The Inventory of School Motivation scale (ISM; McInerney, Yeung, & McInerney, 2000, 2001) is a new instrument designed to assess the academic goals of school students which allows students to espouse multiple goals including the socially-oriented, which research indicates are particularly salient to respondents from non-Western cultures. A Hong Kong Chinese version of the ISM was developed and evaluated in two studies involving 163 and 697 Hong Kong Chinese secondary school children. Responses to this questionnaire are shown to have good internal consistency reliability and support is provided for its construct validity in terms of its factorial structure and correlations as predicted with measures of learning strategies and self-esteem. Suggestions for further research using the ISM are provided.

Key words: motivation, learning strategies, Chinese culture, Hong Kong

Educators, teachers, and parents in both Western and non-Western countries have long considered that motivation is a key to successful academic performance. However, while motivational theories have been a major focus of the psychological literature for over sixty years it is now well recognised that much established Western theorising in this area may not be appropriate for non-Western cultures, including the Chinese (Ho, 1986; Salili, 1996; Yang & Yu, 1988; Yu, 1996).

One Western origin model of motivated action that was designed to be applicable in cross-cultural settings is Maehr’s personal investment model (Maehr, 1984). This model is an extension of the theory of academic motivation which has dominated the US literature since the 1980’s: achievement goal theory (e.g. Ames, 1992; Dweck, 1986). According to this latter theory such goals are cognitive representations of the different

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purposes students have which may in turn differ according to the academic context. These goals are thought to be of importance as they are likely to influence students’ behaviour, thoughts, and feelings as they become involved in academic tasks. Two main goals have been identified by these theorists: mastery and performance goals. The belief that effort leads to success is central to a mastery (or learning or task) goal and the intrinsic value of learning is salient. Individuals who adopt a mastery goal are likely to want to develop new skills, try to understand their work, improve their level of competence, and achieve a sense of mastery over a task. On the other hand, a performance (or ego or extrinsic) goal refers to a focus on one’s sense of self-worth. One demonstrates one’s ability by outperforming others, by surpassing norms, or by achieving success with little effort. While performance goals are other-referenced mastery goals are self-referenced. Importantly for the quality of learning outcomes, mastery goals tend to be associated with deep level learning strategies while performance goals with surface level learning strategies (Covington, 2000). These findings are consistent with the motive/strategy model of approaches to learning (Biggs, 1987) in which external, intrinsic, and achievement motivation influence a student to adopt surface, deep, and achievement-oriented learning strategies, respectively. This model has been validated in a number of Western and non-Western countries such as Hong Kong (Watkins & Biggs, 1996).

However, goal theory as represented above has major problems. Firstly it assumes a bipolar mastery versus performance goal continuum whereas research suggests these goals are not incompatible and that students may hold both these goals simultaneously (Maehr, 1984; Urdan & Maehr, 1995). Secondly, both these goals have a strong individualist flavour as both give priority to the goals of the individual. There is little attention paid to more group oriented goals such as affiliation with other students or wanting to succeed for the sake of the family which are likely to be salient in more collectivist cultures such as Hong Kong (Ho, 1986).

Maehr’s personal investment model is designed as an extension of goal theory to specially address the limitations described above. In its broadest interpretation, this model conceptualises motivated behavior as being determined by three global variables: perceived goals of behaviour, beliefs about self, and action possibilities.

Perceived goals of behavior in a situation refer to the motivational foci of activity (i.e., what a person defines as success and failure in a particular situation). Maehr proposed four broad goal systems that are presumed to be universal: task, ego, social solidarity, and extrinsic rewards. In this model it is hypothesised that each of these goal structures contributes to the motivational orientation of the individual, the salience of any structure being situation specific.

The second component of the model is defined by Maehr as sense-of-self, which refers to the more or less organised collections of perceptions, beliefs, and feelings related to who one is. Sense-of-self is presumed to be composed of a number of components such as sense of competence, sense of autonomy, and sense of purpose, each also contributing to the motivational orientation of the individual and interacting with the motivational goals outlined above. The third component, action possibilities, refers to the behavioural alternatives that a person perceives to be available and appropriate in a given situation.
These are seen in terms of sociocultural norms and external factors such as geographic location and socioeconomic status that exist for the individual.

