

An Assessment of the Reliability and Validity of the Bartlett-Kotrlik Inventory of Self-Learning in Korea

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The concept of self-directed learning has become increasingly important in educational and work organizations as a result of trends that require learners to become more responsible for their own learning to remain highly skilled and knowledgeable in a competitive marketplace. To assess self-directedness in the Korean context, a relatively new instrument was translated into Korean and the findings associated with its reliability and validity along with the scores of Korean students' self-directedness are reported.

Keywords: Learning, Instrumentation, Assessment

Self-directed learning has been an influential adult learning concept and prominent area of research for more than three decades. However, in recent years, self-directed learning has become increasingly important as rapid changes in technology and the highly competitive marketplace have made it necessary for adults in colleges, universities, and work organizations to continuously learn and re-learn (Centrol & Gayle, 1991). Because knowledge and skills have become perishable commodities, continuous learning must be embraced as a career-long process (Guglielmino & Murdick, 1997; London & Smither, 1999). Building capacities for self-directedness among students and workers are becoming critical for developing lifelong learners (Dunlap & Grabinger, 2003).

One research stream within the self-directed learning literature has focused on measuring self-directed learning readiness for adults and students. Guglielmino (1977) and Oddi (1984) developed instruments to assess self-directedness and numerous studies have examined the psychometric properties of these instruments. Despite some criticisms, these instruments have remained the primary tools for assessing self-directedness. Scholars have acknowledged, however, that new ways of measuring self-directedness are needed to take "the study of self-direction to a new level" (Merriam & Caffarella, 1999). The Bartlett-Kotrlik Inventory of Self-Learning represents a recently developed instrument to measure self-directed learning. While the Guglielmino and Oddi instruments include personal variables, both have lacked consideration of the social and environmental variables which have been incorporated into the Bartlett-Kotrlik instrument. Although high estimates of internal consistency have been reported for this new instrument (Bartlett & Kotrlik, 1999; Bartlett & Kotrlik, 2001), more research is needed to fully assess its psychometric properties, particularly outside the United States.

Within the Korean context, scholars have also acknowledged that self-directed learning is an important factor for becoming a contributing member of an organization (Kwon, Cho & Kwon, 2003). Using a Korean translated version of Guglielmino's (1977) self-directed learning readiness scale (SDLRS), Kim and Kim (1996) acknowledged that self directed learning played a crucial role in enhancing organizational effectiveness and formal workplace training. However, Korean scholars contend that there is a continuing need to measure self-directedness in the Korean context. The availability of the Bartlett-Kotrlik instrument represents a newly developed alternative to assess self-directed learning. Therefore, the purpose of this study was to investigate the reliability and validity of the Bartlett-Kotrlik Inventory of Self-Learning in the Korean context as well as to assess the level of self-directedness of Korean college students.

Review of Literature

Self-directed learning has been conceived as a foundational multi-faceted adult learning concept which has been variously defined in the literature (Ellinger, 2004). Although a universal definition is non-existent, scholars often agree that self-directed learning highlights the learners' control over the schedule and execution of learning (Knowles, 1975; Tough, 1971, 1979 as cited in Merriam & Caffarella, 1999). Knowles's definition of self-directed learning is "a process in which individuals take the initiative without the help of others in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (1975, p. 18). The review that

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follows will focus specifically on the conceptual underpinnings associated with instruments that have been designed to assess self-directed learning.

