qualified translator, after which seven professors in the field of higher and vocational education evaluated the equivalence and clarity of the translation. All items were measured on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*).

We measured students' employability with 18 items divided across four dimensions (Pan & Lee, 2011): the general ability for work (eight items), expertise for work (four items), attitude at work (three items), and career planning and confidence (three items). A sample item is "I have gained professional knowledge and skill."

The 16 items we used to measure teachers' transformational leadership were revised from Pounder's (2008) study to fit the classroom setting. This scale comprises four dimensions: idealized influence (four items), intellectual stimulation (four items), individualized consideration (four items), and inspirational motivation (four items). A sample item is "My teacher is willing to provide help outside of class."

We used six items with high reliability and validity, revised from Rigotti, Schyns, and Mohr (2008), to measure students' self-efficacy. A sample item is "I can remain calm when facing difficulties in my academic career because I can rely on my abilities."

To assess problem-oriented learning we adopted the six-item scale developed by Chang et al. (2012). The two dimensions are knowledge sharing (three items; e.g., "I will share all sources for picture, text, and other information that I find with the other students") and problem solving (three items; e.g., "I apply my knowledge to new situations to solve problems and reach decisions").

Results

Measurement Model

All scales were found to be reliable, with Cronbach's alpha values ranging from .83 to .96. To gauge the construct validity (both convergent and discriminant) of the scales, we used confirmatory factor analysis via Amos 23.0, and adopted the convergent validity criteria recommended by Hair, Black, Babin, and Anderson (2010). The evaluation standard for acceptable discriminant validity is the square root of the average variance extracted (AVE) for one dimension being greater than the correlation coefficient with any other dimension(s). As the results in Table 1 indicate, all three criteria for convergent validity were met. In addition, although the correlations of idealized influence–intellectual stimulation and of generalized ability for work–expertise for work were higher than the square root of the AVE, both scenarios occurred in the same variable (transformational leadership and students' employability) and, as expected, the correlation coefficients were high. Most correlation coefficients were less than the square root of the AVE within one dimension, suggesting that each dimension in this study had good discriminant validity.

Table 1. *Measurement Model*

	1	2	3	4	5	6	7	8	9	10	11
1. II	**.83**										
2. IS	.88	**.85**									
3. IC	.82	.82	**.82**								
4. IM	.80	.79	.81	**.84**							
5. SSE	.51	.52	.57	.53	**.77**						
6. KS	.53	.51	.49	.52	.53	**.82**					
7. PS	.47	.47	.54	.48	.65	.70	**.75**				
8. GAW	.48	.47	.50	.51	.50	.53	.55	**.74**			
9. EW	.47	.46	.50	.50	.50	.50	.52	.81	**.80**		
10. AW	.53	.51	.55	.54	.56	.53	.57	.76	.75	**.77**	
11. CPC	.53	.51	.53	.54	.56	.50	.53	.66	.64	.74	**.83**
Cronbach's α	.90	.91	.90	.90	.91	.86	.86	.90	.88	.80	.87
AVE	.70	.72	.67	.70	.60	.67	.56	.55	.64	.59	.68
CR	.90	.91	.89	.90	.90	.86	.79	.91	.88	.81	.87

Note. The square root of average variance extracted (AVE) values are shown in **boldface** on the diagonal. II = idealized influence, IS = intellectual stimulation, IC = individualized consideration, IM = inspirational motivation, SSE = students' self-efficacy, KS = knowledge sharing, PS = problem solving, GAW = general ability for work, EW = expertise for work, AW = attitude at work, CPC = career planning and confidence, CR = composite reliability.

Verification of Structural Model

We used structural equation modeling (SEM) to calculate the correlations between variables. Inflated outcomes, coupled with the fact that some variables may have deviated significantly from a normal distribution, resulted in poor fit of standard modeling, so instead we used item parceling for SEM (Little, Cunningham, Shahar, & Widaman, 2002). The chi square/degrees of freedom ratio of 2.47 was below the cutoff criterion of 3; the parsimonious normed fit index of .70 was greater than the minimum accepted value of .50; and the goodness-of-fit index of .97, adjusted goodness-of-fit index of .94, normed fit index of .98, comparative fit index of .99, and incremental fit index of .99 were greater than the minimum accepted value of .90. In addition, the root mean square error of approximation of .05 was below the cutoff criterion of .06.