Based on Maehr’s approach, McInerney and his colleagues (McInerney, Yeung, & McInerney, 2000, 2001) proposed a hierarchical, multidimensional model of goal orientations designed to reflect a wider range of goals relevant for both Western and non-Western students (see Fig. 1). At the base of this model are nine specific goals (task, effort, praise, feedback, competition, social status, extrinsic, social concern, and affiliation) which can be grouped into three more general goals (mastery, performance, and social), and at the apex of the hierarchy is general motivation.

An instrument, the Inventory of School Motivation (ISM), was then developed to assess constructs salient to this model (McInerney, Roche, McInerney, & Marsh, 1997). McInerney’s research has involved not only psychometric research demonstrating the reliability and factor structure of responses to the ISM by students from a number of minority groups as well as Western students but also qualitative research which has supported the relevance of the underlying constructs of the ISM. The ISM has then been used in a series of studies which have looked at motivational factors in academic achievement and school retention in different cultures (McInerney et al., 1997).

Such work has done much to increase our understanding of why children from indigenous minority groups such as Australian aboriginals, and the Navajo and Montagnais Betsiamite Indians have had difficulty coping with Western schools. It has also supported Maehr’s theoretical position for non-Western populations. But is such a theory limited in applicability to minority group children trying to succeed at Western schools? We hope now to extend such research to other cross-cultural settings such as Hong Kong, India, and Africa. Before that is possible we need to have to hand a measuring instrument appropriate for such cultures. It would, of course, simplify matters considerably if the ISM could be shown to be applicable in such cultures. But, of course, as we know from the writing of cross-cultural methodologists such applicability cannot be assumed. Central to this issue is the notion of equivalence (Hui & Triandis, 1985). As at
this stage we are not concerned with comparing ISM raw scores across cultures the most
difficult case of metric equivalence is not an issue and our focus will be on Hong Kong
Chinese respondents only.

**Conceptual Equivalence**

The basic level of equivalence without the demonstration of which little can be
achieved in cross-cultural research is that of conceptual equivalence. The basic issue here
is whether the constructs of Maehr’s personal investment theory as operationalised in the
ISM are appropriate for Hong Kong Chinese secondary school children. Fortunately there
have been a number of studies of motivation in Hong Kong from both emic and etic
perspectives. In reviewing such research, Watkins and Biggs (1996) pointed to the
supposedly bipolar dimension of intrinsic versus extrinsic motivation which seems to
collapse in Chinese culture and the neglect of more group-oriented notions of motivation
which would be salient for a relatively collectivist culture such as in Hong Kong (Bond,
1996).

There can be no doubt, though, that the concepts of performance and mastery goals
are relevant to Hong Kong and other Chinese societies. Hong Kong schools have long
been recognised as examination dominated with the pressure for children to succeed
academically and beating others starting even at preschool levels (see Watkins & Biggs,
2001, for an overview of such research). Indeed such an emphasis on public examinations
can be traced back thousands of years in Chinese culture (Lee, 1996). Then as now
examination success was seen as the best way to ensure that an individual can attain a
worthwhile job and through that wealth and social status. Based on Confucian beliefs,
Chinese culture emphasises the need for hard work, endurance, and above all effort to
achieve such success (Yang, 1986). However, Chinese values have also long emphasised
the intrinsic value of learning and Confucius espoused what to day we would call mastery
goals which he did not see as incompatible with extrinsic goals (Lee, 1996). Chinese
societies, however, see academic success as more of a source of family rather than
individual pride. Chinese parents teach their children to work hard and value education
and are very demanding of academic success. Chinese children are thence very likely to
accept personal responsibility for their academic performances, more so than Western
children (Salili, 1996). Despite this pressure for personal academic success for the sake of
the family, Chinese students are also collectivist in that they value the success of their
school group and they typically both perform better and expend more effort when working
in a group than individually (Salili, 1996). However, as 20 Hong Kong teachers
interviewed in a pilot study for this research explained, competition is an important feature
of the Hong Kong classroom that students recognise and teachers encourage. But the
teachers interviewed typically argued that competition was not so much ego-related but
more to do with a sense of purpose. Students compete because they realise the better their
marks the better their chances of being accepted by a good school, entering a prestigious
university, and obtaining a worthwhile job.

