

**Evaluation of History Interest Inventory - Development and Evaluation of a History Interest Inventory for Chinese K-12 Students**

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**Abstract:** The purpose of this study was to develop and evaluate a History Interest Inventory (HII) to measure Chinese K-12 students' history interest. In this study, data were drawn from two independent samples of a city in Eastern China, and exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted to reduce instrument size and evaluate the construct validity associated with this HII. Furthermore, multiple regression analysis was run to evaluate the weights of each component in predicting students' achievement. The indices of construct validity and reliability indicated that the History Interest Inventory (HII) was an effective and reliable instrument to measure Chinese students' history interest. To apply this instrument to students from other countries, it is suggested that a CFA be conducted with the samples from target countries to check its validity and reliability.

*Key words:* History Interest Inventory, exploratory factor analysis, confirmatory factor analysis, cultural differences

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**Introduction**

Former studies have indicated that interest is closely related to students' learning and achievement (e.g., Krapp, Hidi & Renninger, 1992; Stevens, 1980; Tella, Tella, & Adeniyi, 2009), but the lack of effective measurement tools poses a methodological problem for its research (Schiefele, Krapp, & Winteler, 1988; Weber & Patterson, 2000). History is widely learned in primary and secondary schools but there is no reliable instrument to measure students' interest levels in history as yet. The purpose of this study was to fill the gap by developing such a measurement scale, the History Interest Inventory (HII). The ability to measure students' history interest levels not only helps examine the reason for some students' low history achievement, but has a practical application—understanding what levels of history interest are brought to the classroom by students enable educators to better plan for interventions and learning activities.

Based on available resources, the participants came from China. Cultural differences may have significant impact on the formation and levels of students' interest (Li, 2003; Purdie & Hattie, 1996; Yamazaki, 2005) and therefore, the sample may only be generalized to Chinese students, and the instrument's application may only suit Chinese students' population. To apply the instrument to the students from other regions and countries, the Confirmatory Factor Analysis (CFA) with the samples from these regions or countries should be conducted in order to check its validity and reliability.

**Literature Review**

**Clarification of the Concept of Interest**

Researchers have not reached an agreement as to the exact definition of 'interest'. Hidi and Renninger (2006) define interest 'as a motivational variable refers to the psychological state of

engaging or the predisposition to re-engage with particular classes of objects, events, or ideas over time' (p. 112). Schunk, Pintrich and Meece (2008) defined interest as 'people's liking and wilful engagement in an activity' (p. 210). Regardless of differences in the definitions, researchers generally agree that it is a phenomenon emerging from an individual's interaction with his/her environments (Krapp et al., 1992).

Interest has often been associated with intrinsic motivation, serving as an explanatory factor in students' choices of topics, tasks, or activities. Motivation is defined as the process that instigates and sustains people's engagement in an action (Schunk et al., 2008). Researchers usually distinguish between intrinsic and extrinsic motivation, with the former referring to the momentum that gets learners involved in a subject due to the subject itself, such as fun or enjoyment, and the latter to an inspiration beyond the subject, such as for a reward or praise (Schunk et al., 2008). Comparatively, intrinsically motivated students are more likely to exhibit the characteristics of motivation.

There are a variety of categorizations of interest according to different theoretical frameworks. A common differentiation is between situational and individual interests (Schunk et al., 2008). Situational interest designates a temporary, situation-specific attraction, evoked by environments that are new, surprising, or vivid. Bergin (1999) summarized some situational factors in the classroom that are under the control of teachers: hands-on, novelty, food, social interaction, visible author, modeling, games and puzzles, content, biophilia, fantasy, humor, and narrative. Students' attention is easily evoked by these factors.

Personal interest represents a relatively stable disposition. For example, a student may be interested in an activity and get involved for a long time. Personal interest originates from students' former experiences or situational interest (Hidi & Renninger, 2006). It may also come from students' knowledge in one area. Interest and knowledge seem to perpetuate each other: increased knowledge in a domain promotes higher interest, which in turn fuels a quest to learn more about the domain (Hidi & McLaren, 1990). History interest belongs to the latter, reflecting students' enduring preference for the subject.

### **Interest and Learning**

The positive influence of interest on learning has been documented in many studies (e.g. Corbiere, Fraccaroli, Mbekou, & Perron, 2006; Krapp et al., 1992; Schiefele, 1991, 1992). Krapp et al. (1992) proposed a classification in terms of interest effects consisting of five fields: effects of personal interest on achievement (field 1) and cognitive structures (field 2), effects of situational interest on achievement (field 3) and cognitive structures (field 4), and effects of interest on students' learning strategies (field 5).

