

Convergence Factors Related with Communication Competency of Students in Health Majors in Studying for TOEIC

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TOEIC을 학습하는 보건계열 일부 대학생의 의사소통능력과 관련된 융복합적 요인

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Abstract This study investigates convergent factors related with communication competency of some health majors students in studying for TOEIC. The questionnaire was used using an unregistered self-administered questionnaire for 280 health majors students in TOEIC class from college located in J area from November 1, 2018 to November 30, 2018. The hierarchical multiple regression analysis shows the following results. The communication competency of respondents turned out to be significantly higher in following groups: a group in which ego-resilience is higher, a group in which inkling is higher, and a group in which self-leadership is higher. The results show explanatory power of 57.0%. The results of the study indicate that the efforts, to increase ego-resilience, inkling and self-leadership are required to improve the communication competency among health majors students in studying for TOEIC. These results can be used to develop and operate educational resources and support programs that improve communication competency of health majors students in studying for TOEIC. Future research requires presentation and analysis of structural models considering factors affecting communication competency and correlation with TOEIC scores of health majors students in studying for TOEIC.

Key Words : Convergent factor, Health majors students, TOEIC Studying, Communication Competency, Ego-resilience, Inkling(Nunchi), Self-leadership

요약 본 연구는 토익학습을 하는 보건계열 일부 대학생의 의사소통능력과 관련된 융복합적 요인들을 조사하였다. 설문조사는 2018년 11월 1일부터 2018년 11월 30일까지 J지역에 소재한 대학의 보건계열 토익학습반에서 임의로 선정된 대학생 280명에 대하여 무기명 자기기입식 설문지를 사용하였다. 위계적 다중회귀분석 결과, 자아탄력성이 높을수록, 눈치가 높을수록, 셀프리더십이 높을수록 의사소통능력이 높았으며 이들의 설명력은 57.0%이었다. 연구결과를 볼 때, 토익학습을 하는 보건계열 대학생의 의사소통능력을 높이기 위해서는 자아탄력성, 눈치 및 셀프리더십을 증대시키는 교육지원 및 중재 노력이 필요하다. 이러한 결과는 토익학습을 하는 보건계열 대학생의 의사소통능력을 높이는 교육 자원 및 지원 프로그램의 개발 및 운영에 활용될 수 있다. 추후연구에서는 토익학습을 하는 보건계열 대학생의 의사소통능력에 영향을 미치는 요인 및 토익점수와와의 상관성을 고려한 구조모형의 제시와 분석이 필요하다.

주제어 : 융복합적 요인, 보건계열 대학생, 토익 학습, 의사소통능력, 자아탄력성, 눈치, 셀프리더십

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1. Introduction

Communication competency is an ability to express own viewpoint clearly when expressing own opinion properly[1]. It is an essential ability for students majoring Health as preliminary employees who work in medical and administrative service targeting unhealthy patients or their guardians. Communication competency is core duty tool for hospital employees who take care of patients, and it is an essential factor for interaction of hospital service toward patients who are recovering health.

Hospital employees could conduct high quality hospital service through communication competence for medical and administrative service demanding by patients and their guardians as well as building a relationship of mutual trust with colleagues in same function and manpower in other departments[2]. Communication competency is an essential ability at sectoral job of hospital working for patients[3]. Effective communication influences emotional and physiologic stability of patients and their guardians and relief of symptoms, and helps to promote an effective collaboration with hospital colleagues[2, 4].

The change of Korean medical environment, development of medical system, high quality of commercial medical facility, and medical and administrative related manpower's high level of job enhances competitiveness of Korean medical industry and advances internationalization of medical service[5]. The necessary of international manpower who could conduct international service for hospital duty along with the internationalization of medical service is rising increasingly[6].