The SEM findings are shown in Figure 2. There was a significant positive correlation between teachers' transformational leadership and students' self-efficacy, supporting Hypothesis 1. There was a significant positive correlation between teachers' transformational leadership and students' employability, supporting Hypothesis 2. There was a significant positive correlation between teachers' transformational leadership and problem-based learning; therefore, Hypothesis 3 was supported. There was a significant positive correlation between students' self-efficacy and students' employability, supporting Hypothesis 4. The correlation coefficients of the effect of problem-based learning on students' self-efficacy and students' employability were both positive and significant, so Hypotheses 6 and 7 were also supported.
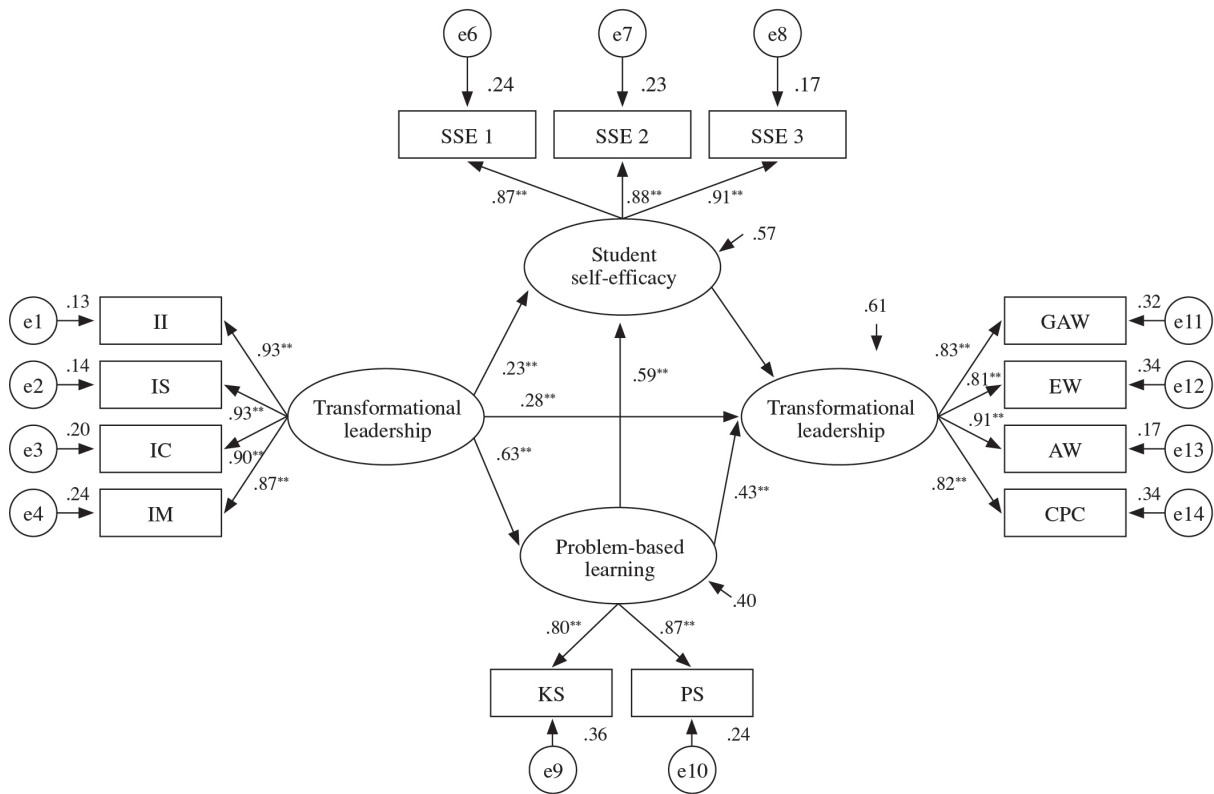
Figure 2. Structural model. II = idealized influence, IS = intellectual stimulation, IC = individualized consideration, IM = inspirational motivation, SSE = students' self-efficacy, KS = knowledge sharing, PS = problem solving, GAW = general ability for work, EW = expertise for work, AW = attitude at work, CPC = career planning and confidence.

As shown in Table 2, the path coefficient of the indirect effect of transformational leadership on students' employability through the mediators of students' self-efficacy and problem-based learning was positive and significant. Following the suggestion by Shrout and Bolger (2002), we used the ratio of indirect effect to total effect as the evaluation index of indirect effect intensity; this showed that the intensity of the indirect effect was much greater than that of the direct effect. Therefore, Hypotheses 5 and 8 were supported. Furthermore, the indirect effect of self-efficacy as a mediator of the relationship between problem-based learning and students' employability was positive and significant, supporting Hypothesis 9.

