A Study on the Development of Core Competency Diagnostic Tools for Professors at A' University*

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Abstract

Purpose: This study attempted to systematize a support system that can enhance teaching core competencies by establishing a scale for diagnosing teaching core competencies at University A. **Research design, data and methodology :** To this end, the first Delphi was conducted With six experts related to university core competency modeling research by extracting factors and designing structured questionnaires through a literature review process that collects and analyzes prior research related to domestic and foreign university teaching competency. The derived questions were diagnosed on 27 professors, and independent sample t-verification and ANOVA were conducted using SPSS 24.0 for analysis by key teaching competency factors. **Result:** What is the standard suitability of KMO. It was shown as 929 (KMO standard conformity value is close to 1), and Barlett's sphericity verification showed $\chi2=5773.295$, df=1081, p<.It appeared as 001 and confirmed that it was suitable for conducting factor analysis. **Conclusions:** The core competencies of A University teachers were set based on the educational goals of A University, such as basic teaching competency, creative teaching competency, practical teaching competency, and communication teaching competency. This means that the concept and factors of the core competency of professors are likely to change, and in the end, continuous efforts to upgrade and apply research on core competency of professors are essential to quickly and organically respond to changes in competency required to increase the competitiveness of universities.

Keywords: Teaching core competency, Teaching support system, Competency diagnostic tools, Diagnostic scales

JEL Classification Code : C2, C15, C65, M53, Y10.

1. Introduction

1.1. Background and Purpose of the Study

In order to educate talented people suitable for the future society, it is necessary to think about what abilities are required in the future society. At a time when we are not sure that the knowledge and skills currently taught in educational institutions will be useful in the future, we should think about what the ability to cultivate students is. The ability required in the future society is not a piece of knowledge or function, but a more fundamental and comprehensive ability to enable individuals to effectively adapt and develop themselves in a changing society, and it is essential for survival. For example, in the "era of uncertainty" (Lee, 2018), a representative characteristic of future society due to the Fourth Industrial Revolution, talent with specific knowledge or skills no longer functions effectively. Therefore, it is necessary to have a spirit of challenge to overcome change rather than specific knowledge or skills, and to have the ability to solve problems creatively by converging various knowledge and

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skills, which requires fundamental skills such as challenging attitude, convergent thinking, and creative problem-solving. In addition, the talents required in the era of the 4th Industrial Revolution include self-directed learning, computing thinking, logical thinking, intuition to recognize a large framework, collaboration and communication, proper understanding and behavior of civil society members, persistence and curiosity (Baek et al., 2016).

Due to the Fourth Industrial Revolution, the social structure and industrial structure are changing rapidly and unpredictably, and accordingly, the human resources required for future society are also changing from the past. In order to educate talented people suitable for the future society, it is necessary to think about what abilities are required in the future society. At a time when we are not sure that the knowledge and skills currently taught in educational institutions will be useful in the future, we should think about what the ability to cultivate students is. The ability required in the future society is not a piece of knowledge or function, but a more fundamental and comprehensive ability to enable individuals to effectively adapt and develop themselves in a changing society, and it is essential for survival.

Although the core competencies of professors are very important factors for improving the quality of university education, research on the core competencies of university professors began only in the 2000s in Korea. As university students' interest in core competencies increases, each university is making various efforts to improve students' core competencies, but there is still not enough system to diagnose the competencies of university professors directly involved in students' education.

In order to support professors' continuous strengthening of their capabilities, it is necessary to start by identifying and diagnosing the competency factors of professors who support college students' capacity building. For example, if the ability to apply the latest technology to education, the ability to communicate with various learners, and the ability to think in a convergent way are the core competencies required for professors, universities will be able to provide various support to develop their competencies.

The operation of an educational support system that can support the capabilities of university professors is emphasized as a key factor for improving the quality of university education (Kwon & Lim, 2006; Jeon, 2009; Nunan et al., 2000). This is because the cost of selecting excellent instructors and investing to improve their capabilities can have a more positive impact on students' capacity building than any other educational investment (Beerens, 2000).

Therefore, this study aims to establish a core competency diagnosis scale for professors at University A to measure their core competencies and systematize the support system according to the measurement results, so it is intended to infer demographic variables to be considered when establishing the teaching support system.

In detail, the positive and negative importance between indicators was compared through the hierarchical analysis technique, and based on this, a plan to utilize the indicators was proposed (Yoo & Park, 2021). It aimed to analyze the spatial distribution of owner change in Insa-dong, Jung-gu, Seoul, which is considered to be an area where commercial gentrification occurred.