Globalized hospital service requires that students majoring health as preliminary hospital employees should enhance a communication capability of foreign language[7]. It could be the academic burden to the students, but it is a

chance to improve the expectancy of professional competencies for hospital[8]. Various medical and administrative service at hospital are under labor-intensive manpower system and it has limitations because manpower should conduct them[7]. As the reality that the number of foreign visitors increases in hospitals, students' English communication competency improvement as a future hospital employee is essential task[6], and it is considered as a basic grounding to become a core manpower in the international hospital service[8].

To cultivate health major students' English communication competency for improvement of international hospital service capability, it is necessary that regular or special education course in university should focus on the English education with working level[9]. TOEIC as English evaluation test for foreigners evaluates practical and business English capability, and it is used for recruitment, improvement of job ability, entrance examination and degree in public and private institutions, companies and universities[5]. In the regular education course in various domestic universities, TOEIC is recognized as graduation certification and credit recognition, and TOEIC training school, camp, and special course in special education course is opened[9]. Students majoring health could improve the communication competency through TOEIC studying and enhance the capability to conduct a duty of global hospital service[5]. To adopt the duty of international service in hospital as a social need actively, education course of English communication competency through TOEIC and studying support is needed.

The communication competency is essential ability that college students majoring health should learn in their education course[2], and it is an essential business capability to build a mutual cooperative relationship with health and medical professional manpower. Moreover, it is basic and essential ability to solve problems

effectively[4]. Therefore, education course and subjects of health should contain the educational resources and programs about the communication competency. The communication competency is a theory focusing on the relationship formation between people and it has important meaning as a tool to create trust of personal relations in the hospital where people should help each others[2]. The communication competency controls and deal with own emotions and it adopts demands successfully from surrounding situations by capability which responds flexibly to situations[2], or which adopts to stressful situations and controls level of tension or patience. In addition, it is affected by a concept of psychologic balance to solve complex problems[4]. Emotional literacy which notices the other party or a situation and inkling(Nunchi) which does something suitable actions[10,11] respond to patients or build positive relationship with colleagues, and they are essential to create positive relations through effective communication[12]. In addition, self-leadership which responds successfully to hospital situations occurring complex and various medical service, acts creatively, and help to complete tasks by the maximum amount of capability is closely related with the communication competency. Therefore, it might be possible to improve the communication competency based on the capability which controls its emotions to respond flexibly to situations, the capability to understand situations or the other party and take suitable action, and the capability to complete the tasks optimally by responding to the situation creatively and successfully.

According to the existing research, it analyzed that ego-resilience which is a capability to respond flexibly through suitable self-control and management to the demand of situation change such as stress is to have a connection with the communication competency as a necessary capability to conduct hospital work[2-4]. It judged that inkling[11], which understands the

atmosphere surrounding the person or other people's mind, and takes suitable action, has a positive influence on the relationship[10,12]. It was reported that self-leadership, which is help to conduct hospital tasks successfully with creative action and optimal capability, has influenced on the communication competency[13]. In the existing research, the investigation of several factors related with the communication competency were reported, but it was difficult to find a relative importance and influence of them that these factors influence the communication competency of university students majoring health as well as studying TOEIC. Therefore, this research is aiming to investigate general features of university students majoring health and studying TOEIC, and their communication competency in relation to ego-resilience, inkling, and self-leadership. It also plans to offer baseline data to use development and operation of learning program for communication competency improvement of university students majoring health and having TOEIC studying.

2. Research Method

2.1 Research subject

G*Power 3.1 program[14] was conducted to calculate an appropriate number of samples. When Power was analyzed by t-test, ANOVA and multiple regression analysis with significance level .05, Power .95, and effect size .15, F-critical region was 1.61, and the number of minimum necessary samples were 226. Therefore, the number of target were 350 including poor answers. 350 university students majoring health in TOEIC studying group were selected randomly and their university was also chosen randomly in J area. 326 questionnaires were collected(93.1%) among total, and 280 answers were analyzed lastly excluding 46 poor answers. The survey

period was from November 1 to 30, 2018 and the researcher visited the survey field to explain research purpose and contents, how to fill a questionnaire, the method of data protection, and rights of rejection for survey accuracy and protection of research ethics. The unregistered self-administered questionnaire was distributed when surveyee agreed to participate in the survey personally, and the questionnaire was filled by self enumeration method in the field and collected.