Learning outcomes can be categorized into the global indicator and cognitive structures (Krapp et al., 1992; Schiefele, 1998). The global indicator is represented by students' general grade or achievement (e.g., test scores or GPA) and cognitive structures distinguish between different levels of learning results (e.g., lower and higher level thinking), therefore, they are more precise measures than using students' global indicators. For example, Bloom Taxonomy (Bloom, Englehard, Furst, Hill, & Krathwohl, 1956; Krathwohl, 2002) offered a criterion to order lower level thinking (knowledge) and higher level thinking (abilities and skills), such as comprehension, application, and analysis. While *memorizing* is a typical way to learn knowledge, other learning strategies are needed to develop higher level thinking.

Most studies examining effects of personal interest on achievement (field 1) used the correlational method, with some designed to predict the learning outcome (e.g., Corbiere et al., 2006). A meta-analysis by Schiefele, Krapp and Winteler (1992) yielded a mean value of correlation coefficient .31. The researchers constructed two groups, grade 5-10 and grade 10-12, and found that the relationship was more salient at higher grade levels ( $r = .33$ ) than lower grade levels ( $r = .29$ ).

The effect of personal interest on cognitive structures was usually examined by analyzing students' learning through text readings (field 2). Assessment involved both quantitative standards, such as students' memorization of words, and qualitative examinations, such as type and quality of responses. Significant interest effects were detected even when confounding factors, such as previous knowledge and intelligence, were controlled. The effects were more prominent according to qualitative criterion than quantitative standards, and for students' deep level learning than surface-level learning (Fransson, 1977; Hidi, 1990; Hidi & Anderson, 1992; Schiefele, 1990, 1992, 1998; Schiefele & Krapp, 1996).

It is reasonable to assume that situational interest, triggered by instructional methods or materials, may play a role in students' learning (field 3), but few studies have examined the relationship so far (Krapp et al., 1992). At the same time, some examinations on the influence of situational interest on students' text comprehension revealed positive effects, qualitatively or quantitatively (field 4), while others failed to confirm the effect (e.g. Garner, Brown, & Sanders, 1992; Hidi, Baird, & Hildyard, 1982).

Although the positive influence of interest on students' learning outcomes has been documented in numerous studies, only a few studies have been conducted to examine the mediating process (Ainley, Hidi, & Berndorff, 2002; Schiefele, 1998). The existing literature was mainly about the relationships between interest and learning strategies (field 5). Entwistle and Ramsden (1983) found that interest-oriented learners are more likely to adopt the deep-processing study, building a qualitatively superior representation of a text and better recalling text content. The study by Nolen (1988) indicated that high interest learners tended to use more elaborations, pay attention to the storage of knowledge, and establish more cross-references. Schiefele, Wild and Krapp (as cited in Krapp, 1999) confirmed that students' interest affected their attitude towards the adoption of learning strategies.

In sum, the research revealed a relatively consistent positive relationship between individual interest and learning outcomes or strategies; while the studies on the effects of situational interest were inconsistent. Because most of them were correlational in nature, they did not support a casual relationship between interest and learning outcomes or strategies.

### **Defining the Dimensions of Individual Interest**

Personal interest is usually defined as multiple constructs, but researchers differ on the specific components it may comprise. Actually, the lack of the consistency on interest dimensions and its measurement has limited the interest research (Hidi & Renninger, 2006). In general, there are three schools in expounding the interest components: 1) one dimension, 2) two dimensions, and 3) three dimensions.

Some researchers (Alexander, Jetton, & Kulikowich, 1995; Deci, 1998) viewed interest as affection or intrinsic motivation. In the expectancy-value theory, Eccles and Wigfield (Eccles, 1983, 1984; Wigfield & Eccles, 1992) identified three task value constructs: interest, personal importance, and utility, in which interest is the only designated emotion. Schunk, et al. (2008) defined interest as

'people's liking and wilful engagement in an activity' (p.210), and juxtaposed interest with affect in their book *Motivation in Education*, conveying the idea that interest belonged to the category of emotion.

Schiefele (1991) and Krapp (1999) adopted two dimensions: feeling-related and value-related valences. The former referred to a person's association with a topic or an activity with positive feeling, especially enjoyment, while the latter designated an individual's attribution of personal significance. Renninger (1989, 1990, 1992) and Renninger and Wozniak (1985) conceptualized interest as two other dimensions: high stored knowledge and value perception. They assigned a state with low knowledge and high value perception as attraction rather than interest. However, other theorists disapproved the division between interest and attraction, claiming that interest could exist in a state of low knowledge (Alexander, Kulikowich, & Jetton, 1994; Tobias, 1994).