2. Theoretical Considerations

2.1. Prior Research on Core Competencies of Professors

Prior research was organized by dividing the concept of core competencies required by university professors into teaching-oriented university teaching competencies and extended university teaching competencies. First, looking at previous studies on teaching-oriented university teaching competency, teaching-oriented university teaching competency defines teaching competency centered on "teaching," and as a professor, the core teaching competency was operatively defined as follows (Park et al., 2015). The professor's core competency is the ability to teach, support, and promote learners' learning activities by combining elements related to higher education activities with differentiated expertise to increase the effectiveness and efficiency of learners' learning in the higher education field (Lim & Kim, 2007).

Lee et al. (2009) defined teacher competency as an intrinsic characteristic of knowledge, skills, and beliefs necessary for instructors to perform excellent educational tasks.

Han and Yim (2012) defined teaching competency as the total knowledge, skills, and attitudes required to successfully teach in the context of teaching and learning, and Kang (2019) defined teaching competency as a professor's ability to successfully perform teaching (class).

Next, the expanded university teaching capabilities of university professors should play various roles related to research and service as well as lectures and teaching activities. The contents of previous studies presented in the study by Park et al. (2015) include the concept of teaching capabilities and collaboration.

The competency related to successfully fulfilling responsibilities in a university organization is related to the successful performance of various duties held by professors. The Research Competencies Framework (2007)

presented personal attitudes, ethics as professors (professor ethics, compliance with research ethics rules), and the role and function of professors in the organization (participation in academic activities, research design and implementation, research funding, and research guidance and help others). Specifically, it includes the role of dean, director, and department head on campus, various committee activities, government policy advisory activities in the suburbs, participation in various questions, and training at companies, social organizations, and social education institutions.

Recently, teacher competency has been used in a broad sense, including vocational ethics, moral values, leadership, international sense, understanding of participation and service, communication skills, convergence thinking, self-development skills, etc. (Song et al., 2013; Yang, 1991; Tustin et al., 2012).

2.1. Prior Research on Teaching Core Competency Diagnosis Tools

Currently, most of the studies related to core competencies of professors aim to analyze and grasp the situation of professors' core competencies and establish a support system to be equipped to improve professors' core competencies. Research on the promotion of professors' core competencies can be said to be an early stage in which research has not been conducted for longer than students' core competencies. Therefore, most of the studies related to core competencies of professors focused on developing diagnostic tools for diagnosing core competencies of professors. Among the preceding studies related to the core competency of professors, the research methods and research results of the study that developed and validated the core competency diagnosis tool for professors are as follows.

Lim (2007) reviewed prior research in a research on the core teaching competency model of university professors and conducted a Behavior Event Interview (BEI) on 12 outstanding professors and 8 average professors to derive provisional competencies. Behavioral event interviews have the advantage of being able to obtain in-depth information on competencies and discover new competencies by asking about important events experienced while working in the job and obtaining responses to the contents, related people, coping methods, and results (Lee et al., 2012). In the next stage, two educational engineering majors and three excellent professors were conducted twice to select behavioral cases for each competency and to derive the core competencies of professors by reviewing the area of competency, area name, and appropriateness of behavioral cases. The focus group interview is a collective in-depth interview in which

five to seven Subject Matter Experts (SMEs) gather together to conduct intensive discussions on a set topic (Lim, 2007). Based on the behavioral events by competency tentatively derived in the above process, the researcher produced a competency diagnosis tool, conducted a survey of 90 professors, and modified and supplemented the diagnosis tool based on the results of exploratory factor analysis to verify job validity.

Yang (2010) developed a teaching competency diagnostic tool through the stages of competency modeling and diagnostic tool development. Through the competency modeling process, a tentative teaching competency model was developed, and a diagnostic tool was developed based on this. Looking at the competency modeling process, the basic framework of the teaching competency model was divided into lecture competency and basic competency through prior research analysis. In addition, the first Delphi questionnaire was formed by analyzing the contents discussed by conducting interviews with school management, behavioral event interviews with excellent professors, and focus group meetings (FGI) with 12 experts. The Delphi survey was conducted twice to evaluate the importance of each item of teaching competency for 30 excellent teachers in lectures, and the competency model was revised and supplemented. The content validity of the competency model developed through this process was verified, and a workshop was conducted on 10 expert panels to develop competency-based diagnostic tools to revise and supplement the diagnostic tool. The diagnostic tool developed through the above process was surveyed on 112 university professors and 115 part-time instructors, and a confirmatory factor analysis was conducted to verify the validity of the job. As a result of the confirmatory factor analysis, three questions were deleted based on a factor load of less than 0.4, and the diagnostic tool was modified, and multiple fitness indices were checked to determine whether the modified diagnostic tool was appropriate. In addition, the reliability was verified using the recruitment reliability (CR) value and the need for change was analyzed through the Borich coefficient. As a result of the study, two competency areas, lecture competency and basic competency, were derived, and 51 behavioral indicators were formed to explain 15 competencies and 15 competencies within each competency area (Yang, 2010).

