

**Learning With Self: Structural Model of Self-Construals, Social Achievement Goals,
Achievement Goals and Study Strategies of University Students in Hong Kong**

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Abstract

Achievement motivation is suggested to be a good predictor of study behaviours and academic achievement that individuals' goals are deciding their tendencies of achievement via cognitions (Cogvinton, 2000), their goals controlling observable achievement behaviours and thus affecting their academic achievement. In addition, Boekaerts (1998) suggested that students' study behaviours are theoretically influenced by self-construals that interdependent self-construal students prefer cooperative study than independent self-construal students do. Kobayashi (2005) also found that interdependent self-construal scores was positively correlated with cooperative study scores ($r = .24, p < .05$), whereas independent self-construal score was positively correlated with individual study score ($r = .30, p < .05$). However, these studies could not explain adequately how students' self-construals affect their achievement motivations (achievement goals and social achievement goals), their learning behaviours. The present study attempted to establish structural models containing the constructs of self-construals (independent vs. interdependent), social achievement goals (mastery, performance-approach, performance-avoidance), social achievement goals (social development, social demonstration-approach, social demonstration-avoidance), study strategies (deep vs. surface). It was hypothesized that there were significant relationships among self-construals, social and achievement goals and study strategies at the $p = .05$ level. Around 280 Hong Kong university students were invited to participate in the present study. Findings indicated that independent self-construal had positive and significant effect on mastery goal and performance-avoidance goal, but negative and significant effect on performance-approach goal, whereas interdependent self-construal had significant positive effect on mastery goal and performance-approach goal. On the other hand, independent self-construal had positive and significant effects on social development goal and social demonstration-approach goal, but no effect on social demonstration-avoidance goal. Interdependent self-construal had positive and significant effects on social development goal and social demonstration-avoidance goal, but no effect on social demonstration-approach goal. Among the three social goals, both social demonstration-approach goal and social demonstration-avoidance goal had positive and significant effects on surface study approach. More importantly, structural models (path analyses utilizing LISREL) comprising the complex interrelationships among self-construals, achievement and social goals and study strategies could be established and supported by empirical data. These findings could contribute to help broaden the knowledge in understanding the mysterious mechanism on how students' self-construals could influence the achievement goals and also their learning processes and behaviours. Implications of major findings were discussed at the end in this paper.

Introduction

Motivation had been hypothesized as a series of processes with three steps—physical and mental activity, goals, and motivated activities (Schunk, Pintrich, Meece, 2007). The change of individuals' mental activity is the prerequisite of forming goals. Individuals then set a goal and lastly achieve it by actual behaviours. All of us are supposed getting through those three steps before every action. On the other hand, experts suggested individuals' view of self takes a role on human motivation (Aronson & et al., 2006; Matsumoto, 2000; Waugh, 2004). Accordingly, the view of self theoretically takes effects on behaviours. The following paper is going to explore the role of self in between goals setting and students' learning behaviours within the Chinese context.

Literature Review

Self functions as executive on human behaviours (Aronson & et al, 2006) and had been proven empirically. It was found to take a role on predicting individuals' behaviours (Hay & et al., 1997) by means of determining thoughts, emotions, feelings, as well as motivations (Matsumoto, 2000). In educational speaking, students' learning behaviours should be controlled by self. Boekaerts (1998) and Kobayashi (2005) found students' self decided their study behaviours that students' interdependent self-view scores was positively correlated with cooperative study scores ($r = .24, p < .05$), whereas independent self-construal score was positively correlated with individual study score ($r = .30, p < .05$). With these findings, self is doubtlessly associated with individuals' learning behaviours. Nevertheless, the mechanism behind is suspected. With reference to the model of motivation (Schunk, Pintrich, Meece, 2007), goals are suspected to be mediators between self and learning behaviours.