The third school (Hidi & Harackiewicz, 2000; Hidi & Renninger, 2006) integrated all three components: value, feeling, and knowledge: 'Positive feelings, stored knowledge, and stored value have been described as having complementary and coordinated roles in interest development' (Hidi & Renninger, 2006, p. 120). The three factors were usually viewed as relating to each other. Schiefele, Krapp and Schreyer (as cited in Baumert & Koller, 1998) believed it was impossible to separate feeling and value. Meanwhile, there were researchers who insisted on the distinction of the components. Wigfield and Eccles (1992) suggested that for analytical reasons, it was useful to keep these dimensions separate; Schiefele (1991) also believed that it was justified to distinguish between them considering people may vary based on the emphasis they put on their feeling experience, attributions of personal significance, or attraction derived from knowledge.

The authors chose to adopt the three-component theory, considering it better explained interest's resources. In terms of history interest, knowledge refers to students' history knowledge level in comparison with their peers; value to their evaluation of history's importance; and positive feelings to their enjoyment and entertainment in interacting with history-related activities. Among these components, knowledge and value belong to the cognitive valence, and positive feeling to the domain of emotion.

### **China's historical and cultural backgrounds**

China is a country with a long history. Officially claimed history can be traced back to about 5000 years ago, however, the written history is dated back to about 4000 years, with the early history characterized by many legendary stories. Importantly, its civilization never breaks during thousands of years of evolution, which is a unique characteristic of Chinese history. Its language, cultures, and customs are maintained after many historical vicissitudes. Modern Chinese people recognize the same ancestry, inherit the same teaching, and share the collective memory. Many dynasties in China have passed during this long period, leaving numerous historical heritages, including artifacts, buildings, legends, and stories.

China is also famous for its historiography, which is considered as an important duty for each dynasty. Besides official recording, nongovernmental individuals and organizations also contribute to its numerous historical books and documents. History is an important part of Chinese cultures, permeating in media, magazines, and books. Historical deposit is viewed as both advantage and disadvantages for the Chinese development in the new era.

History education is emphasized in schools as well, for both political and cultural purposes. From the primary school, Chinese students begin contact with history education, but there is no formal history



The first sample consisted of 110 students, with ages ranging from 13 to 15. Forty-eight (43.6%) described themselves as females, and 62 (56.4%) as males. The second stage survey was conducted about one year later, containing 208 participants. With one missing value, the ratio of female and male students was 1 to 1. Students' ethnicity was not considered a factor due to the homogeneity of Chinese population in the region.

### *Data Analysis*

Two phases of data analysis were conducted to reduce the instrument size and evaluate the construct validity associated with HII. In phase 1, Exploratory Factor Analysis (EFA) with SPSS 17 program was performed with the first sample to eliminate the smallest factor pattern coefficients and generate a less cumbersome instrument. In phase 2, Confirmatory Factorial Analysis (CFA) with AMOS 17 was conducted with the second sample to examine the model fit, construct validity, and reliability.

Furthermore, Multiple Regression was run to evaluate the weights of each factor in predicting students' achievement. The three factors make up the concept of 'interest', and all of them contribute to the formation and development of interest. The authors had no intention to drop any variable but rather to identify which factor was significant predictor and evaluate the weight of each factor.

### **Results**

#### *Phase 1 analysis*

The authors adopted Parallel Analysis (O'Connor, 2000) to statistically determine the number of factors and compared it to the three factors based on the theoretical decision. The Parallel Analysis involved extracting eigenvalues from random data sets that paralleled the actual data set with regard to the number of cases and variables. Factors were retained when the  $i$ th eigenvalue in the actual data was greater than the corresponding eigenvalue from the random data. Three factors were retained according to this criterion.

Maximum Likelihood analysis with Oblimin rotation was implemented to eliminate the smallest factor pattern coefficients while keeping the most salient items associated with the factors. Oblimin rotation was selected based on the assumption that there would be significant correlations between the factors. In general, the analysis result matched theoretically based three factors. On the basis of examining three sets of items, Factor 1 was named as knowledge, Factor 2 as value, and Factor 3 as positive feeling. Factor 1, 2, and 3 accounted for 38.50%, 10.50%, and 9.26% of the variance respectively.