Instruments to Measure Self-Directed Readiness and Self-Directed Learning

Two instruments have played a vital role in making self-direction one of the most extensively researched areas in adult education. The two instruments are Guglielmino's (1977) Self-Directed Learning Readiness Scale (SDLRS) and Oddi's (1984) Oddi Continuing Learning Inventory (OCLI). Drawing upon Knowles' definition, the SDLRS was designed to assess the degree to which individuals perceived themselves to possess attitudes and skills often associated with the notion of readiness, an internal state of psychological readiness. A factor analysis revealed eight factors: openness to learning, a self-concept as an effective learner, initiative and independence in learning, creativity, a future orientation, and the ability to use basic study and problem-solving skills. This instrument has been widely used and has generated considerable controversy and criticism regarding issues of reliability and validity. In addition, scholars have critiqued the samples used suggesting a lack of studies of self-directed learning among various ethnic groups such as African American, Puerto Ricans, Hispanic, Asian, or Native Americans (Brookfield, 1985a). McCune (1988) has also insisted that the main sample for self-directed learning studies have consisted of middle-aged, educationally advanced females. Caffarella and O'Donnell (1987, 1988) have recommend that future studies about self-directed learning should address diverse populations such as individual with lower levels of formal education, as well as different ethnic and various socioeconomic backgrounds. It is crucial to be aware of cross-cultural differences that may influence the impact and perceived value of self-direction among learners from different cultures (Brockett & Hiemstra, 1991). The SDLRS may not be appropriate for working class adults (Brookfield, 1985b), or for older or less-educated individuals.

The Oddi Continuing Learning Inventory (OCLI) also assesses self-initiated learning and continuing professional education. The instrument was developed by Oddi (1984) who identified characteristics related to initiative and perseverance in learning over time. The development of this instrument was a result of the demand to differentiate between personal characteristics of self-directed learners and the idea of self-directed learning as a procedure of self-instruction (Oddi, 1985). Oddi (1984) stated that the OCLI is different from the SDLRS in its methodology to assess self-direction in learning. Landers (1990) conducted research to compare the SDLRS and the OCLI instruments. With regard to the SDLRS, Landers stated that each of eight factors of the SDLRS significantly correlated with the total SDLRS score. In addition, he stated that only six of the SDLRS items had a weak statistical meaning among the items. Despite the apprehension about the scale, the result of the study showed high internal reliability suggesting that the SDLRS is the more suitable of the two instruments to utilize to assess self-direction in adult learning.

The Bartlett-Kotrlik Inventory of Self-Learning

The Bartlett-Kotrlik Inventory of Self-Learning was recently developed to measure self-directed learning with regard to personal, social, and environmental variables. Several items were adapted to fit workplace learning contexts from the Motivated Strategies for Learning Questionnaire (MSLQ) created by Printrich and Associates. The instrument was reviewed by experts in the areas of measurement, adult education/vocational education, and an editorial review was performed, along with three pilot tests and subsequent analyses (Bartlett, 1999). Bartlett's (Bartlett & Kotrlik, 1999) initial analysis on the third set of pilot data, collected from business educators in the United States, yielded 14 factors and 55 items (measured on a seven-point Likert scale). Due to low loadings, six items were deleted (items 3, 20, 26, 46, 21, and 31) resulting in a refined 11 factor solution with 49 items. The 11 factors are: intrinsic motivation, extrinsic motivation, performance and self-efficacy of work, time management, goal setting, peer learning, help seeking, others performance ratings, supportive workplace, external support, and attitude towards technology. Bartlett (1999) reported that the Bartlett-Kotrlik Inventory of Self-Learning had high estimates of internal consistency (.91 for the 49-item survey), but more research was required to examine the reliability of the instrument. Furthermore, since instrument development is an ongoing process, the full 55 item instrument has been made available for additional data collection and analyses. The strength of the instrument is that it was developed in comparison with the SDLRS and the OCLI and incorporates personal variables, but adds new social and environment variables not previously examined in these other instruments. In summary, given some of the potential drawbacks associated with the existing SDLRS and OCLI instruments, the Bartlett-Kotrlik Inventory of Self-Learning was selected to assess the self-directedness of college students within the Korean context.

Research Questions and Research Design

The following research questions guided the study: (1). Is the Bartlett-Kotrlik Inventory of Self-Learning a reliable and valid instrument in the Korean context? and, (2). How self-directed are Korean college students? To address these questions, a survey methodology was used for this study.