Regarding the goals, researchers suggested the relationship between students' goals and learning behaviours (Anderman & et al., 1998; Dweck & Elliot, 1988; Pintrich & Garcia, 1991; Pintrich & Schrauben, 1992). Ample studies suggested achievement goals are a good predictors of study behaviours (Brophy, 2004; Schunk & Swartz, 1993; Zimmerman & et al., 1992) and further predicts academic achievement (Yip, 2007; Yip & Chung, 2002). It has been explained that the goals are deciding students' tendencies of achievement (Covington, 2000). Accordingly, students' achievement goals theoretically control their actual learning behaviours and thus affect academic achievement.

Besides, students' social goals are suggested influencing their behaviours in academic situations (Arias, 2004), which we still have little understanding of the role of it (Aria, 2004; Ryan & Shim, 2006). According to Ryan and Shim's qualitative findings (2006), it is believed students' study behaviours are also influenced by their goals in social situation. They then confirmed social goals among children and adolescence by means of conducting confirmatory factor analysis (Ryan & Shim, 2008). It is believed that the learning behaviours are influenced by individuals'

achievement goals as well as social goals, which the learning behaviours are significantly predicting academic achievement (Yip, 2007; Yip & Chung, 2002).

In this study, it is believed that individuals' view of self decides individuals' goals which their learning behaviours are determined based on that goals—achievement goals and social goals. A structural model of self-construals, goals (achievement goals and social achievement goals), and study strategies is hypothesized accordingly. The current study is to empirically examine this structural model to explore relationship of these constructs. We suggested self-construals are significantly predicting variable of study strategies with achievement goals and social achievement goals as mediators.

Conceptual Definitions of Terms

Self-construals are conceptually defined, according to Singelis (1994), as individuals' "self-view" within the community in which the "view" contains variance of components, for instances, thoughts, feelings and actions. Generally, there are two sub-types of self-construals, namely, independent self-construal and interdependent self-construal (Aronson & et al, 2006; Markus & Kitayama, 1991, 2001; Singelis, 1994; Sun, 2008). Independent self construal refers to individuals view themselves independently with others that they do not linked with surrounding people. Interdependent self construal, in contrast, refers to individuals view themselves interdependently with others that they focus on relationship with others.

Achievement goals refers to specific motives students adopted in academic situations (Ames, 1992; Anderman & Midgley, 1997; Elliot & Harackiewicz, 1996; Pintrich, 1999, 2000a, 2000b) which is divided into three sub-types—mastery goal, performance-approach goal, and performance-avoidance goal. Students with mastery goal tend to master the task for their competence. Students with performance-approach goal are seeking competence by approaching success, and those with performance-avoidance goal are seeking competence by avoiding failure.

Social achievement goals are defined as goals achieving particular social outcomes and interactions (Wentzel, 2003). Ryan and Shim (2006, 2008) divided social achievement goals into three sub-types, they are, social development goal (individual concentrates on development of their social competence aiming to get insights about themselves and others), social demonstration-approach goal (individual concentrates on demonstrating their social competence for attaining social status, eminence, and desirable judgement from others), and social demonstration-avoidance goal (individual concentrates on avoiding showing social incompetence and receiving undesirable judgement or social rejection).

Biggs defined study strategies as students' typical behaviours for academic tasks (Biggs & et al., 2001). He supposed two kinds of study strategies—deep approach and surface approach. Students tend to be motivated by intrinsic interest and maximise meaning in academic tasks are

recognized as adopting deep approach, while students tend to be fear of failure and having narrow target and rote learning are adopting surface approach.