Based on Stevens' criterion (1996), which took into elements of both factor loadings and sample sizes to retain items, it was decided to retain items with factor loading with .50 or over without cross. Seven items were retained in Factor 1, eight in Factor 2, and nine in Factor 3. Referring to Table 1 for Pattern Matrix for factor loadings, with loadings under .50 suppressed. To further reduce the instrument size, five items with highest factor loadings on each factor were retained. The instrument was reduced to 15 items, with 5 items on each factor.



Table 1. Rotated Factor Weights (Pattern Coefficients) and Eigenvalues

Items	Component		
27, I know history pretty well	.93		
26, I read more history books than my classmates	.93		
28, Comparing with my peers, I think my knowledge in history is above the average	.83		
30, I know more history allusions than my peers	.82		
29, I am satisfied with how much I know about history	.81		
25, I know more history comparing with peers	.80		
31, I know a lot of history, ancient and present, our country's and other countries'	.72		
32, I enjoy talking upon history topics			
20, History knowledge is important to other subjects			
16, Reading history makes people wise		.91	
14, Learning history is important		.81	
15, Learning history increases people's capability in judgment and analysis		.81	
21, Many Historical figures worth learning from		.67	
17, History knowledge is essential to for an informed citizen		.62	
24, History knowledge makes people be good at argument		.54	
13, History can relate to present problems		.51	
22, Historical experiences and lessons deserve our references		.50	
18, Knowing some history is useful in daily life			
19, To better understand today, we should know yesterday			
23, history is helpful to other subjects			
7, I feel very excited when a new history topic is initiated			.83
1, I am interested in history			.82
5, I like touring history museums			.76
2, I enjoy reading history stories			.74
10, I like doing assignments relating to history			.67
12, I like discussing history questions with friends			.63
4, History class is interesting			.62
8, I like visiting historical sites			.60
11, I like telling history stories to others			.55
3, I like to answer question in history class			
9, I like watching historical movies and videos			
6, I like listening to history stories			
Eigenvalues	12.32	3.36	2.96

Extraction Method: Maximum likelihood

Rotation Method: Oblimin with Kaiser Normalization

*Phase 2 Analysis*

In phase 2, CFA was conducted to test the model fit. The indices checked were the Chi Square ( $\chi^2$ ), the normed fit index (NFI), the comparative fit index (CFI), Tucker-Lewis index (TLI), and Root Mean Square Error of Approximation (RMSEA). Based on rule of thumb, the values over .90 of NFI, CFI, and TLI are considered as accepted indices, and those over .95 as good fit indices. The values below .80 of RMSEA indicate an accepted model, with a good model having a value of .06 or less.

The CFI yielded the following model fit indices,  $\chi^2(87) = 167.91, p < .001$ ; CFI = .94; IFI = .95, NFI = .89; RMSEA = .067. Among them, although Chi Square ( $\chi^2$ ) was significant, and NFI was a little bit lower than .90, other indices of CFI, IFI and RMSEA indicated acceptable or good fit. In combination, it was concluded that the model was acceptable.

*Concurrent Validity*

Criterion validity means that the instrument measures what it is supposed to measure. To test concurrent validity, students' scores of total history interest and each factor were correlated with their achievement, with the expectation that higher interests lead to higher history scores. The total interest score was defined as the sum of the three factors' score, which was the sum of respective items.

The associations were significant and in the expected direction. In the first sample, the correlation between the total interest score and achievement was,  $r(102) = .28, p < .01$ . The correlations of three factors with achievement were: knowledge,  $r(102) = .17, p = .09$ ; value,  $r(102) = .26, p < .01$ ; and positive feeling,  $r(102) = .26, p = .01$ .

In the second sample, the correlation between the total interest score and criterion was,  $r(115) = .44, p < .001$ . For the three factors, knowledge,  $r(122) = .32, p < .001$ ; value,  $r(131) = .38, p < .001$ ; positive feeling,  $r(132) = .38, p < .001$ . The bivariate correlations between the total interest, three factors, and achievement across the two samples are listed in Table 2.