Lee (2012) developed diagnostic tools through prior research analysis, behavioral event interviews, and Delphi surveys to develop diagnostic tools for engineering professors' capabilities, and conducted exploratory factor analysis, confirmation factor analysis, convergence validity, and discrimination validity verification. Looking at the research process in detail, first, behavioral case interviews were conducted with six engineering professors

to analyze prior studies and collect basic data on teaching capabilities. The contents of the interview were analyzed to derive competency elements through the process of describing the central sentence, classifying the content, and deriving keywords, and deriving behavioral indicators for each competency element by referring to the central sentence and keywords. Based on the results of the behavioral case interview, a draft teaching competency diagnosis tool was developed by conducting two Delphi surveys on 13 excellent teachers and 10 engineering professors at various universities to respond to the importance of each question. The diagnostic tool was surveyed on 153 professors at the College of Engineering, and the questions were revised through exploratory factor analysis. The revised question finally verified the validity of the content through three engineering professors and two educational engineering experts. As a final step, the final diagnostic tool was confirmed by conducting confirmatory factor analysis, convergent validity, and discriminatory validity to confirm the validity of the modified diagnostic tool through exploratory factor analysis. The engineering college teaching competency diagnostic tool developed through this process included content expertise, technology development, and applied technology competencies in the engineering college's core competency group, and lecture competencies consisted of learner analysis, teaching design, learning promotion, relationship formation, student respect, and evaluation (Lee, 2012).

Kang and Park (2017) received advice from 24 experts by analyzing prior studies related to teaching competency diagnosis tools to develop primary questions, display importance, and describe expert opinions. The results of experts' opinions were analyzed by calculating the average of importance, standard deviation, and content validity ratio (CVR) for each question. Based on the results of expert advice, a secondary diagnostic tool was developed to analyze the importance and performance of teaching capabilities, and a survey was conducted on 83 professors. Exploratory factor analysis, confirmation factor analysis, reliability analysis, and average analysis were performed using the collected data, and the Borich coefficient was obtained by corresponding sample-test and importance-execution analysis, and priority was determined. As a result of the study, a teaching competency diagnosis tool including basic competencies, educational practice competencies, and community competencies was developed, and the need for change was found to be high in understanding university education, analysis design, class execution, and empathy learning culture and global sharing (Kang & Park, 2017).

Lim et al. (2019) used research methods such as literature review, FGI, Delphi survey, exploratory factor analysis, and confirmatory factor analysis to develop and verify the validity of teaching competency measurement tools. Specifically, the initial questions were first developed by deriving a conceptual framework for teaching competency based on literature research related to teaching competency and FGI results of excellent lecture teachers. The developed initial question developed a preliminary question that revised and supplemented the initial question by conducting two Delphi surveys of 15 experts to determine the validity of the initial question. As for the developed preliminary questions, the first questionnaire was conducted on professors, and as a result, exploratory factor analysis was conducted to modify and supplement the questions. The revised questionnaire was finally confirmed by conducting a confirmatory factor analysis through the second questionnaire. The finally developed teaching competency measurement tool consisted of four factors and 33 questions, including class design, class operation, communication, self-diagnosis and reflection, and professional knowledge (Lim et al., 2019)

To summarize the research methods used in the preceding studies, the research method included exploring various competency factors through behavioral event interviews between excellent and general professors in the early stages of the development of teaching competency diagnosis tools. In the early stages of research in some areas, research that explores various competency factors and behavioral indicators in various cases using inductive methods should be included, but it can be said to be a process that can be added or subtracted as necessary. Research methods commonly used in previous studies related to the development of teaching core competency diagnostic tools are focus group interviews, Delphi surveys, exploratory factor analysis, and confirmatory factor analysis, and importance analysis is carried out as necessary. Focus group interviews and Delphi surveys are used in almost all studies to create preliminary questions for diagnostic tools, and preliminary questions confirm the final model by conducting exploratory factor analysis by modifying and supplementing the diagnostic tool. The professor's core competency diagnosis tool will help to systematically diagnose professor's competency in more diverse aspects, and it can be used to provide professors with customized competency support environments through a series of processes that provide appropriate feedback, support teaching competency development, and re-diagnose teaching competency (Lim et al., 2019).

3. Data Collection and Analysis Methods

3.1. Interviews with External Experts and Focus Groups

External experts and focus group meetings provided a total of 19 pages of structured questionnaires to collect opinions through written interviews. Examples of retrieved written interviews are as follows.

Table 1: Example of a written interview with an external expert

* Please check the validity of the above question and write down your opinion.