Instrumentation and Translation

The refined version of the Bartlett-Kotrlik Inventory of Self-Learning was comprised of 11 factors. Since the instrument was developed for workplace settings, one factor was not appropriate for the target population of this study. Therefore, the items comprising this factor were re-worded to be suitable for the target population and integrated with another factor. Supportive Work Place and External Support were combined, resulting in the collapsed factor: Supporting Learning Environment. Throughout the rest of this paper, the resulting 10 factor version of the instrument will be referred to as the collapsed version. The collapsed version of the Bartlett-Kotrlik Inventory of Self-Learning containing 55 items was translated into Korean. In order to ensure face validity of the Korean-translated instrument, the instrument translated into Korean was retranslated into English. Additionally, every item in the Korean-translated version of the instrument was compared with the original item in the English version of the Bartlett-Kotrlik Inventory of Self-Learning. If there were no significant meaning differences between the original English instrument and the Korean-translated version of the instrument, it was assumed that the Korean-translated version of the instrument would have the same face validity as the English version of the Bartlett-Kotrlik Inventory of Self-Learning.

Population and Sample

The purposefully selected population for this study was 1,200 undergraduate students enrolled in the College of Business Administration at Korean University in Seoul, Korea during the spring semester of 2003. Since the population consisted of 1200 undergraduate students, the desired sample size ($n=125$) was determined using a formula from Bartlett, Kotrlik, and Higgins (2001). The sample for this study consisted of undergraduate level classes provided by the College of Business Administration at Korean University. A convenience sampling approach was used to identify classes within the College of Business Administration. The students who attended the selected classes on the day of the administration of the survey were asked to participate in the study. A total of 126 students participated in the study.

Procedure

Permission to conduct the study and assistance with the administration of the survey instruments was obtained from professors teaching each of the selected classes in the College of Business Administration at Korean University. Their cooperation was critical to administer the instruments to their classes. The professors administered the instruments to their classes and then returned them to the primary researcher. The survey data obtained was analyzed using the Statistical Package for Social Science (SPSS). After establishing the psychometric properties of the Korean-translated version using the original scoring of the Bartlett-Kotrlik Inventory of Self-Learning, the instruments were then scored to assess the level of self-directedness among Korean college students.

Data Analysis

Descriptive statistics were used to describe the sample on the personal variables such as age and GPA. The demographic variables of age and cumulative GPA were reported by using means and standard deviations. The undergraduate grade levels (freshmen, sophomore, junior, and seniors) were ordinal variables that were reported by using frequencies and percents. Gender was a nominal variable that was reported by frequencies and percents. A factor analysis using principal components analysis with oblimin rotation was used to examine the structure of the Korean-translated version of the Bartlett-Kotrlik Self-Learning Inventory. To facilitate comparisons with the results reported by Bartlett and Kotrlik (1999), only the 49 items they used were included in the analyses reported in this paper. Cronbach's alpha was used to estimate the internal consistency reliabilities of scales based on the original scoring of the collapsed, 10 factors version of the Bartlett-Kotrlik Inventory of Self-Learning. Correlation analysis was used to estimate the relationships among these scales in the Korean context. The self-directed learning level of the sample was reported based on the factors of the Bartlett-Kotrlik Self-Learning instrument and the total Bartlett-Kotrlik Self-Learning instrument. This data was reported by using means and standard deviations.

Results and Findings

The total size of the undergraduate student sample was 126. The majority of the respondents were male ($n=89$, 70.6%), and were management majors ($n=103$, 81.7%). The grade level of the undergraduate students in the sample were comprised of: freshmen ($n=73$, 57.9%), sophomores ($n=23$, 18.3%), and juniors ($n=29$, 23.0%). The sample of this study had an average age of 21.55 ($SD=1.84$) years. The mean GPA was 3.3148 ($SD=0.5715$) on a scale

where A+ =4.5,A-=4.0, B+=3.5, B-=3.0, and C+=2.5.