To sum up, it seems that many aspects of Maehr’s theory as reflected in the design of
the ISM and the model on which it is based are appropriate for Hong Kong students. The
allowance for respondents to support multiple goals, even seemingly incompatible ones, and inclusion of scales on affiliation and social concern and sense of purpose seem particularly relevant. However, a more ‘family oriented’ motivation scale would seem desirable and it can be questioned whether self-esteem and token reinforcement scales are appropriate. Moreover, as Hong Kong and Chinese respondents in general seem to be more willing to espouse what to Westerners are mutually exclusive views it may be that there is more interrelationship between ISM scales than is typically found in Western research. In this paper we report two quantitative studies focusing on the reliability and validity of the ISM for Hong Kong Chinese respondents. We also wanted to explore the possibility that a wider range of motivational factors may influence the way students go about their learning than the restricted number of goals and motives considered in the theorising of Covington (2000) and Biggs (1987).

**STUDY 1**

The purpose of Study 1 was to develop a Chinese version of the ISM, referred to here as the ISM(C), and then test the reliability of responses to this instrument by Hong Kong secondary school children. We also tested the hypotheses that mastery-oriented unlike performance goals are more closely associated with deeper learning strategies.

**Method**

**Instruments:** The main instrument was a Chinese translation of the Inventory of School Motivation Revised (ISMР), (McInerney et al., 2000, 2001). The ISMR consists of questions relating to the following motivational goals and sense of self values influencing learning:

- **Task-Effort.** Interest in the task and willingness to expend effort to improve schoolwork. Examples of items representing this dimension are “I like to see that I am improving in my schoolwork” and “I always try hard to understand something new in my school work”.
- **Competition.** Competitiveness in learning. Examples of this dimension are “I like to compete with others at school” and “I am only happy when I am one of the best in the class”.
- **Social Status.** Seeking social status through group leadership. Examples of this dimension are “I like being in charge of a group” and “I work hard at school to have the class notice me”.
- **Praise.** Social recognition for schoolwork. Examples of this dimension are “I work best when I am praised at school” and “I like to be encouraged for my schoolwork”.
- **Extrinsic.** Tangible rewards for schoolwork. Examples of this dimension are “I work best in class when I get rewards” and “Getting good marks is everything for me”.
- **Affiliation.** Belonging to a group when doing schoolwork. Examples of the dimension are “I can do my best work at school when I work with others” and “I like to work with other students at school rather than work alone”.
- **Social Concern.** Concern for other students and a willingness to help them with their school work. Examples of this dimension are “It is important for students to help each other at school” and “I like helping other students with their school work”.
- **Self reliance.** Self-regulation within academic settings. Examples of items representing this dimension are “I do not need anyone to tell me to work hard” and “Difficult school work does not bother me if I am working alone”.
- **Self-esteem.** Confidence about general academic ability at school. Examples of items representing this dimension are “I am bright enough to finish high school” and “I can succeed at whatever I do at school”.
- **Sense of purpose.** Valuing school for the future. Examples of items representing this dimension are “It is good for me to plan ahead to complete high school” and “I want to do well at school to have a good
future”.
For this research twelve other items were included from the Surface and Deep Strategy scales of the Chinese version of the Learning Process Questionnaire (LPQ), responses to which have been shown to be reasonably reliable and valid for use with Hong Kong children (Biggs, 1992). The response scale for all items was a five-point scale from ‘1=strongly disagree’ to ‘5=strongly agree’.

Procedure: The first task was to develop a Chinese translation of the ISM. For this purpose, items of the ISM were divided into three parts and then six members of a M.Ed. class in Cross-Cultural Psychology, all experienced Hong Kong Chinese Teachers, worked in pairs to translate the items into Chinese. They then swapped items with another pair and back-translated the new items into English. At this point the first author and a seventh member of the class compared the original and back-translated English versions. Finally a plenary session was held where items with serious discrepancies between the meaning of items were discussed by all class members until a final version was agreed upon. The pilot Chinese version of the ISM, referred to here as the pilot ISM(C), plus the 12 LPQ items were then administered by M.Ed. class members to four classes at Hong Kong secondary schools. As it was hoped that this version of the ISM would be suitable for a range of age and ability groups, these schools and the classes sampled were chosen to represent typical Form 1 and 4 classes at high and low ability band co-educational secondary schools.

Participants: There were 163 participants of whom 44 were in Form 1 and 44 were in Form 4 from two Band 1–2 (high ability) schools and 37 and 41 were Form 1 and 4 pupils from two Band 4–5 (low ability) schools. There were virtually equal numbers of males and females in the sample and their average age was 13.45 years.