Table 2. *Path Coefficients of Direct, Indirect, and Total Effects*

Construct	Effect	Students' self-efficacy	Problem-based learning	Students' employability
Transformational leadership	Direct effect	.23	.63	.28
	Indirect effect	.37	–	.38
	Total effect	.60	.63	.66
Students' self-efficacy	Direct effect	–	–	.17
	Indirect effect	–	–	–
	Total effect	–	–	.17
Problem-based learning	Direct effect	.59	–	.43
	Indirect effect	–	–	.10
	Total effect	.59	–	.53

Discussion

We examined whether teachers' use of a transformational leadership style would positively affect students' employability, assuming that transformational leadership would have a direct effect on problem-based learning, students' self-efficacy, and students' employability. The results support this assumption. We also developed a model of students' employability by using SCCT as a way to interpret teachers' transformational leadership.

Theoretical Implications

Unlike Dacre Pool and Qualter (2013), who explored the relationship between self-efficacy and employability with a sample of serving staff, we recruited junior and senior university students as participants. Therefore, our results add to the literature on the SCCT model and employability theory. Because employability is a psychosocial facet, it can be explained through the social cognitive variable of self-efficacy (Bandura, 1997). Additionally, by establishing strong self-efficacy, students can promote their ability to organize, manage, and execute tasks; in this way, we have developed a socialized model of learning and enhancing students' employability.

The results reveal a positive and direct impact of problem-based learning on the development of students' employability. That is, the design of the learning context was highly correlated with students' employability and stimulated positive behaviors and abilities in students. A reason for this outcome may be that problem-based learning helped the students improve their own knowledge and abilities, so that personal prerequisites and experience could be meaningfully linked with newly acquired knowledge. Although problem-based learning has been found to have a significantly positive effect on the acquisition of expertise, no consistent outcome has been found for student achievements (White et al., 2004). This may be due to differences in the research samples used in earlier studies, leading to varied needs of different professional fields for problem-based learning.

We also examined mediating mechanisms in the relationship between teachers' transformational leadership and students' employability. Students with greater awareness of teachers' transformational leadership showed higher self-efficacy and greater skill in problem-based learning, both of which enhance students' employability. This is consistent with the findings of Lent et al. (2012) that students' self-efficacy and problem-based learning play an important role in the SCCT model, and have a positive influence on the development of students' employability.

Practical Implications

Our findings have implications as a reference for universities and teachers in guiding students to develop their employability. Information could be provided at universities related to teachers' transformational leadership and its application in combination with teachers' professional development, or staff could formulate a professional development program for teaching by understanding in advance teachers' self-evaluated transformational leadership style and students' assessments of teaching. Because teachers who use transformational leadership focus on students' perception of their care and guidance, as well as on their own teaching goals, we recommend that teachers seek to understand students' cognition of transformational leadership when planning leadership practices in the future, so references for teachers' leadership style and adjustments to teaching activities are continually provided.

According to social cognitive theory, self-efficacy can be improved through such factors as subjective experience, alternative experience, verbal persuasion, and emotional state (Bandura, 1997). All these antecedent factors except subjective experience can be obtained in the interactive process of transformational leadership and problem-based learning (Bass, 1999). Thus, we suggest that teachers encourage students, thereby becoming another source of confidence for problem solving in addition to family and peers, which will help them to reduce frustration from learning difficulties or lack of ability. Establishing a knowledge-sharing learning environment will allow students to consider problems from different perspectives, as will encouraging problem solving through experience sharing and teamwork (Chang et al., 2012). We suggest that these strategies will help students engage in various learning processes and gain knowledge required to improve their employability.

Research Limitations and Directions for Future Research

There are several limitations in this study that represent directions for future research. First, transformational leadership has previously received considerable attention in the business management field. Although we constructed our research framework using SCCT and have extended findings for learning theories, other theories could be used to explain how to enhance students' learning ability and effectiveness, such as knowledge-management theory, motivation theory, and demand hierarchy theory. Second, students should remember that their learning performance is an employability indicator, mainly because actual employability data are not easy to obtain owing to personal privacy requirements. In future, if the practical academic achievements of students can be considered while respecting research ethics, it may be possible to gain a better understanding of the relationship between learning context and students' learning ability. Third, time and space constraints meant we included only 12 colleges in this study, spanning 619 valid respondents and an undifferentiated study area. Further, scholars believe that gender is an important factor affecting students' employability (Lent & Brown, 2008); thus, in addition to expanding the sample size and obtaining a balanced sample of genders to improve research representativeness, multigroup discussions or comparisons should be conducted to propose pluralistic and in-depth policies for higher education.

Acknowledgements

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