

Factors Influencing to 21st Century Skill of College Student

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Abstract

The purpose of this study was to empirically examine the structural relationships among academic adjustment ability, social capital, basic psychological need at school and 21C student competencies perceived by college students. A total of 576 college students from H University in Korea participated in this study. Descriptive statistics, correlation and structural equation model fitness test were performed by using SPSS 24.0 and AMOS 22.0. First, the results of the correlations analysis showed that there were statistically significant positive correlations among measured variables. Second, the results of the path and SEM model fit tests showed that all the model fit indices of χ^2/df , TLI, CFI, RMSEA were met the acceptable criteria and shown to be a suitable model structure. Finally, the results demonstrated a strong evidence for mediating effects of social capital and basic psychological need on 21C student competencies. The implications of this study were provided.

Keywords: Academic adjustment ability, Social capital, Basic psychological need at school, 21C student competencies

1. Introduction

The context of this study begins with a review of the movement of reform that has emerged during the past thirty years and continues with a description of the manner in which researchers and educators have responded to discussion calling for reform in 21C pedagogy. The often-quoted and well-known pillars of education for the 21st century from the UNESCO Report Learning: learning to know, learning to do, learning to be and learning to live together are expressed as competencies for future students. Competency approach in the field of higher education is a new phenomenon for the professional development [1][13][24]. The term 21st century skills has become a popular expression [5]. Educators, business leaders and other interested parties have come to a general consensus that a significant gap exists between the knowledge and skills students need for success in the 21st century and the current system of education [11][22]. Therefore, it is very important to explore what components would impact on the 21C student competency representing a combination of skills, abilities and knowledge needed to perform work-related learning task.

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Educational literature has also widely attested the importance of successful academic adjustment in terms of competency, performance and well-being. Academic adjustment describes the process through which individuals learn to adapt to a new academic situation. More specifically, defines academic adjustment as changes in values, beliefs and behaviors that occur as a result of sustained contact between two or more psychological variables [3][14]. Academic adjustment involves more than a students' potential to be academically successful. It encompasses factors such as motivation, achievement, institutional commitment [10], as well as taking action to meet academic demands, experiencing a sense of purpose and overall satisfaction with the academic life [3]. Academic adjustment plays a key component in the overall adjustment process [10][14][15]. Therefore it is expected that academic adjustment would influence for student competency.

According to Bassani[4] and [21], social capital derived from various social relations can be combined with normative and cognitive capacities to facilitate interaction among social institutions. Researchers have suggested that domains of social capital (e.g., family capital and school capital) could be invaluable to improve academic outcomes for students in K-12 educational settings. Social capital as a product of structural and functional social resources would incorporate the existing learning channels or learning opportunities that enhance the interaction mechanisms [6][16]. 21st Century competency is an interactive process where knowledge is accumulated from different resources or channels [11] through interactive social capital. Therefore, it is assumed that social capital can influence for 21st Century competency perceived by college students.

Another line of research based on basic psychological needs theory has shown that satisfaction of basic psychological needs contributes to students' engagement [8], persistence in school and academic achievement [7][23][9]. These needs are the need for autonomy, competence and relatedness. Therefore, it is suggested that three basic psychological needs should be satisfied in the school environment to promote students' academic achievements and overall well-being [14]. Therefore, it becomes crucial to understand whether supporting all of those needs is beneficial for school adjustment and 21C student competency.

This research is intended to provide a clearer understanding of the relationships among reviewed variables for the implication of future higher education. Therefore, the major objective of the study was to explore the relationship among academic adjustment ability, social capital, basic psychological need at school and 21C student competencies perceived by college students. It also intended to investigate the mediating effect of social capital and basic psychological need at school in relationship between academic adjustment ability and 21C student competency.

2. Method

2.1. Participants

A sample of 576 college students from H University in Korea participated in this study. Sample consists of 371 male (64.4%) and 205 female (35.6%) and 415 freshman (72%), 114 sophomore (19.8%), 31 junior (5.4%) and senior (2.8%).