Results
The internal consistency reliability coefficients, alphas, for responses to the Chinese version of the ISM are shown in Table 1. It can be seen that the alphas ranged from 0.39 to 0.87 with a median of 0.79. The corresponding alphas for the LPQ were 0.56 and 0.66

Table 1. Internal Consistency Coefficients, and Correlations with Surface and Deep Learning Strategies of Scales of Pilot ISM(C) (n=163)

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Alphas</th>
<th>Surface Strategy</th>
<th>Deep Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Motivational Scales</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task Effort</td>
<td>.81</td>
<td>-.25*</td>
<td>.50*</td>
</tr>
<tr>
<td>Praise</td>
<td>.87</td>
<td>.16</td>
<td>.14</td>
</tr>
<tr>
<td>Extrinsic</td>
<td>.83</td>
<td>.09</td>
<td>.20</td>
</tr>
<tr>
<td>Competition</td>
<td>.79</td>
<td>-.03</td>
<td>.09</td>
</tr>
<tr>
<td>Social Status</td>
<td>.82</td>
<td>.06</td>
<td>.27*</td>
</tr>
<tr>
<td>Affiliation</td>
<td>.81</td>
<td>.00</td>
<td>.26*</td>
</tr>
<tr>
<td>Social Concern</td>
<td>.69</td>
<td>-.16</td>
<td>.37*</td>
</tr>
<tr>
<td>Global Motivation</td>
<td>.66</td>
<td>-.21*</td>
<td>.33*</td>
</tr>
<tr>
<td>Self-reliance</td>
<td>.39</td>
<td>-.21*</td>
<td>.30*</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>.64</td>
<td>-.31*</td>
<td>.16</td>
</tr>
<tr>
<td>Sense of Purpose</td>
<td>.41</td>
<td>-.12</td>
<td>.34*</td>
</tr>
</tbody>
</table>

Note: *p<.01
for the Surface and Deep Strategy scales, respectively. For the pilot ISM(C) two of the scale alphas, Sense of Purpose and Self-Reliance, were particularly weak while three other alphas were in the ‘moderate’ range of 0.64 to 0.69.

The correlations between the pilot ISM(C) and the two LPQ scales were much as predicted. In particular Task Effort correlated highly positively with Deep Strategy \( (r=0.50) \) but significantly negatively with Surface Strategy \( (r=-0.25) \). While the four scales linked in the model shown in Fig. 1 to the higher order Performance Strategy scale showed little relationship to Surface Strategy as Western research would predict, the correlations between three of these scales to Deep Strategy were also minimal, the only statistically significant correlation being with Social Status \( (r=0.27) \).

The correlations of the two social motivation scales with Deep Strategy were both statistically significant at the .01 level: Social Status \( (r=0.27) \) and Affiliation \( (r=0.26) \). As found in previous research with Western and non-Western respondents the global motivation and sense of self scales tended to correlate significantly negatively and positively with the LPQ Surface Strategy and Deep Strategy scales.

**Discussion**

To sum up, this research with the pilot Chinese version of the ISM produced encouraging findings. The internal consistency reliability coefficients of all but two of the pilot ISM(C) scales were adequate to good. Moreover, support for the construct validity of responses to this inventory came from the finding that the scales correlated much as predicted with the Surface and Deep Strategy scales of the LPQ. There was also some evidence that two of the social motivation scales were association with deep learning strategies. The findings of Study 1 were then used in Study 2 to revise the ISM(C) and further test its reliability and validity for a similar of Hong Kong students.

**STUDY 2**

Based on item analysis in Study 1, the items of the pilot ISM(C) were reconsidered by the M.Ed. class, the third author (an experienced Hong Kong Secondary school teacher), and a consultant who was both involved in the development of the ISM and an experienced professional Chinese/English translator. From this joint endeavour the ISM(C) items were revised, changes being made mainly to the three ‘sense of self’ scales. Items tapping the second order Social General, Mastery General, and Performance General scales were also included.

The revised inventory referred to here as the ISM(C), was then administered to a new larger sample of Hong Kong secondary school children.