Theoretical Contribution

Doubtlessly, self-view is associated with learning behaviours because the relationship has been theoretically and empirically confirmed in many studies (Aronson & et al., 2006; Baumeister & Vohs, 2003; Markus & Kitayama, 1991, 2001; Matsumoto, 2000; Singelis, 1994), but the mechanism behind has seldom been explored. This research hypothesizes a structural model with self-construals, achievement goals, social achievement goals, and study strategies. Self-construals are assumed working as the executive in controlling study strategies with two mediators, the achievement goals and social achievement goals. This model is going to be examined empirically by conducting path analysis. Moreover, this study is also trying to broaden the understanding of self-view in Chinese culture. Matsumoto (2000) and Covington (2000) suggested self is a construct which vary in different cultures. Ample researchers who studied self-construals, notwithstanding, conducted few researches into Chinese context. The present study is an attempt to explore the effect of self-construals on learning behaviours in Chinese students and to contribute in such knowledge gap.

Research Question

Do self-construals predict study strategies with mediators (achievement goals and social achievement goals)?

Hypotheses

There are significant relationships, in terms of magnitude and direction of the path coefficients, connecting self-construals, achievement goals, social achievement goals and study strategies at the $p = .05$ level.

Method of Study

Totally 288 university students from Hong Kong's tertiary institutes were sampled, and asked to complete a series of questionnaire concerning the four latent variables for data analysis. Path analyses (utilizing by LISREL) would be used for the methodology of statistical data analysis.

Measurement of Variables

There are totally four separated scales included in a single questionnaire with a part of gathering demographical information of the participants. All items were scaled by a 5-point Likert-type format (1-strongly disagree, 5- strongly agree). In order to correspond to local cultural setting, the items included in the scales were translated into Chinese.

Self-Construals

Independent Self-Construal Scale and Interdependent Self-Construal Scale developed by Singelis (1994) were adapted for measuring self construal. It originally contained 45 items but 21 items were identified to be unsatisfactory after item analysis. Reliabilities for the Interdependent Self-Construal Scale and Independent Self-Construal were found respectively .74 and .70, with each construct was measured by 12 items. Previous research suggested constructs of Independent Self-Construal and Interdependent Self-Construal was correlated (Gahan & Abeysekera, 2009). The 24-item version was adopted in this study.

Achievement Goals

Achievement goal was measured by the Achievement Goal Questionnaire- Revised (AGQ-R) (Elliot & Murayama, 2008). The scale was developed by Elliot and McGregor (2001) which divided achievement goals into 2X2 framework—Valence (approach-avoidance) and Definition (mastery and performance). There were originally four achievement goals, namely, *Mastery-approach Goal* (focus on attaining task-based or intrapersonal competence), *Mastery-avoidance Goal* (focus on avoiding task-based or intrapersonal incompetence), *Performance-approach Goal* (focus on attaining normative competence), and *Performance-avoidance Goal* (focus on avoiding normative incompetence) (Elliot & McGregor, 2001). Elliot (2008) examined the construct validity of AGQ by conducting confirmatory factor analysis (CFA) in which he found that the coefficient of mastery-avoidance goal was comparatively lower than the other goals. Consequently the new framework has been modified to three goals, *Mastery Goal*, *Performance-approach Goal*, and *Performance-avoidance Goal*. AGQ-R was used for measuring achievement goals in this study.

Social Achievement Goals

Social goal is an under-researched area (Wentzel, 1996; Wentzel & Wigfield, 1998). Ryan and Shim (2006) conducted a study upon developing construct of social achievement goals and its association with achievement goals in adolescent population. Researchers hypothesized three kinds of social goals—*Social development goal*, *Social demonstration-approach goal*, *Social demonstration-avoidance goal*. CFA was conducted showing that standardised coefficients of all items on measuring the goals were higher than .70 (Ryan and Shim, 2006), afterwards, Ryan and Shim (2008) studied social achievement goals in early adolescence; they finally developed an 18-item-scale on social achievement goals with 6 items for each goal. Cronbach's α were found acceptable in all the goals (social development goal=.87; social demonstration-approach goal=.89, social demonstration-avoidance goal=.84). This 18-item scale of social achievement goals was adapted for the present study.