Table 2. *Bivariate Correlations between Factors, Total Score, and Criterion Achievements*

Variable	Mean	SD	1	2	3	4	5
Sample 1							
1. Factor 1: knowledge	25.34	8.94		.30**	.40**		.17
2. Factor 2: value	31.87	5.26			.43**		.26**
3. Factor 3: positive feeling	30.64	5.80					.26**
4. Total interest score	87.85	15.38					.28**
5. Achievement	87.80	11.59					
Sample 2							
1. Factor 1: knowledge	23.83	7.62		.43***	.50***		.32***
2. Factor 2: value	31.47	4.43			.54***		.38***
3. Factor 3: positive feeling	28.90	5.74					.38***
4. Total interest score	84.46	14.51					.44***
5. Achievement	82.41	10.62					

\*  $p \leq .05$ , \*\*  $p \leq .01$ , \*\*\*  $p \leq .001$  (2-tailed)



*Reliability*

We estimated the internal consistency reliability with Cronbach's alpha coefficient. For the first sample, Cronbach's alpha = .90 for the total 15 items. The reliabilities of three factors were also evaluated. For knowledge, alpha = .94, value, alpha = .87, and positive feeling, alpha = .86. All of them indicated good or excellent internal consistency reliabilities.

For the second sample, for 15 items, Cronbach's alpha = .90. For the three factors, knowledge, alpha = .90; value, alpha = .78; and positive feeling, alpha = .84. These indices also indicated good or excellent internal consistency reliabilities.

*Multiple Regression Analysis*

Standard Multiple Regression was conducted to examine the coefficient index of each factor as three of them were used to predict students' achievement.

*First sample.* For the first sample, the multiple correlation coefficient  $R = .31$ , and  $R^2 = .094$ , showing that approximately 9.4% of the achievement variance was attributed to the combined predictor variables. And the three factors were significantly in predicting the criterion variable,  $F(3, 98) = 3.39$ ,  $p < .05$ .

The regression equation was expressed as:

$$\text{Students' achievement} = .06 \text{ knowledge} + .39 \text{ value} + .31 \text{ positive feeling} + 64.49.$$

The equation in standardized score form was:

$$Z \text{ achievement} = .05 z (\text{knowledge}) + .18 z (\text{value}) + .15 z (\text{positive feeling})$$

None of them alone as a predictor was significant, but the coefficient of value had the highest  $t$  value and was the closest to significant level ( $t = 1.65$ ,  $p = .10$ ). The coefficients and related indices are listed in Table 3.

Table 3. *Coefficients (sample 1)*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	S	Beta		
Constant	64.49	7.44		8.67	.000***
Knowledge	.06	.15	.05	.42	.68
Value	.39	.23	.18	1.65	.10
Positive feeling	.31	.23	.15	1.32	.19

\*\*\*  $p < .001$

*Second sample.* For the second sample, the multiple correlation coefficient  $R = .47$ , and  $R^2 = .219$  showing that approximately 21.9% of the achievement variance was attributed to the combined predictor variables. And three factors were significantly in predicting the criterion variable,  $F(3, 110) = 10.28$ ,  $p < .001$ .

The regression equation was expressed as:

$$\text{Students' achievement} = .19 \text{ knowledge} + .75 \text{ value} + .24 \text{ positive feeling} + 47.77.$$

The equation in standardized score form was:

$$Z \text{ achievement} = .13 z (\text{knowledge}) + .31 z (\text{value})^{**} + .12 z (\text{positive feeling})$$

The weight was significant for value ( $t = 3.11, p < .01$ ), indicating that serving along with other two factors, value was a significant predictor for students' achievement. The coefficients and related indices are listed in Table 4.

Table 4. *Coefficients (sample 2)*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	S	Beta		
Constant	47.77	6.68		7.16	.000***
Knowledge	.19	.15	.13	1.01	.22
Value	.75	.24	.31	2.66	.00**
Positive feeling	.24	.23	.12	.89	.31

\*\*\* $p < .001$ .

## Discussion

### Components and Indices of HII

HII was theory-driven, reflecting the three factors contributing to students' history interest: knowledge, value, and positive feeling. It was defined by 15 items, with 5 items in each factor (See Appendix). The three factors were relatively independent despite the fact that they were significantly correlated with each other. It is likely that people differ in history interest based on their history knowledge level, attributions of personal importance, and/or the emphasis on feeling experiences.

Factor 1, knowledge, contained statements: 'I know history pretty well', 'I read more history books than my classmates', 'Compared to my peers, I think my knowledge in history is above the average', 'I know more historical allusions than my peers', and 'I am satisfied with how much I know about history'. The stored knowledge prompts and sustains students' interest in the subject. As students' knowledge increases, so does their interest.

Factor 2, value, was defined by items: 'Reading history makes people wise', 'Learning history is important', 'Learning history increases people's capabilities in judgment and analysis', 'Many historical figures worth learning from', and 'History knowledge is essential for an informed citizen'. As pupils realize the importance of history, they are more likely attracted to the topic.