The aims of this study were

1. to assess the internal consistency of responses to the ISM(C) scales;
2. to assess the factorial validity of such responses in terms of fitting the model shown in Fig. 1; and
3. to test the construct validity of the ISM(C) by finding out if it correlated as predicted
with independent measures of intellectual self-esteem and surface, deep, and achieving learning strategies. In particular we tested the hypotheses that intellectual self-esteem would correlate highly with the ISM Self Reliance and Self-esteem scales; that the Mastery General and Task Effort ISM scales would correlate significantly positively with the LPQ Deep and Achieving Strategy scales but negatively, if anything with the Surface Strategy scale; and that Extrinsic motivation scale, (and perhaps Performance General) would be the only ISM scales to correlate significantly positively with the Surface Strategy scale. The pattern of correlations of the ISM scales found with the LPQ strategy scales was also of interest for exploring the motivation / strategy relationship.

Method

Instruments: The instruments administered were the revised ISM(C), 18 items of the LPQ tapping surface, deep, and achieving learning strategies, and 10 items measuring the intellectual self from the Chinese Adolescent Self-Esteem Scale (CASES: Cheng, 1996). The latter was developed to be culturally relevant for Hong Kong Chinese adolescents and confirmatory factor analysis of responses to its scales have been shown to support the proposed underlying model of the self (Cheng & Watkins, 2000).

Participants: The respondents to these instruments were 697 Hong Kong secondary children. Of these

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Table 2. Internal Consistency Coefficients, Means, Standard Deviations (SDs), of Responses to the Revised ISM(C) Scales (Number of Items in Brackets) and Correlations with Learning Strategies and Intellectual Self-concept (n=697)

<table>
<thead>
<tr>
<th>ISM(C) Scales</th>
<th>Alphas</th>
<th>Means</th>
<th>SDs</th>
<th>Surface</th>
<th>Deep</th>
<th>Achieving</th>
<th>Intellectual Self</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Effort (11)</td>
<td>.74</td>
<td>24.81</td>
<td>3.65</td>
<td>-.19*</td>
<td>.55*</td>
<td>.53*</td>
<td>.35*</td>
</tr>
<tr>
<td>Praise (9)</td>
<td>.84</td>
<td>29.47</td>
<td>5.54</td>
<td>.04</td>
<td>.26*</td>
<td>.19*</td>
<td>.11*</td>
</tr>
<tr>
<td>Extrinsic (9)</td>
<td>.75</td>
<td>20.38</td>
<td>4.03</td>
<td>.17*</td>
<td>.24*</td>
<td>.22*</td>
<td>.04</td>
</tr>
<tr>
<td>Competition (8)</td>
<td>.80</td>
<td>26.07</td>
<td>5.31</td>
<td>.00</td>
<td>.32*</td>
<td>.22*</td>
<td>.15*</td>
</tr>
<tr>
<td>Social Status (7)</td>
<td>.80</td>
<td>19.97</td>
<td>4.36</td>
<td>.08</td>
<td>.32*</td>
<td>.28*</td>
<td>.14*</td>
</tr>
<tr>
<td>Affiliation (5)</td>
<td>.74</td>
<td>26.89</td>
<td>4.08</td>
<td>.03</td>
<td>.15*</td>
<td>.14*</td>
<td>.04</td>
</tr>
<tr>
<td>Social Concern (5)</td>
<td>.68</td>
<td>18.01</td>
<td>2.62</td>
<td>-.12*</td>
<td>.30*</td>
<td>.33*</td>
<td>.17*</td>
</tr>
<tr>
<td>Mastery General (5)</td>
<td>.74</td>
<td>18.35</td>
<td>2.86</td>
<td>-.15*</td>
<td>.42*</td>
<td>.38*</td>
<td>.23*</td>
</tr>
<tr>
<td>Performance General (8)</td>
<td>.84</td>
<td>26.11</td>
<td>5.01</td>
<td>-.04</td>
<td>.38*</td>
<td>.35*</td>
<td>.23*</td>
</tr>
<tr>
<td>Social General (5)</td>
<td>.74</td>
<td>16.19</td>
<td>2.90</td>
<td>.02</td>
<td>.38*</td>
<td>.37*</td>
<td>.18*</td>
</tr>
<tr>
<td>Global Motivation (8)</td>
<td>.77</td>
<td>26.50</td>
<td>4.03</td>
<td>-.20*</td>
<td>.46*</td>
<td>.53*</td>
<td>.43*</td>
</tr>
<tr>
<td>Self-reliance (12)</td>
<td>.49</td>
<td>37.06</td>
<td>4.17</td>
<td>-.27*</td>
<td>.38*</td>
<td>.37*</td>
<td>.55*</td>
</tr>
<tr>
<td>Self-esteem (12)</td>
<td>.75</td>
<td>37.36</td>
<td>5.83</td>
<td>-.23*</td>
<td>.21*</td>
<td>.29*</td>
<td>.63*</td>
</tr>
<tr>
<td>Sense of Purpose (6)</td>
<td>.74</td>
<td>22.15</td>
<td>3.61</td>
<td>-.02</td>
<td>.42*</td>
<td>.40*</td>
<td>.21*</td>
</tr>
</tbody>
</table>