Study Strategies

Biggs & et al. (2001)'s Revised-Study Process Questionnaire-Two Factors (R-SPQ-2F) was adapted for assessing students' study behaviours in this study. Originally, he developed two

questionnaires for measuring study behaviours among students by means of The Study Process Questionnaire (SPQ) (1987a, 1987b) and The Learning Processes Questionnaire (LPQ) (1987b). They revised the SPQ and updated students' study processes with two dimensions—*Deep Approach* (including *deep motive* and *deep strategy*) and *Surface Approach* (including *surface motive* and *surface strategy*) (Biggs & et al., 2001). Two hundred and ninety nine Hong Kong students were asked to scale 43 items concerning study strategies with a 5-point Likert scale. Reliability test was done in which 20 items (10 items for deep approach and 10 for surface approach) were finally kept. The study processes model with 4 constructs was confirmed by CFA. Results showed $CFI=.904$ and $SRMS=.058$ (Biggs & et al., 2001).

Results

For completely analysing relationships in between those four constructs, two kinds of techniques of Path Analyses were utilized by LISREL, findings are presented as follows:

Descriptive Statistics, Correlations and Reliabilities

There were totally 288 participants from Hong Kong's universities being invited to take part in this study, including 96 (33.3%) males and 192 (66.7%) females, aged between 17 to 28 ($M=20.98$, $SD=1.54$). Table 1 indicates the mean, standard deviations and Pearson correlations for self construal, achievement goals, social achievement goals and study strategies.

Table 1. *Means, Standard Deviations, and Pearson Correlations for Self-Construals, Achievement Goals, Social Achievement Goals and Study Strategies.*

Variables	1	2	3	4	5	6	7	8	9	10
1. IDSC	1									
2. ITSC	.183*	1								
3. MG	.297*	.170*	1							
4. PAPG	-.126*	.094	-.062	1						
5. PAVG	.248*	.030	.240*	.433*	1					
6. SDG	.229*	.437*	.206*	.110	.066	1				
7. SDAPG	.134*	.107	.012	.172*	.270*	.200*	1			
8. SDAVG	-.042	.161*	-.022	.457*	.293*	-.020	.850	1		
9. DA	.286*	.160*	.550*	-.091	.161*	.117*	-.015	-.074	1	
10. SA	-.065	.118*	-.371*	.267*	.180*	.000	.211*	.325*	-.223*	1
<u>M</u>	3.387	3.765	3.718	3.270	3.109	4.020	3.182	3.211	3.244	3.078
<u>SD</u>	.449	.405	.564	.614	.709	.530	.942	.689	.518	.474

*Correlation is significant at .05 level (2-tailed)

Note: IDSC= Independent Self-Construal, ITSC= Interdependent Self-Construal, MG= Mastery Goal, PAPG= Performance-approach Goal, PAVG= Performance-avoidance Goal, SDG= Social Development Goal, SDAPG= Social Demonstration-approach Goal, SDAVG= Social Demonstration-avoidance Goal, DA= Deep Approach, SA= Surface Approach.

Table 2 indicates reliability Cronbach's Alpha of self -construals (independent self construal: .632; interdependent self construal: .711), achievement goals (mastery goal: .759; performance-approach goal: .673; performance-avoidance goal: .821), social achievement goals (social development goal: .807; social demonstration-approach goal: .710; social demonstration-avoidance goal: .809), and study strategies (deep approach: .790; surface approach: .694). All the reliabilities are placed within satisfactory and acceptable level, ranging from .632 to .821.