Factor 3, positive feeling, consisted of statements: 'I feel very excited when a new history topic is initiated', 'I am interested in history', 'I like touring history museums', 'I enjoy reading history stories', and 'I like doing assignments relating to history'. While the other two factors fall into the category of cognition, positive feeling belongs to the field of emotion. Enjoyment of history is the most prominent feature of historical interest, and it is more likely to bring adolescents to the related activities.

The CFA indices showed that the model fit was acceptable, the internal consistency reliability coefficients proved to be good or excellent, and the concurrent validity indicated it was an effective instrument in measuring students' interest levels. Multiple Regression analysis further indicated that, when the three factors served to predict students' history achievement, value could be a significant predictor.

### Cultural Differences and Developmental Effects

Social cultural theory views learners as active participants within cultural environments, including families, schools, and communities (Martin, 2006). In light of the theory, students' learning cannot be viewed as a content-free activity; instead, it is constituted by sociocultural messages. Cross-cultural studies have demonstrated that cultural backgrounds influence students' self-regulation, beliefs about learning, and learning styles (Li, 2003; Purdie & Hattie, 1996; Yamazaki, 2005).

Given that history is a required subject in the Entrance Examination for College in China, and Chinese school systems usually pursue a test-oriented teaching and learning styles, emphasizing higher scores in exams instead of fostering learners' interest, the educational environment in China is quite different from those in Western countries, where students' initiation and motivation receive greater attention. Li's (2003) research showed that among American students' conceptual framework of learning, *interest* was mentioned as part of motivation; while it was not included in their Chinese counterparts' learning conceptualization. Therefore, it is reasonable to assume that interest plays a more important role among students in Western countries than their counterparts in Eastern countries.

Furthermore, Grade 7 was the first year when Chinese students study national history in depth. The survey was conducted in the first semester, when students were learning the history stories covering the origin of Chinese civilization to Qin dynasty's unifying of the country. This period had a substantial impact on Chinese historical development thereafter.

It is possible that value emerging as a significant predictor in Multiple Regression analysis reflected the content importance learned in this period. Dan and Todd's (2011) study showed that students were more likely to view local history as significant. The weights of the three factors may fluctuate according to learned history content. When students learn World History, their importance to them might decrease, because narrations seem far away to their own regions and cultures.

There is also a possibility that as students' history knowledge accumulates with grades, the weight of the factor of knowledge may increase. Simultaneously, the coefficient of positive feeling can also increase along with students' historical experiences. The study by Dan and Lan (2010) found that people's history interest connected to their life experiences. Therefore, the weights of three factors in predicting students' achievement may change from a developmental perspective.

### Conclusion

This study developed and evaluated HII for measuring Chinese K-12 students' history interest levels. The indices of CFA, internal reliability, and concurrent validity indicated that it was a stable and effective instrument. The limitation of this study is clear: the participants are Chinese 7<sup>th</sup> graders, therefore, the instrument's usage may be limited to Chinese students, and no cross-cultural backgrounds validations were conducted. In addition, when the three factors serve together to predict students' achievement, only value is significant at the stage.

Although the authors intended to develop an instrument for measuring K-12 students' interest Worldwide, more work is needed to prove its feasibility when applied to other samples. Furthermore, it is hypothesized that the prediction weights of three factors may vary from a developmental perspective. Therefore, more research is needed to address the issues of generalization and limitation of this research, including, 1) whether the scale applies to students in different cultural backgrounds, 2) whether the prediction weights vary across different grades. It is

expected that the instrument can be used to measure students' interest levels across different grades and between countries.