Table 1. Ten-Factor Solution for Principle Component Pattern Matrix with Oblimin Rotation for the Korean-Translated Version of the Bartlett-Kotrlík Inventory of Self-Learning

Items	Components									
	1	2	3	4	5	6	7	8	9	10
40	.908	-.057	-.011	.066	.040	.234	-.112	-.017	-.010	.091
42	.856	-.080	-.004	-.036	.098	.168	-.059	-.024	-.050	.062
41	.851	.045	.107	-.045	.093	.101	.011	-.084	.010	.079
22	.771	-.024	-.058	.221	-.045	-.062	-.025	-.137	-.033	.057
15	.641	.077	.069	-.072	.124	-.249	.051	.015	-.206	.036
14	.542	-.011	.041	-.215	-.076	-.063	-.059	.158	-.259	.040
16	.491	.181	.017	-.065	-.031	-.061	.177	.071	-.118	-.198
17	.487	-.100	-.150	.163	.051	-.165	.049	.421	.045	-.231
13	.402	.054	.055	-.124	-.138	.002	-.216	.388	-.007	-.046
34	.381	.016	-.089	.083	.223	.342	.096	-.015	.071	-.121
50	-.057	.876	.078	.124	.012	-.006	-.146	.027	-.060	-.082
48	-.095	.873	.023	-.026	-.042	-.019	-.163	-.140	-.211	-.048
49	-.138	.812	-.049	.088	.065	.004	-.114	.011	.134	-.189
44	-.074	.717	.024	-.156	.063	.027	.206	-.145	.104	.220
45	.084	.639	-.085	-.058	-.083	.081	.149	-.117	.184	.258
43	.215	.560	.035	-.189	-.008	.130	.131	-.122	.053	.238
52	-.143	-.037	-.971	-.078	-.076	-.088	-.088	-.025	.012	-.038
53	-.115	-.160	-.908	.040	.073	.040	-.112	.081	.070	.248
51	-.035	.025	-.896	.068	.015	-.090	-.001	-.159	.051	-.116
54	-.066	.016	-.841	.066	-.022	.053	-.017	.179	.001	-.123
55	.119	.084	-.447	.061	-.102	.020	.342	-.086	-.042	-.115
1	-.208	.112	-.032	-.828	.060	-.046	-.005	-.085	-.169	.123
2	.002	-.073	.013	-.817	-.048	.013	-.095	.023	-.004	.076
4	-.134	.048	-.044	-.802	-.131	.021	-.077	.119	.207	-.173
38	.007	-.029	.029	.056	.910	.051	-.033	.014	-.017	.096
39	.000	-.036	-.012	.006	.846	-.013	-.063	.000	-.106	.126
37	.125	.100	.047	.079	.731	.058	-.108	.105	.026	-.068
33	.238	.017	-.113	-.038	-.088	.670	.049	.024	-.036	.043
32	-.115	.159	.175	.035	.055	.661	.095	.041	-.212	-.165
35	-.070	.030	-.064	.061	.243	.647	-.017	.086	.256	-.042
36	.305	.074	.037	-.057	.021	.551	-.217	.037	-.068	-.069
24	.051	-.071	-.028	-.032	-.073	.030	.692	.001	.014	-.138
25	-.232	-.026	.043	.135	.016	-.060	.681	.126	-.117	.044
23	.033	-.176	-.181	-.028	-.012	.124	.403	-.165	-.015	.234
8	.197	.239	.253	.013	-.095	-.024	.350	.235	.350	.173
19	-.113	-.078	-.009	-.115	.176	-.051	.029	.730	.106	.053
11	.116	-.095	.037	-.161	.046	.015	.100	.652	.202	.018
9	-.122	-.037	-.093	.130	-.217	.215	-.010	.647	-.202	.116
10	-.322	.118	-.075	.074	.092	.057	.057	.623	-.229	.130
12	.284	-.062	-.078	-.141	.009	-.040	-.098	.612	.144	-.170
18	.240	-.107	.021	-.370	-.012	-.032	.208	.451	-.112	-.166
27	.350	.024	.025	.053	-.066	.136	.161	.007	-.699	.082
29	.388	.154	-.084	.058	.049	.018	.239	.102	-.549	-.061
28	.352	-.103	.057	-.243	.075	-.183	-.067	.169	-.481	.075
30	.219	.081	-.096	-.200	.139	-.278	.362	-.014	-.396	-.221
47	.174	.002	.056	-.155	-.220	.118	-.117	.287	-.307	.105
5	.110	-.059	-.058	.021	.244	-.245	-.083	.059	-.093	.673
6	.069	-.061	.020	-.191	.078	-.006	.121	.111	.023	.586
7	.160	.300	-.067	.216	-.080	-.319	-.149	.137	.029	.477