2.2. Measures

2.2.1. Academic adjustment ability scale

Academic adaptation ability scale (AAAS) based on Student Adjustment to College Questionnaire (SACQ) [2] was used. This scale consists of 23 items with 5-point Likert scale, including three sub-factors, college environment (8 items), college life and rule (7 items) and achievement motivation (8 items). The reliability Cronbach α of the AAAS was .951 and sub-factors' α were .877, .896 and .869.

2.2.2. Social capital scale

Social capital Scale (SCS) developed by [12] was used. This scale consists of 7 items, including two sub-factors, social with senior (3 items) and social with peer (4 items). Each item is 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The reliability Cronbach α of the scale was .886 and sub-factors' α were .673 and .873.

2.2.3. Basic psychological need at school scale

Basic psychological need at school scale (BPNSS) [25] was used in this study. BPNSS consists of 15 items including three sub-factors, autonomy (5 items), competence (5 items) and relatedness (5 items) needs at school. Each item is 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The reliability Cronbach α of BPNSS was .924 and sub-factors' α were .882, .818 and .813.

2.2.4. 21C college student competency scale

In this study, 21C college student competency (21CCSC) scale [13] was used which is based on the partnership for 21st Century skill (2004, 2009). This instrument consists of 35 items, including 10 sub-factors, creativity and innovation (5 items), critical thinking and problem solving (4 items), communication and collaboration (4 items), information and media literacy (4 items), ict literacy (2 items), life and career skill (3 items), self-direction (3 items), social and cross-cultural skill (4 items), team productivity (3 items), and leadership and responsibility (3 items). Each item is 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The reliability of total scale was .960 and sub-factors' α were .883, .900, .878, .916, .885, .843, .885, .862, .863 and .860 in order.

2.3. Data analysis

The data were analyzed using SPSS 25.0 and AMOS 22.0. First, descriptive statistics and Pearson correlation analyses were performed. Second, model fitness test utilizing Structural Equation Modeling (SEM) was assessed by maximum likelihood (ML) method. The Tucker-Lewis index (TLI), the comparative fit index (CFI) and the root-mean-square error of approximation (RMSEA) were assessed as model fit indices. In order to examine the mediation effect, bootstrapping was performed.

3. Result

3.1. Descriptive statistics and pearson correlations

The results of descriptive statistics and Pearson correlation analyses showed as [Table 1] and [Table 2]. Each measured variable showed the ranges from -.508 to .179 for skewness and from -.662 to .895 for kurtosis which satisfied the normal distribution criteria ($Skewness < |2|$ and $Kurtosis < |4|$). As shown Table 2, there were statistically significant correlations between academic adjustment ability and social capital ($r = .864, p < .01$), basic psychological need at school ($r = .690, p < .01$) and 21C student competency was $r = .609 (p < .01)$. And, correlation between social capital and basic psychological need at school ($r = .688, p < .01$), 21C student competency ($r = .621, p < .01$) were showed statistically significance. The correlation between basic psychological need at school and 21C student competency appeared $r = .528 (p < .01)$.

Table 1. Descriptive statistics, skewness and kurtosis

Variable	M	SD	Skewness	Kurtosis
1. academic adjustment ability	3.544	.679	-.037	.675
2. social capital	3.659	.735	-.179	.391
3. basic psychological need at school	3.642	.610	.179	.019
4. 21C student competency	3.510	.593	.098	.895
5. creativity and innovation	3.444	.755	-.017	.165
6. critical thinking and problem solving	3.666	.738	-.405	.847
7. communication and collaboration	3.838	.747	-.508	.724
8. information, media	3.334	.850	-.063	-.093
9. ict	2.969	1.106	.056	-.662
10. life ans career	3.628	.756	-.245	.355
11. self-direction	3.320	.878	-.018	-.208
12. social and cultural	3.719	.707	-.329	.483
13. productivity and responsibility	3.548	.779	-.148	.281
14. leadership	3.638	.766	-.154	.044
15. college environment	3.814	.715	-.489	.687
16.college life and rule	3.451	.750	-.068	.302
17. achievement motivation	3.401	.721	.165	.306
18. social with senior	3.708	.731	-.214	.584
19. social with peer	3.622	.821	-.281	.110
20. autonomy school	3.650	.721	.002	-.128
21. competence school	3.540	.669	.191	.022
22. relatedness school	3.735	.665	-.026	-.209