Note: *p<.01
356 were males and 341 females; 354 and 343 were in Forms 1 and 3, respectively; and 241, 230, and 226 were from high, medium, and low ability group schools.

Results
The means, standard deviations, internal consistency coefficient alphas, and correlations with the LPQ scales and intellectual self for responses to the ISM(C) scales are shown in Table 2. It can be seen that the alphas except for Self-Reliance, and a lesser extent Social Concern, were all very adequate exceeding .70 in magnitude. The alphas for responses to the LPQ Surface Strategy, Deep Strategy, and Achieving Strategy scales were .54, .66, and .75, respectively, while that for the CASES Intellectual Self scale was .83.

From Table 2 it can be seen that as expected it was the Task Effort scale which correlated most highly with the Deep and Achieving Strategy scales. On this occasion though the other lower (Praise, Extrinsic, Competition, and Social Status) and higher order Performance scales, and the lower (Social Concern and Affiliation) and higher order Social Scales also correlated significantly positively, if not as highly with the Deep and Achieving Strategy scales.

None of the specific motivation scales correlated above .20 with the Surface Strategy scales but as predicted Extrinsic motivation was the only scale to correlate significantly negatively with the LPQ Surface Strategy scale. The three ‘sense of self’ scales (Self-reliance, Self-esteem, and Sense of Purpose) all correlated as predicted quite highly positively (of the order of .40) with the Deep and Achieving Strategy and Intellectual Self scales.

Table 3 presents the factor pattern matrix of the three factor solution based on the
Principal Axis method followed by rotation to oblique simple structure using the Promax procedure. These three factors accounted for 64.2% of the variance and a three factor solution was supported by the scree test and theoretical considerations.

Inspection of the loadings in Table 3 supported the hypothesised factor model. The loadings above .40 in magnitude were provided by the Performance General and the four first order scales as shown in Fig. 1. Factor II was dominated by Mastery General and the lower order Task Effort scales as also per Fig. 1. Interestingly the higher order Global Motivation scale also loadest highest on this factor, suggesting that in the context of Hong Kong schools Mastery and Global motivation are strongly associated. Factor III had high loadings not only from the Social General scale but also as predicted from the lower order Affiliation and Social Concern scales.

**DISCUSSION**

From the results of Study 2 it seems that the final version of the ISM(C) was an improvement on the version used in Study 1 and was adequate for use with Hong Kong secondary school children in terms of the internal consistency of responses to its scales, its factor structure, and construct validity in terms of correlations as predicted with LPQ learning strategies scales and CASES intellectual self scale. Once again the socially-oriented motivation scales showed moderate correlations with learning strategies.

**CONCLUSIONS**

The results of this research support the internal consistency reliability and construct validity of the Chinese version of the ISM developed in this research. They also support the relevance of the model of motivation on which it is based for a non-Western culture such as Hong Kong. Further research is needed to assess the role of social motivation in the academic outcomes attained in both Western and non-Western cultures. It seems that the ISM(C) is a suitable instrument for such research in a Chinese culture. The only caveat from this research is that perhaps a more family-oriented social scale may be a worthwhile addition to the ISM(C) and perhaps the ISM itself.

In future research these authors intend to use the ISM(C) in a longitudinal study of the way the academic motivation of Hong Kong students change as they progress through secondary school. Using structural equation modeling we also plan to test the nature of the causal relationships between self-variable and motivation and the learning strategies and outcomes they achieve. At the moment there is little theoretical rationale for predicting the form of such relationships so our work will be somewhat exploratory but we hope it will lead to a better understanding of the interrelationships involved. We also intend to test the possible moderating effects of variables such as gender, age, and school ability band. Later we hope to use the ISM(C) to test the affect on student motivation of planned reforms to the Hong Kong school system.
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