### References

- Ainley, M., Hidi, S., & Berndorff, D. (2002). Interest, learning, and the psychological processes that mediate their relationship. *Journal of Educational Psychology, 94*(3), 545–561.
- Alexander, P. A., Jetton, T. L., & Kulikowich, J. M. (1995). Interrelationship of knowledge, interest, and recall: Assessing a model of domain learning. *Journal of Educational Psychology, 87*(4), 559–575.
- Alexander, P. A., Kulikowich, J. M., & Jetton, T. L. (1994). The role of subject-matter knowledge and interest in the processing of linear and nonlinear texts. *Review of Educational Research, 64*, 201–252.
- Baumert, J., & Koller, O. (1998). Interest research in Secondary Level I: An overview. In L. Hoffman, A. Krapp, K. A., Renninger & J. Baumert (Eds.), *Interest and learning, Proceedings of the Seeon Conference on Interest and Gender* (pp. 241–256). Kiel, Germany: IPN.
- Bergin, D. A. (1999). Influences on classroom interest. *Educational Psychologist, 34* (2), 87–98.
- Biggs, J. B. (1987). *Student approaches to learning and studying*. Melbourne, Australia: Australian Council for Educational Research.
- Bloom, B. S., Englehard, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain*. New York: David McKay.
- Corbiere, M., Fraccaroli, F., Mbekou, V., & Perron, J. (2006). Academic self-concept and academic interest measurement: a multi-sample Europe study. *European Journal of Psychology of Education, 21*(1), 3–15.
- Dan, Y., & Lan, W. (2010). The measurement and comparison college students' history interests. *College Students Journal, (44)*2, 424–432.
- Dan, Y., & Todd, R. (2011). Secondary school students' perceptions of historical significance in U. S. history. *Southern Social Studies Journal, 37*(1), 20–26.
- Deci, E. (1998). The relationship of interest to motivation and human needs—the self-determination theory viewpoint. In L. Hoffmann, A. Krapp, K. A. Renninger & J. Baumert (Eds.), *Interest and learning: Proceedings of the Seeon Conference on Interest and Gender* (pp. 91–104). Kiel, Germany: IPN.
- Eccles, J. S. (1983). Expectancies, values, and academic choice: Origins and changes. In J. Spence (Ed.), *Achievement and achievement motivation* (pp. 87–134). San Francisco: W. H. Freeman.
- Eccles, J. S. (1984). Sex differences in achievement patterns. In T. Sonderregger (Ed.), *Nebraska symposium on motivation: Vol. 32* (pp. 97–132). Lincoln: University of Nebraska Press.
- Entwistle, N. J., & Ramsden, P. (1983). *Understanding student learning*. London: Routledge.

- Fransson, A. (1977). On qualitative differences in learning. IV—Effects of motivation and test anxiety on process and outcome. *British Journal of Educational Psychology*, 47, 244–257.
- Garner, R., Brown, R., & Sanders, S. (1992). “Seductive details” and learning from text. In K. A. Renninger, S. Hidi & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 151–182). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Hidi, S. (1990). Interest and its contribution as a mental resource for learning. *Review of Educational Research*, 60(4), 549–571.
- Hidi, S., & Anderson, V. (1992). Situational interest and its impact on reading and expository writing. In K. A. Renninger, S. Hidi & A. Krapp (Eds.), *The role of interest in learning and development* (151–182). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Hidi, S., Baird, W., & Hildyard, A. (1982). That’s important but is it interesting? Two factors in test processing. In A. Flammer & W. Kintsch (Eds.), *Discourse processing* (pp. 63–75). Amsterdam: North—Holland.
- Hidi, S., & Harackiewicz, J. M. (2000). Motivating the academically unmotivated: A critical issue for the 21<sup>st</sup> century. *Review of Educational Research*, 70(2), 151–179.
- Hidi, S., & McLaren, J. (1990). The effect of topic and theme interestingness on the production of school expositions. In H. Mandl, E. De Corte, N. Bennett & H. F. Friedrich (Eds.), *Learning and instruction: European research in an international context: Vol. 2:2* (pp. 295–308). Oxford, England: Pergamon.
- Hidi, S., & Renninger, K. A. (2006). The four-phase Model of interest development. *Educational Psychologist*, 41(2), 112–127.
- Krapp, A. (1999). Interest, motivation and learning: An educational-psychological perspective. *European Journal of Psychology of Education*, 14(1), 23–40.
- Krapp, A., Hidi, S., & Renninger, K. A. (1992). Interest, learning, and development. In K. A. Renninger, S. Hidi & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 3–25). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Krathwohl, D. R. (2002). A revision of Bloom’s taxonomy: An overview. *Theory into Practice*, 41(4), 212–218.
- Martin, J. (2006). Social cultural perspectives in educational psychology. In P. A. Alexander & P. H. Winne (Eds.), *Handbook of educational psychology* (pp. 595–614). Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Li, J. (2003). U.S. and Chinese cultural beliefs about learning. *Journal of Educational Psychology*, 95(2), 258–267.
- Nolen, S. B. (1988). Reasons for studying: Motivational orientations and study strategies. *Cognition and Instruction*, 5, 269–287.
- O’Connor, B. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer’s MAP test. *Behavior Research Methods, Instruments, & Computers*, 32(3), 396–402.