Table 2. Correlations among measured variables

variables	1	2	3	4
1. academic adjustment ability	1	.864**	.690**	.609**
2.social capital		1	.688**	.621**
3.basic psychological need at school			1	.528**
4. 21C student competency				

** $p < .01$

3.2. Test of structural model fitness

The results of SEM fitness test showed that $\chi^2/df = 2.504$ ($p < .001$), TLI = .908, CFI = .915, RMSEA = .069(90% confidence = .063 ~ .105) appeared as satisfying the model fit criteria (Chau, 1996; Hu and Bentler, 1999; Taylor and Todd, 1995). As Table 4 showed, path coefficient of final model appeared academic adjustment ability influenced to social capital ($\beta = .960$, $p < .001$), to basic psychological need at school ($\beta = .783$, $p < .001$) and social capital impacted on 21C student competency ($\beta = .499$, $p < .001$) and basic psychological need at school influenced on 21C student competency ($\beta = .208$, $p < .001$). The significance of standardized path coefficient is judged by C.R ($> .05$). The standardized path coefficients of each measure showed high range of β weights.

Table 3. Results of model fitness test (N = 576)

	χ^2 (df)	χ^2/df	TLI	CFI	RMSEA(CI90)
연구 모형	328.18***(131)	2.504	.908	.915	.069(.063 ~ .109)

*** $p < .001$

3.3. Mediating effect

The indirect effect of academic adjustment ability on 21C student competency through social capital was $\beta = .643$ ($p < .001$). And, the indirect effect of academic adjustment ability on 21C student competency through basic psychological need at school was $\beta = .480$ ($p < .001$). Also, the results of the Sobel test showed that the path academic adjustment ability \rightarrow social capital \rightarrow 21C student competency was statistically significant (Sobel test = 4.36, S.E = .0478, $p < .001$). And, the path academic adjustment ability \rightarrow basic psychological need at school \rightarrow 21C student competency was statistically significant (Sobel test = 6.27, S.E = .0838, $p < .001$).

4. Discussion

The Partnership for 21st Century skills or competencies [17][18] provides a framework for educating 21st Century learners. In this context, this study proposed to examine the structural relationship among academic adjustment ability, social capital, basic psychological need at school and 21C student competencies perceived by college students. It also intended to investigate the mediating effect of social capital and basic psychological need at school in relationship between academic adjustment ability and 21C student competency. Based on the results of the study, theoretical and practical implications of the findings are discussed. First, correlation analysis result showed that there were statistically significant positive correlations among measured variables.

Investigating and understanding 21C student competency in college continued to be an area of interest for all professionals in higher education. Second, the results of structural model fit and mediating effects provide evidence that academic adjustment ability, social capital and basic psychological need at school are important schooling elements for 21C competencies [19]. And, the mediating role of social capital and basic psychological need at school contributes to college students' competency[20]. This study represents a contribution to the knowledge base relating to future learning competencies for college students. Specifically, findings suggest the need for targeted interventions designed to meet both the basic psychological need and social capital needs of student population. As Coleman [6] gives credit for the originations of the social capital used to describe relational networks, social trust and norms, this study showed social capital influenced on individual competency building and functioned as an advantage an individual acquires through the social network in which they.

Based on the SDT [7] [9], three basic psychological needs, autonomy, relatedness and competence, are believed to be essential for ongoing psychological growth, integrity and well-being. Further, this study suggests that the satisfaction of basic psychological needs function to predict student competency towards the mediating potential. According to SDT, individuals who satisfy the three basic psychological needs can be considered as the very basis of effective 21C skills or competencies. This result is consistent with existing empirical studies [23], it is proposed that the satisfaction of basic psychological needs should function as the mediator for the association between psychological control and academic functioning in terms of academic self-concept and academic potential.

Upon research and reflection of this study framework model, although fulfilling social capital and basic psychological need are all important facets of retaining college students' competencies, it is very important that college campus leaders and professionals consider developing ways to identify students' basic psychological need and ways to promote social capital in conjunction with 21C college students competency in college environment.

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