Note. Components 1-10 explains 61.77% of variance of the total scale.

Table 1, 2, 3, and 4 are presented to address research question one. Table 1 reports a 10-factor solution for the Korean-translated version of the Bartlett-Kotrlík Inventory of Self-Learning. A 10-factor solution was chosen to permit comparisons between the data collected in Korea and the collapsed 10-factor version of the instrument which is shown in Table 2. Table 3 presents Cronbach's Alphas for the 10 scales of the collapsed version of the Bartlett-Kotrlík Inventory of Self-Learning based on the Korean dataset.

Table 2. Comparison of Factor Analysis Results Between the Original 10-factor Version of the Bartlett-Kotrlík Inventory of Self-Learning and the Results of this Study Using the Korean-Translated Version of the Instrument.

Components	The BKIS	Korean-Translated Version
Attitude Toward Technology	Item 51, 52, 53, 54, 55	Item 51, 52, 53, 54, 55
Peer Learning	Item 32,33,34,35,36	Item 32,33,35,36
Goal Setting	Item 27, 28, 29, 30	Item 27, 28, 29, 30,47
Intrinsic Motivation	Item 1, 2, 4	Item 1,2,4
Help Seeking	Item 37,38,39	Item 37,38,39
Time Management	Item 23, 24, 25	Item 23, 24, 25,8
Supporting Learning Environment	Item 43,44,45,47,48,49,50	Item 43,44,45,48,49,50
Extrinsic Motivation	Item 5,6,7	Item 5,6,7
Performance of self-efficacy of work	Item 8,9,10,11,12,13,14,15,16,17,18,19, 22	Item 9,10,11,12,18,19
Others Performance Rating	Item 40,41,42	Item 40,41,42,13,14,15,16,17,22,34

Note. The refined BKIS yielded an 11 factor solution (Bartlett & Kotrlík, 1999), but the one factor was collapsed to adapt to the student population for this study.

Table 3. Internal Consistency of the Collapsed Version of the Bartlett-Kotrlík Inventory of Self-Learning Scales Based on the Korean dataset.

Factors	Cronbach's Alpha for Factor	Factors	Cronbach's Alpha for Factor
Others Performance Rating	.9392	Goal Setting	.7985
Attitude Towards Technology	.8444	Intrinsic Motivation	.7544
Performance and Self- Efficacy Towards Learning	.8382	Peer Learning	.6901
Help Seeking	.8189	Extrinsic Motivation	.6173
Support Learning Environment	.8117	Time Management	.5389
		Overall Reliability	.8970

Table 4 reports the correlations for scales based on the collapsed version of the Bartlett-Kotrlík Inventory of Self-Learning in the Korean context (above the diagonal), along with the correlations among the components (below the diagonal). All the scales have positive correlations except factor 2 (Extrinsic Motivation) and factor 6 (Peer Learning) and factor 7 (Help Seeking) and factor 10 (Attitude Towards Technology). Factor 3 (Performance and Self-Efficacy Toward Learning) shows substantial correlation with factor 8 (Other Performance Rating) (.534), factor 4 (Time Management) (.351) and factor 5 (Goal Setting) (.589); factor 4 (Time Management) also correlates substantially with factor 5 (Goal Setting) (.345) and factor 8 (Other Performance Rating) (.488). Most of the components have negligible to modest correlations.