Table 2. *Reliability Cronbach's Alphas for Self-Construals, Achievement Goals, Social Achievement Goals and Study Strategies Scales*

Scales	Cronbach's Alpha
Self-construals	
Independent self construal	.632
Interdependent self construal	.711
Achievement goals	
Mastery goal	.759
Performance-approach goal	.673
Performance-avoidance goal	.821
Social achievement goal	
Social development goal	.807
Social demonstration-approach goal	.710
Social demonstration-avoidance goal	.809
Study strategies	
Deep approach	.790
Surface approach	.694

Path Analyses

A path model between self-construals, achievement goals, social achievement goals, and study strategies has been examined and the path diagram is indicated in Figure 1. Result shows that independent self construal had a positive significant effect on mastery goal ($\beta = .274, p < .05$) and performance-avoidance goal ($\beta = .239, p < .05$). However, it also shows negative effect on performance-approach goal ($\beta = -.163, p < .05$). Whereas, interdependent self construal has a positive significant effect on mastery goal ($\beta = .117, p < .05$) and performance-approach goal ($\beta = .118, p < .05$).

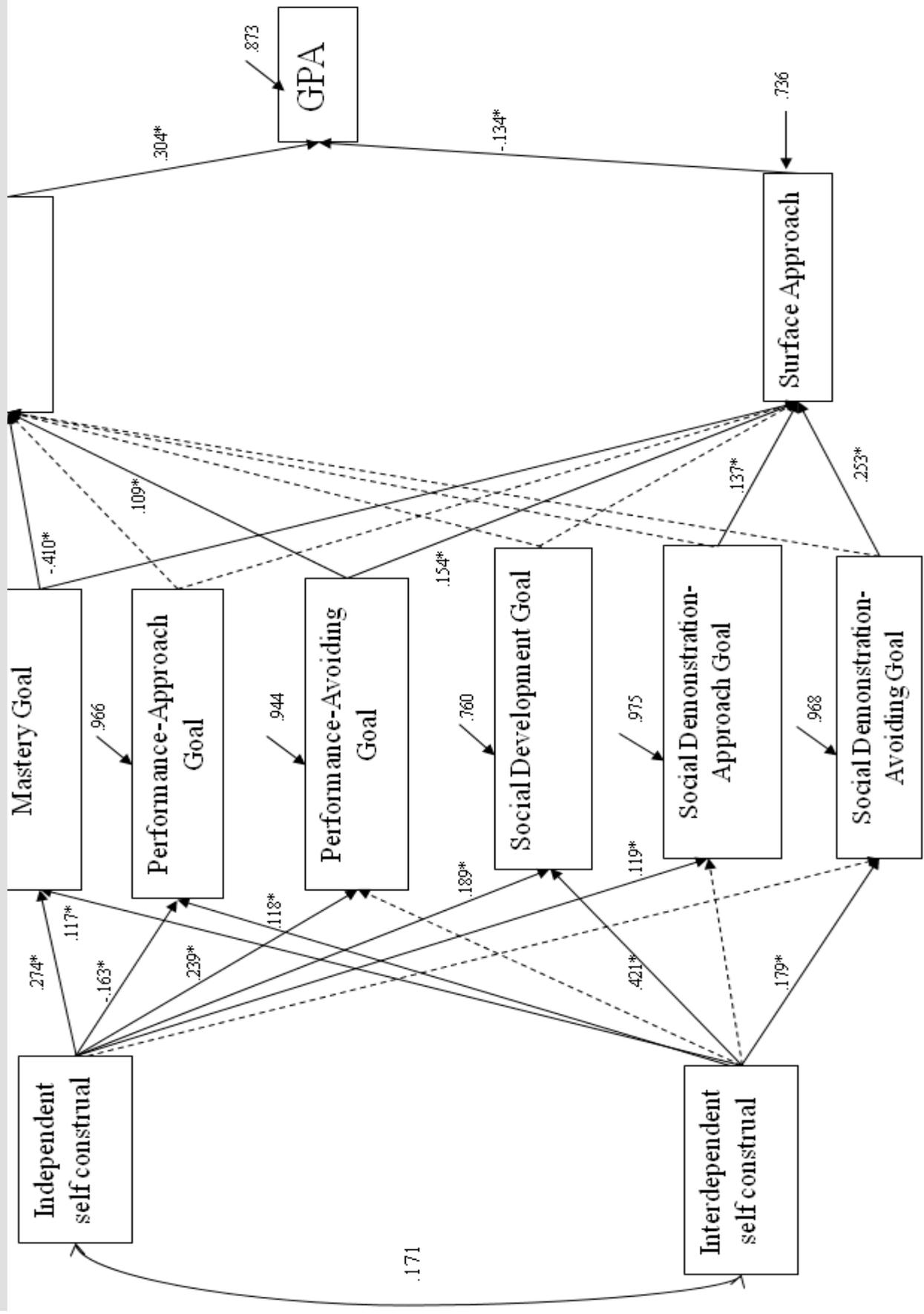
On the other hand, result shows independent self construal is a significant predictor of social development goal ($\beta = .189, p < .05$) and social demonstration-approach goal ($\beta = .119, p < .05$). Interdependent self construal has found to be a significant predictor of social development goal ($\beta = .421, p < .05$) and social demonstration-avoidance goal ($\beta = .179, p < .05$), but no significant effect on both social demonstration-approach goal.