2.2 Research tool

The research consisted of 17 questions for general features, 14 questions for ego-resilience, 12 questions for inkling, 18 questions for self-leadership, and 15 questions for communication competency.

General features consisted of gender, full age(age), the economic condition(bad, good), communication with parents(often, little), satisfaction of domestic life(satisfaction, dissatisfaction), major(emergency rescue, physical therapy, public health administration, nursing, dental hygienics), university record(good, average, bad), relationship with professor(good, bad), friendship(good, bad), satisfaction of university life(good, bad), drinking, smoking, regular meal, and regular exercise(yes, no), the average amount of sleep per day, hobby and leisure(enough, insufficient), and subjective health condition(good, bad).

Ego-resilience was measured by 14 questions[16] from a research tool by Block and Kremen[15] which were translated, modified, and verified validity. According to the total score on the scale, the score range was between 14~70 and the higher score is, the higher Ego-resilience is. The Cronbach's α value which shows internal reliability of this research was .782.

Inkling was measured by 12 questions from a measuring tool developed by Heo Jaehong et al. Its subdomain consisted of 7 questions for Grasp factor and 5 questions for Behavior factor. According to the total score on the scale, the score range was between 12~60 and the higher score

is, the more inkling it has. The Cronbach's α value which shows internal reliability of this research was .918.

Self-leadership was measured by 18 questions[18] in a measuring tool which is developed by Manz[17] and suggested validity by modified and compensated internally. This measure consists of 3 questions for Self-expectation, 3 questions for Rehearsal, 3 questions for Goal setting, 3 questions for Self reward, 3 questions for Self criticism, and 3 questions for Constructive area. According to the total score on the scale, the score range is between 18~90 and the higher score is, the higher Self-leadership it has. The Cronbach's α value which shows internal reliability of this research was .861.

Communication competency was measured by 15 questions[19] from ICC(Interpersonal communication Competence)[1] by Rubin which were modified, compensated, and verified validity. According to the total score on the scale, the score range is between 15~75 and the higher score is, the higher communication competency it has. The Cronbach's α value which shows internal reliability of this research was .737.

2.3 Processing

SPSS(ver 23.0) was used for statistical analysis. The comparison of communication competency by target's general features, ego-resilience, inkling, and self-leadership was tested by t-test and ANOVA. The full age divided into less than 19 years old and over 20 years old to convert to categorical type based on the distribution of control variable value. Ego-resilience, inkling, and self-leadership which does not have an official cut-off point was divided into 「lower group」 and 「higher group」 based on the median value, and its communication competency was compared by t-test. To understand the influence of each independent variable influencing on communication competency, the hierarchical multiple regression analysis was conducted with communication competency as a dependent variable and variables showing significant difference

in univariate analysis as an independent variable. The significant categorical variables for communication competency were used by converting to dummy, and variables converted to dummy were economical conditions and major. The significance level of every statistics was $p < .05$.

3. Research Result

3.1 Communication competency by general features

The communication competency score of 280 targets was 50.20 ± 5.89 in Table 1. The communication competency by general features was appeared significantly high in a group with good economical conditions and students majoring nursing. Other features such as gender, age, communication with parents, satisfaction of domestic life, school record, relationship with professor, friendship, satisfaction of university life, drinking, smoking, meal, sleeping, hobby and leisure life, and subject health condition did not show significant difference with communication competency.