- Purdie, N., & Hattie, J. (1996). Cultural differences in the use of strategies for self-regulated learning. *American Educational Research Journal*, 33(4), 845–871.
- Renninger, K. A. (1989). Individual patterns in children's play interests. In L. T. Winegar (Ed.), *Social interaction and the development of children's understanding* (pp. 147–172). Norwood, NJ: Ablex.
- Renninger, K. A. (1990). Children's play interests, representation, and activity. In R. Fivush & Hudson (Eds.), *Emory Cognition Series: Vol. 3. Knowing and remembering in young children* (pp. 127–165). Cambridge, MA: Cambridge University Press.
- Renninger, K. A. (1992). Individual interest and development: Implications for theory and practice. In K. A. Renninger, S. Hidi & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 361–395). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Renninger, K. A., & Wozniak, R. H. (1985). Effects of interest on attentional shift, recognition, and recall in young children. *Developmental Psychology*, 21, 624–632.
- Schiefele, U. (1990). The influence of topic interest, prior knowledge and cognitive capabilities on text comprehension. In J. M. Pieters, K. Breuer & P. R. J. Simons (Eds.), *Learning environments* (pp. 323–338). Berlin: Springer.
- Schiefele, U. (1991). Interest, learning, and motivation. *Educational Psychology*, 26(3 & 4), 299–323.
- Schiefele, U. (1992). Topic interest and levels of text comprehension. In K. A. Renninger, S. Hidi & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 151–182). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Schiefele, U. (1998). Individual interest and learning—What we know and what we don't know. In L. Hoffmann, A. Krapp, K. A. Renninger & J. Baumert (Eds.), *Interest and learning: Proceedings of the Seon Conference on Interest and Gender* (pp. 91–104). Kiel, Germany: IPN.
- Schiefele, U., & Krapp, A. (1996). Topic interest and free recall of expository text. *Learning and Individual Differences*, 8, 141–160.
- Schiefele, U., Krapp, A., & Winteler, A. (1992). Interest as a predictor of academic achievement: A meta-analysis of research. In K. A. Renninger, S. Hidi, & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 3-25). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Schiefele, U., Krapp, A., & Winterler, A. (1988, April). *Conceptualization and measurement of interest*. Paper presented at the Annual Meeting of the American Educational Research Association (AERA), New Orleans, LA.
- Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2008). *Motivation in education, theory, research, and application*. Upper Saddle River, NJ: Merrill Prentice Hall.
- Stevens, J. (1996). *Applied multivariate statistics for the social sciences* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Stevens, K. (1980). The effect of topic interest on the reading comprehension of higher ability students. *Journal of Education Research*, 73(6), 365–368.



- Tella, A., Tella, A., & Adeniyi, O. (2009). Locus of control, interest in schooling, self-efficacy and academic achievement. *Journal of Educational Sciences* 4(3), 168–182.
- Tobias, S. (1994). Interest, prior knowledge, and learning. *Review of Educational Research*, 64, 37–54.
- Wang, H. (2005). 人民教育出版社中小学历史教材沿革[The succession and innovation of Renmin Educational Press history textbooks in the primary and secondary schools]. Retrieved January 12, 2012, from <http://hist.cersp.com/jcyj/jcll/200512/840.html>
- Weber, K., & Patterson, B. R. (2000). Student interest, empowerment, and motivation. *Communication Research Reports*, 17, 22–29.
- Wigfield, A., & Eccles, J. S. (1992). The development of achievement tasks values: A theoretical analysis. *Development Review*, 12, 265–310.
- Yamazaki, Y. (2005), Learning styles and typologies of cultural differences: A theoretical and empirical comparison. *International Journal of Intercultural Relations*, 29, 521–548.

**Appendix**

*History Interest Inventory (for K-12 students)*

Perceived knowledge possessed (knowledge)

1. I know history pretty well.
2. I read more history books than my classmates.
3. Compared to my peers, I think my knowledge in history is above the average.
4. I know more historical allusions than my peers.
5. I am satisfied with how much I know about history.

*History value perception (value)*

1. Reading history makes people wise.
2. Learning history is important.
3. Learning history increases people's capabilities in judgment and analysis.
4. Many historical figures worth learning from.
5. History knowledge is essential for being an informed citizen.

*Positive feeling in learning history (positive feeling)*

1. I feel very excited when a new history topic is initiated
2. I am interested in history.
3. I like touring history museums.
4. I enjoy reading history stories.
5. I like doing assignments relating to history.