Table 4. Correlations among Scales of the Collapsed Version of the Bartlett-Kotrlík Inventory of Self-Learning and Component Correlations

	Scales									
Factors	1	2	3	4	5	6	7	8	9	10
Intrinsic Motivation		.113	.410**	.042	.281**	.087	.015	.213**	.309**	.192*
Extrinsic Motivation	.332		.285**	.221*	.245**	-.166	.116	.224*	.135	.148
Performance and Self-Efficacy Toward Learning	-.382	-.316		.351**	.589**	.153	.088	.534**	.302**	.240**
Time Management	-.372	-.309	.284		.345**	.075*	.142	.488**	.153	.140
Goal Setting	.118	.096	.025	-.120		.137	.094	.495**	.300**	.296**
Peer learning	.016	.179	-.097	-.012	.107		.241**	.340**	.325**	.153
Help Seeking	.194	.111	-.236	-.173	.150	.058		.217**	.092	-.072
Other Performance Rating	.299	.208	-.131	-.282	-.007	-.049	.055		.317**	.238**
Supportive Learning Environment	-.070	-.057	.110	.056	.087	.014	.028	-.154		.264**
Attitude Towards Technology	.058	-.008	-.117	-.018	.020	-.079	.119	.072	-.051	

** Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed): it apply to the above diagonal

Note The bottom left side is a factor correlation.

To address research question two, Table 5 presents the mean and standard deviations for the Korean sample on the 10 scales of the collapsed version of the Bartlett-Kotrlík Inventory of Self-Learning and Sub-Scales. The minimum score on the Korean version of the Bartlett-Kotrlík Inventory of Self-Learning was 33.46 and the highest score was 59.51. The mean on the Korean-translated version of the Bartlett-Kotrlík Inventory of Self-Learning was 46.06 ($SD=4.71$). According to the range for the Bartlett-Kotrlík Inventory of learning (Bartlett, 1999), the respondents for Korean-translated version of the Bartlett-Kotrlík Inventory of Self-Learning would be regarded as slightly self-directed learners.

Table 5. Scores on the Korean Version of the Bartlett-Kotrlík Inventory of Self-Learning and Sub-Scales

Inventory	M	SD
Intrinsic motivation	4.60	1.15
Extrinsic motivation	5.79	0.91
Performance & Self-Efficacy Towards Learning	4.93	0.66
Time Management	4.19	0.72
Goal Setting	4.86	0.87
Peer learning	4.01	0.82
Help Seeking	5.19	1.05
Other Performance Rating	4.06	1.19
Supportive learning Environment	3.69	0.89
Attitude Towards Technology	4.70	1.01
Bartlett-Kotrlík Inventory of Self-Learning	46.06	4.71

Overall, the findings from this study suggest that: (1) in Korea, most scales of the collapsed version of the Bartlett-Kotrlík Inventory of Self-Learning were moderately to substantially intercorrelated; (2) All ten scales on the Bartlett-Kotrlík Inventory of Self-Learning based on the Korean dataset had an estimate of internal consistency above .61 (except time management) with five of the scales reporting estimates of internal consistency above .80; (3) Table 2 reports the results of the principal components analyses which compares the composition of items within the

factors for the Korean-translated version and the collapsed English version of the Bartlett-Kotrlík Inventory of Self-Learning; and, (4) the average score for Korean students on the Korean-translated version of the Bartlett-Kotrlík Inventory of Self-Learning suggests that Korean students are only slightly self-directed learners according to the interpretation of scores for the Bartlett-Kotrlík Inventory of Self-Learning (Bartlett, 1999).