Table 1. Communication competency according to general characteristics

Variables	N(%)	Communication competency
		Mean±SD
Sex		
Male	36(12.9)	50.31±6.25
Female	244(87.1)	50.18±5.84
t(p-value)		.119(.905)
Age(yrs)		
<19	34(12.1)	48.82±5.58
19	166(59.3)	50.75±6.20
20≤	80(28.6)	49.64±5.22
F(p-value)		2.027(.134)
Economics status		
Good	200(71.4)	50.73±5.60
Difficulty	80(28.6)	48.86±6.38
t(p-value)		2.419(.016)
Major		
Emergency rescue ^a	29(10.4)	50.00±6.04
Physical therapy ^a	33(11.8)	50.45±4.64
Public health administration ^a	61(21.8)	48.25±5.75
Nursing care ^b	121(43.2)	51.49±5.70
Dental hygiene ^a	36(12.9)	49.08±6.73
F(p-value)		3.606(.007)
Total	280(100.0)	50.20±5.89

3.2 The communication competency in accordance with ego-resilience, inkling, and self-leadership

Table 2 compared the communication competency by ego-resilience, inkling, and self-leadership. The communication competency was significantly high in a group which ego-resilience, total score of inkling, grasp and behavior as a subdomain of inkling, total score of self-leadership, self-expectation as a subdomain of self-leadership, rehearsal, goal setting, self reward, self criticism, and constructive area was high.

Table 2. Communication competency according to ego-resilience, Inkling and self-leadership

Variables(Total score)	N(%)	Communication competency
		Mean±SD
Ego-resilience		
Low group [§]	133(47.5)	47.50±5.06
High group	147(52.5)	52.63±5.52
t(p-value)		-8.076(<.001)
Total inkling		
Low group	148(52.9)	47.33±4.74
High group	131(47.1)	53.41±5.38
t(p-value)		-10.054(<.001)
Grasp		
Low group	136(48.6)	46.86±4.74
High group	144(51.4)	53.35±5.08
t(p-value)		-11.032(<.001)
Behavior		
Low group	108(38.6)	47.85±5.07
High group	172(61.4)	51.67±5.90
t(p-value)		-5.557(<.001)
Total Self-leadership		
Low group	136(48.6)	47.40±4.87
High group	144(51.4)	52.83±5.55
t(p-value)		-8.681(<.001)
Self expectation		
Low group	142(50.7)	47.45±4.93
High group	138(49.3)	53.02±5.45
t(p-value)		-8.976(<.001)
Rehearsal		
Low group	144(51.4)	48.42±5.55
High group	136(48.6)	52.08±5.66
t(p-value)		-5.469(<.001)
Goal setting		
Low group	123(43.9)	48.11±5.39
High group	157(56.1)	51.83±5.75
t(p-value)		-5.533(<.001)
Self reward		
Low group	123(43.9)	48.07±5.33
High group	157(56.1)	51.87±5.78
t(p-value)		-5.653(<.001)
Self criticism		
Low group	151(53.9)	49.36±5.80
High group	129(46.1)	51.18±5.86
t(p-value)		-2.607(.010)
Constructive area		
Low group	170(60.7)	48.87±5.54
High group	110(39.3)	52.24±5.84
t(p-value)		-4.849(<.001)
Total	280(100.0)	50.20±5.89

§ : Low and high group classified by the median score of each variable.

3.3 Factors influencing communication competency

To understand explanation power of independent variable influencing communication competency of target, 4 models were conducted the hierarchical multiple regression analysis in Table 3. The general features were input into the model I, and it showed that the communication competency was higher when the economic conditions were better, and when the target was majoring nursing, its explanation power was 5.9%. In the model II, ego-resilience was input into variables which were input into model I, and the result showed that the higher ego-resilience is, the higher communication competency it has. Its explanation power was 30.0% due to variables input into model II. In the model III, the grasp and behavior as a subdomain of inkling was input into variables which were input into model II. The result showed that the higher grasp and behavior as a subdomain of inkling is, the higher

communication competency it has, and variables input into model III could explain 53.8% of communication competency. In the model IV, self-expectation as a subdomain of self-leadership, rehearsal, goal setting, self reward, self criticism, and constructive area was input into variables which were input into the model III. The result showed that the higher self-expectation as a subdomain of self-leadership is, the higher communication competency it has, and variables input into model IV could explain 57.0% of communication competency. In this model, 24.1%, 23.8%, 3.2% of explanation power was increased by adding ego-resilience, inkling, and self-leadership respectively. In other word, communication competency was highly related with the order of ego-resilience, inkling, and self-leadership. According to the result of regression model examination, DW(Durbin-Watson) index value was 1.885. That means it does not have