Furthermore, mastery goal takes a positive effect on deep approach ($\beta = .501, p < .05$) but negative effect on surface approach ($\beta = -.410, p < .05$). Performance-avoidance goal has significant positive effect on both deep approach ($\beta = .109, p < .05$) and surface approach ($\beta = .154, p < .05$).

However, there are no significant effect from performance-approach goal towards deep approach and surface approach.

Social development goal has no significant effect on both deep approach and surface approach. Whereas, social demonstration-approach goal has positive effect upon surface approach ($\beta = .137, p < .05$) but no significant effect on deep approach. Social demonstration-avoidance goal is positively and significantly indicating surface approach ($\beta = .253, p < .05$) but no significant effect on deep approach.

Lastly, both deep approach and surface approach have significant effect on students' academic achievement (GPA) that deep approach takes positive effect on GPA ($\beta = .304, p < .05$) while surface approach takes negative effect ($\beta = -.134, p < .05$).



Notes: Coefficients with * refers to significant level ($p < .05$), and those are not significant is presented with dotted lines.

To conclude the results, independent self-construals has found to have significant effects on mastery goal, performance-approach, performance-avoidance goal, social development goal, and social demonstration-approach goal. Meanwhile, interdependent self construal has positive and significant effect on mastery goal, performance-approach goal, social development goal, and social demonstration-avoidance goal. Deep approach is positively and significantly predicted by mastery goal, performance-avoidance goal, whereas, surface approach is significantly predicted by mastery goal, performance-avoidance goal, social demonstration-approach goal, and social demonstration-avoidance goal. Both study strategies have significant effects on academic achievement.

Discussion and Suggestion

Previous research has shown that students' self-concept is determining their academic achievement (Waugh, 2004). However, the actual mechanism between self and study behaviours had seldom been explored. We speculate those study behaviours are associated with individuals' goals according to hypothesized model of motivation (Schunk, Pintrich, Meece, 2007). A path model between self-construals, achievement goals, social achievement goals, and study strategies has been constructed that self construal exerts significant effects on different goals (achievement goals and social achievement goals), and the goals take significant effects upon study strategies by showing statistically significant path coefficient. Generally, self-construals are significant predicting variables of students' study strategies with the goals; in other words, the goals could be mediators between self-construals and study strategies. For instances, independent self construal is significantly predicting mastery goals, performance-avoidance goal, which these goals are significantly predicting and study strategies (deep approach as well as surface approach). Additionally, independent self construal is predicting social demonstration-approach goal which is directing to surface approach. Moreover, interdependent self construal is significantly predicting mastery goal so that predicting both study strategies as well. Interdependent self construal predicts social demonstration-avoidance goal and therefore surface approach (Figure 1). It was hypothesized the path model that self-construals plays as executive in predicting study strategies with mediators of achievement goals and social achievement goals. According to these results, hypothesis of this research should be accepted.