Limitations of the study. Since this study used a translated version of the collapsed instrument, instrumentation would be the major threat to maintaining internal validity. The translation process was the most difficult task throughout the research project. The intent of each item could be distorted due to some of the many fundamental differences between the Korean and English languages, for example, lexicon and tolerance for ambiguity. Some terminology in the original instrument did not make sense in Korean and some terms were difficult to translate. The meaning of the term in English may be clear and easy to understand, but the term may not present any proper equivalent meaning in Korean, however, every effort was made not to distort the original meaning when translated to Korean. Additionally, the translated version of the instrument was reviewed by an expert whose major is to study the translation process. Another limitation is that it is possible that using the collapsed version may have had a slight impact on the results and may affect the comparisons between the original and Korean-translated versions. Other limitations include the population and sample. The research was conducted in only one university in Korea. Therefore, the findings cannot be generalized to all university students in Korea.

Conclusions and Recommendations

Even though there has not been the extensive research on the validity and reliability of the Bartlett-Kotrlík Inventory of Self-Learning as there has been for the SDLRS or the ODCI, this study has tentatively suggested that the collapsed version of the Bartlett-Kotrlík Inventory of Self-Learning demonstrates acceptable face validity and, for most scales, at least adequate reliability in the Korean context. It has also shown that Korean students in College of Business Administration at Korean University are slightly self-directed learners.

In terms of the Korean dataset, the intercorrelations of many scales based on the collapsed version Bartlett-Kotrlík Inventory of Self-Learning were moderate or substantial. The Cronbach's alpha value of the Bartlett-Kotrlík Inventory of Self-Learning based on Korean data was acceptable because the value for most factors was higher than .70. The results of the factor analysis were compared with the original study for the Bartlett-Kotrlík Inventory of Self-Learning. Though the sample of the original study for the Bartlett-Kotrlík Inventory of Self-Learning was high school business educators, the comparison between the original study and this study has provided valuable information. Some results of the principal components analysis for this study exactly matched the original study, for example, the Korean-translated version and the original study comprised the exact same items: 51, 52, 53, 54, and 55 (Attitude Toward Technology). There are several more factors that match between the original study and this study, for instance, Goal Setting which was comprised of items: 27, 28, 29, 30 matched between the Korean version and the original study. However, the Performance and Self-efficacy Toward Learning factor and the Others Performance Rating factor of the Korean version of the Bartlett-Kotrlík Inventory of Self-Learning failed to coincide with the original study. Even though the Bartlett-Kotrlík Inventory of Self-Learning was originally developed to assess adult learners in the workplace, the results suggest that the collapsed version of the Bartlett-Kotrlík Inventory of Self-Learning might have somewhat appropriate reliability and validity for students and those from different cultural backgrounds.

As a consequence of this study, there are recommendations for future research. First, this study was conducted on only one university in Korea, so more studies need to be conducted in various educational institutions and work organizations in Korea. Though the University for this study is ranked very high in Korea, some students could not recognize the meaning of "GPA." Thus, future research should be mindful of terminology for soliciting demographic information. Second, more time-consuming effort is required for translation into another language. Although the terminology is very easy to understand in one culture, it can mean something different in another culture. Lastly, more research is needed to examine the relationship between age and the self-directed learning scale in the Korean setting.

How This Research Contributes to New Knowledge in HRD

From a research perspective, despite the limitations, this study continues to build the literature base on self-directed learning in the Korean context and offers direction for future research. From a pragmatic perspective, college and university educators may find this translated instrument useful for assessing the self-directed readiness of students and workers before they implement an appropriate teaching/training method for the classroom or workplace context. If educators and human resource development professionals are able to assess the level of the self-directed readiness

scale before teaching or training interventions, it may increase the effectiveness of teaching in the classroom and HRD interventions in business settings. In addition, if students know their self-directed learning level before they get a real-world job, it may be valuable for them to develop their capabilities for self-directedness in advance of obtaining professional employment since several researchers in Korean business settings report that there is a relationship between self-directedness and the ability to contribute within in an organization. Therefore, the development of self-directedness among college students might be a crucial skill to develop during college.