Table 3. Hierarchical multiple regression of selected variables on communication competency

Variables	Model I		Model II		Model III		Model IV	
	B	t	B	t	B	t	B	t
Economics status [§]	-1.925	-2.539*	-1.110	-1.681	-.380	-.702	-.330	-.617
Major [§]	2.314	3.346**	1.523	2.526*	.720	1.438	.542	1.095
Ego-resilience			.416	9.758**	.271	7.351**	.196	4.780**
Inkling					.543	9.495**	.494	8.457**
Grasp								
Behavior					.255	2.843**	.156	1.711
Self-leadership							.462	2.780**
Self expectation								
Rehearsal							.164	1.319
Goal setting							.137	1.017
Self reward							.060	.412
Self criticism							.053	.535
Constructive area							-.053	-.380
Constant	49.747		30.371		17.769		16.098	
F	8.630		39.450		63.884		32.277	
R ²	.059		.300		.538		.570	
R ² change	.059		.241		.238		.032	
Adjusted R ²	.052		.293		.530		.552	

VIF min=1.055 max=1.877, Durbin Watson=1.885

§ : Dummy Variable, * : $p < .05$, ** : $p < .01$.

autocorrelation as well as multicollinearity because of the index value as from minimum 1.055 up to maximum 1.877.

4. Study

The communication competency score of university students majoring health and having TOEIC studying was average 50.20 ± 5.89 in the range between 15~75. The general features did not have significant difference in gender, age, communication with parents, satisfaction of domestic life, school record, relationship with professor, friendship, satisfaction of university life, drinking, smoking, meal, sleeping, hobby and leisure life, and subjective health condition. However, the economical conditions and major had significant difference in communication competency. There was a limit to see significant differences in communication competency according to gender since the number of male students was smaller than the female students in survey. The result of existing research[2,4] to show that communication competency has difference in accordance with the major satisfaction was verified in this research similarly, and this research found newly that there was significant difference in the communication competency depending on the economical conditions. The students majoring nursing has significant difference in communication competency comparing with other health related majors. That means students majoring nursing are satisfied with their major and show the will of scholastic achievement more than other students majoring other subject. In other word, it assumed that major satisfaction and the will of scholastic achievement might improve the communication competency. A group with good economical conditions expressed its opinion more clearly than a group with bad economical conditions, and when

disagreement of other's opinion occurs, a group with good economical conditions described its opinion clearly. In the variables related with general features of university students majoring health and having TOEIC studying, the number of control variable to show a significant connection with communication competency was fewer. It might be considered that the statistical significance to show a connection with communication competency might be high. To improve the communication competency of university students majoring health and having TOEIC studying, major satisfaction and achievement motive of learning should be raised and it needs to develop counsel and guide program and strive for a mediate effort.

The result that the higher ego-resilience of university students majoring health and having TOEIC studying is, the higher communication competency they have verified the significant relation[2-4] between ego-resilience and communication competency which already reported in existing research. It also showed that ego-resilience influenced communication competency by responding situation change such as stress or injuries flexibly through suitable self control and coping mechanism. The report[10,12] that inkling has an effect on relationship verified that there is significant relation between inkling and communication competency. The result that the higher score of grasp and behavior as a subdomain of inkling is, the higher communication competency it is showed that understanding the circumstance and atmosphere or grasping others' mind leads to take suitable action and it helps to build positive relationship with others as well as communication competency improvement. This research also showed that self-leadership has an effect on the communication competency[13], and it was verified that self-expectation, rehearsal, goal setting, self reward, self criticism, and constructive area as a subdomain of

self-leadership has significant relation with communication competency individually. It is considered that self-leadership could help to conduct tasks successfully by creating action and optimal capability. The result showed that it is necessary that a development and operation of character education program to improve communication competency for university students majoring health and having TOEIC studying by controlling themselves suitable to respond situation change, understanding circumstance and atmosphere, or others' mind and taking action appropriately, and improving capabilities to conduct tasks successfully with creation action and optimal capability.