Results found the relationships between self-view and goals that are similar to suggestions from literatures. Experts suggested self-view is determining individuals' behaviours by selecting goals (Cogvinton, 2000; Hay & et al., 1997; Matsumoto, 2000). According to results of this study, self-construals are always predicting variables of achievement goals and social achievement goals, for examples, independent self construal is a significant predictor of goals, including mastery goal, performance-approach goal, performance-avoidance goal, social development goal, and social demonstration-approach goal, while interdependent self construal is a significant predictor of mastery goal, performance-approach goal, social development goal, and social demonstration-

avoidance goal. Cultures are believed to sharpened individuals' self-view (Matsumoto, 2000) that self-view controls goals. Within Chinese context, collectivism is comprehensively adopted that people are generally relationship-orientated (Sun, 2008)—meaning that they are other-focused (Sun, 2008)—who always focusing on their relationship with others. Self-construals under Chinese culture is a predicting variable of goals as well in this study, it implies the feasibility the theories of goals selecting in Chinese culture.

Apart from relationships between self-construals and the goals, relationship between achievement goals and study strategies in Chinese culture has been found coinciding with literatures. Results show master goal is predicting both types of study strategies (positively in predicting deep approach and negative in predicting surface approach) which is corresponding to results of research from western countries (Elliot & Dweck, 1988; Pintrich & Garcia, 1991; Pintrich & Schrauben, 1992; Anderman, Grisinger, & Westerfield, 1998). It shows the applicability of those findings on local population. However, on the other hand, performance-avoidance goal is found to have significant positive effects on both study strategies. It had been suggested that students with strong tendency of performance-avoidance goal tend not adopt deep approach but surface approach merely in previous studies (Anderman, Grisinger, & Westerfield, 1998; Elliot, McGerger, & Gable, 1999). Local students with strong tendency of performance-avoidance goal are avoiding performing badly in class because they would like to keep themselves away from showing social incompetence and receiving undesirable judgement or social rejection. In this sense, they are focusing on relationship between the ego and others, which is coinciding with Sun's suggestion (2008) that Chinese people tend to be other-focused. Therefore, they study in any possible approach in order to achieve this goal, including deep approach and surface approach. Consequently, results in this study show the significant and positive effect from performance-avoidance goal to surface approach in Chinese context.

Social development goal has found to be significantly predicted by self-construals which are implying cultural characteristics in Chinese. Base on other-focused culture, people are attempting to focus on keeping harmony with others. Regardless students with strong sense on independent self construal or interdependent self construal, they tend to adopt social development goal. Therefore, the both self-construals are positively directing to social development goal. It shows the relationship between self-construals and social achievement goals as hypothesized in this study.

However, social achievement goals are not strong predictors of study strategies. Results show none of the social achievement goals have significant effect on deep approach; no significant effect has shown between social development goal and surface approach. Only social demonstration-approach goal and social demonstration-avoidance goal have found significant positive effect on surface approach. It is, generally, believed that social achievement goals may not be good predictors to study strategies. Social development goal represents students' preferences

on social life but not studies; in terms of Chinese culture, students with stronger sense in social development goal would like to concentrate on developing harmony in social relationships, study does not a matter to them, and therefore, there are no significant preferences on study strategies. Moreover, social-demonstration-students (students with strong tendencies on social demonstration-approach goal and social demonstration-avoidance goal) are more inclined to compare themselves with others, consequently less resources, like time and cognitive resources, are put into study; they tend to study in surface ways which are relatively saving recourses. In short, it is suggested that self-construals are not good predictors of study strategies.

To conclude, structural model of self-construals, achievement goals, social achievement goals, and study strategies has been built. The goals are suggested to be mediators of self-construals in predicting study strategies. In general, major findings from this research coincide with previous studies which show the possibility on applying theories of achievement goals on local population. However, social achievement goals are suggested not to be good predictor of study strategies.

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