References

- Bartlett, J. E. (1999). *Analysis of Self-Directed Learning in Secondary Business Educators*. Unpublished doctoral dissertation, the Louisiana State University
- Bartlett & Kotlik (1999). Development of a self-directed learning instrument for use in work environments, *Journal of Vocational Educational Research*, 24, 185-208.
- Bartlett, J. E., Kotlik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information Technology, learning, and Performance Journal*, 19(1), 43-50.
- Brockett, R. G. & Hiemstra, R. (1991). *Self-direction in adult learning: Perspectives on Theory, Research, and Practice*. London and New York: Routledge & Kegan Paul
- Brookfield, S. (1985a). Analyzing a critical paradigm of self-directed learning: A response. *Adult education Quarterly*, 36(1),60-64.
- Brookfield, S. D. (1985b). Self-directed learning: A critical review of research. *Self-directed learning: from theory to practice New directions for continuing education*, 25, 5-16.
- Caffarella, R.S., & O'Donnell, J. M. (1987). Self-directed adult learning: A Critical paradigm revisited. *Adult Education quarterly*, 37, 199-211.
- Caffarella, R.S., & O'Donnell, J. M. (1988). Research in self-directed learning: past, present, and future trends. In H.B. Long and Associates (Eds.), *Self-directed learning: application and theory*. Athens: Adult education department, University of Georgia.
- Centron, M., & Gayle, M. (1991). *Educational renaissance: Our schools at the turn of the twenty-first century*. New York: St. Martin's Press.
- Dunlap, J. & Grabinger, S. (2003). Preparing students for lifelong learning: A review of instructional features and teaching methodologies. *Performance Improvement Quarterly*, 16(2), 6-25.
- Ellinger, A. D. (2004). The concept of self-directed learning and its implications for human resource development. *Advances in Development Human Resources*, 6(2), 158-177.
- Guglielmino, L. M. (1977). *Development of self-directed learning readiness scale*. Unpublished doctoral dissertation. University of Georgia.
- Guglielmino, P. J. & Murdick, R. G. (1997). Self-directed learning: The quiet revolution in corporate training and development. *S.A.M. Advanced Management Journal*, 62(3), 10-18.
- Kim, J. J., & Kim, K. S. (1996). Developing and utilization the instrument to measure self-directed learning readiness for elementary school teachers. *The Study of Social Education*, 2(1), 1-23.
- Knowles, M.S. (1975). *Self-directed learning*. New York: Associated Press.
- Kwon, D. B., Cho, D. Y., & Kwon, S. H. (2003). Self-directed learning and organizational commitment in Korean business settings. *A paper presented at the Academy of Human Resource Development Annual Conference*, Minneapolis, MN.
- Landers, K. (1990). *The Oddi continuous Learning Inventory: An alternate measure of self-direction in learning*. (Doctoral dissertation, Syracuse University. 1989). Dissertation Abstracts International, 50, 3824A
- London, M. & Smither, J. W. (1999). Empowered self-development and continuous learning. *Human Resource Management*, 38(1), 3-15.
- McCune, S. N. (1988). *A meta-analytic study of adult self-direction in Learning: A review of research from 1977 to 1987*. Unpublished doctoral dissertation, Texas A&M University.
- Merriam, S.B. & Cafferella, R. S. (1999). *Learning in adulthood: A comprehensive guide* (2nd ed.). San Francisco: Jossey-Bass.
- Oddi, L.F. (1984). *Development of an Instrument to Measure Self-directed Continuing Learning*. Unpublished doctoral dissertation. Northern Illinois University.
- Oddi, L.F. (1985). Development and validation of an Instrument to identify Self-directed Continuing Learners. *Proceedings of the 26th Annual Adult Education Research Conference* (pp. 229-235). Arizona State University, higher and Adult Education, Tempe, Arizona.