Hierarchical multiple regression analysis was conducted to 4 models to understand the explanation power of independent variables influencing the communication competency of university students majoring health and having TOEIC studying. The result showed that when the economical situation is good, the communication competency of nursing student was significant high in the general feature of model I. When ego-resilience is higher, the communication competency is significant high in the feature of ego-resilience, model II. In the feature of inkling, model III, the communication competency was significant high when grasp and behavior is higher, and the communication competency was significant high when self-expectation as a subdomian of self-leadership was higher in the self-leadership feature of model IV. The explanation power of all variables was 57.0%. Moreover, 24.1%, 23.8%, 3.2% of explanation power was improved by adding ego-resilience, inkling, and self-leadership respectively, it showed that ego-resilience and inkling was highly related with the communication competency. The result showed that the communication competency of university students majoring health is a high connection with in order of ego-resilience, inkling, and self-leadership. The existing

research showed that the higher ego-resilience[2-4], inkling[10,12], and self-leadership[13] is, the higher communication competency is, and it also influenced relationship positively. These analysis of individual factors were verified this research similarly. This result suggested that ego-resilience, inkling, and self-leadership should be managed in advance to improve the communication competency level of university students majoring health and having TOEIC studying as a target of this research. It was confirmed that ego-resilience, inkling, and self-leadership influencing the communication competency of university students majoring health could be a mediation factor. This result suggested that a development and distribution of counsel and guide program to support situation control capability, taking action suitable considering circumstance and others' mind, and enhancement of creative and optimum behavior and competency for the communication competency of university students majoring health and having TOEIC studying.

The limitation of this research is that the result could not apply to the whole university students majoring health and having TOEIC studying because it was cross-section study targeting university students majoring health without considering the characteristics of each department. In the future researches, it is necessary to suggest and analyze a structural model to understand a mutual relation and comparative importance between factors considering the correlation between communication competency and TOEIC scores. which have an effect on the communication competency of students majoring health. In addition, an investigation of additional factors for the relation between the communication competency of students majoring health and having TOEIC studying and factors such as self-esteem[20], cooperative learning with fellow professor[21], self-efficacy[22], and scholastic

achievement[23]. This research is meaningful to understand a relation between ego-resilience, inkling, self-leadership and communication competency through convergence of individual factors in accordance with the communication competency of students majoring health and having TOEIC studying to prepare the duty of global hospital service effectively.

5. Conclusion

This research examined a relation between ego-resilience, inkling, self-leadership and communication competency of university students majoring health and having TOEIC studying. The survey period was from November 1 to 30, 2018 and 280 university students majoring health and participating in TOEIC studying group in the university located in J area. The targets were selected randomly.

The communication competency of university students majoring health and having TOEIC studying was significant high in a group of good economical condition, nursing student, high ego-resilience, total score of inkling, grasp and behavior as a subdomain of inkling, total score of self-leadership, self-expectation, rehearsal, goal setting, self reward, self criticism, and constructive area as a subdomain of self-leadership. In the hierarchical multiple regression analysis, the university students majoring health and having TOEIC studying has high communication competency when their ego-resilience, grasp as subdomain of inkling, self-expectation as subdomain of self-leadership is high, and the total explanation power of these variables was 57.0%. Therefore, the support and mediation effort for the instruction and counseling about the convergence factor of ego-resilience, inkling, and self-leadership influencing the communication competency should be prepared to develop and operate education resource and support program

for communication competency improvement of university students majoring health.

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