Degree of Validity	Not Reasonable at all	Not valid	Moderate	Reasonable	Very Reasonable
		0			
Opinion	Learner's understanding A. It is questionable how the instructor's efforts to identify the individual level of students' needs and environment can be diagnosed B. Item 03 It is questionable whether some learners' personal situations can affect the entire lecture C. Duplicate contents of item 04 and 06 Instructional design A. The subject of item 07 is ambiguous, and if the instructor does not understand the contents of the lecture for the semester, the lecture should not be assigned, and it does not seem to be a matter of competency diagnosis B. Duplicate contents of item 08, 11 C. Duplicate contents of item 09, 12 Development of teaching media A, Duplicate All Items Content				

3.2. External Expert Panel Meeting

A non-face-to-face meeting with three external experts was conducted to verify the validity of the content and collect detailed feedback data. Examples of receiving opinions from external experts are as follows.

Table 2: Collection of written interviews participating in focus group meetings

Educational Philosophy / Education Officer A desirable education hall for human formation	Clear and desirable educational beliefs/the ability to insight and apply the essential meaning and problems of education with a belief in ideal education
Ethical consciousness (moral quality)	Strict ethical awareness (with a high sense of ethics) To create amoral/sound school culture (to create a healthy school culture), a strong will to practice ethics - A clear and sound sense of value and ethics/ Must have the ability to select, determine, and evaluate the right value - Moral qualities/ ethical practice to express the ethical consciousness required of educators in other words

3.3. Exploratory Factor Analysis

Exploratory factor analysis was conducted to determine whether the competency structure of 30 factors and 88 questions was appropriately reflected to identify the core competencies of A University. Exploratory factor analysis is a verification method to statistically determine the extraction or appropriateness of the number of factors based on the collected data. (Kim Coefficient, 2007). In order to review the suitability of the data, the standard suitability of Kaiser-Mayer-Olkin (KMO) and the sphericity of Baerlett were verified. The KMO value measures the appropriateness of the sample, which means that the closer to 1, the more suitable it is for factor analysis (Seong Tae-je, 2014). In addition, Bartlett's sphericity verification tests whether the correlation between variables is zero, and the larger the sphericity test statistics and the lower the probability of significance accordingly, the better for analyzing factors (Sung Tae-je, 2014). Exploratory factor analysis was performed using principal component factoring, orthogonal rotation, and maximum likelihood analysis as factor extraction methods. And the internal reliability was verified with Cronbach's α.

3.4. Analysis by Professor's Core Competency Factor

In order to analyze gender differences in the core competencies of A university professor, an independent sample t verification was conducted with gender as an independent variable and professor's core competencies as a dependent variable. In addition, in order to analyze differences by age, a one-way distribution analysis (ANOVA) was conducted with age as an independent variable and professor core competencies as a dependent variable. However, in order to statistically compensate for the problem of a small number of samples participating in

the scale survey, the number of samples was expanded to 500 and a bootstrap was conducted to analyze a stable sample assuming it. Scheffer verification was conducted as a follow-up verification to find out specific differences in the variables from which statistical significance was derived in the analysis. SPSS 24.0 was used for statistical analysis.

4. Research Results

4.1. Exploratory Factor Analysis Results

Table 3: Exploratory Factorial Analysis Results (Verimax Rotational Components Matrix Table)

Factor	Ingredient					
	1	2	3	4	5	6
Diversity recognition 1	.866	.199	.221	.116	.194	.136
Diversity recognition 2	.851	.282	.253	.096	.063	.081
Listen 1	.848	.171	.267	.243	.115	.069
Student Consideration 3	.847	.128	.247	.274	.178	.161
Career Guidance Personal Qualities 1	.814	.358	.274	.144	.167	.104
Career Guidance Personal Qualities 3	.787	.370	.226	.105	.139	.131
Resource Linkage 1	.704	.067	.357	.269	.226	.240
Resource Linkage 2	.525	-.025	.491	.258	.425	.160
Industry-Academic/ research institute Class Operation 3	.233	.874	.150	.112	-.007	.170
Understanding Research Technology Trends 1	.159	.850	-.001	.263	.170	.175
Industry-Academic/ research institute Class Operation 2	.192	.850	.178	.085	.078	.080
Industry-Academic/ research institute Class Operation1	.276	.826	.208	.012	-.083	-.095
Understanding Research Technology Trends 2	-.029	.791	.095	.092	.243	.244
Understanding Research Technology Trends 3	.152	.791	.046	.103	.156	.095
Employment guidance 2	.288	.668	.101	.127	.226	.059
Employment guidance 1	.113	.644	.403	.046	.063	.044
Community exchange 1	.458	.578	.318	.133	.280	.184
Evaluation Method 3	.287	.260	.835	.043	.002	.248
Feedback technology 3	.209	.178	.752	.172	.218	-.100
Introspection 3	.447	.056	.740	.383	.063	.098
Learning Practice Link 1	.247	.275	.705	.373	.335	.228
Evaluation Method 1	.239	-.006	.700	.223	.327	.286
Learning Practice Link 3	.337	.278	.691	.386	.101	.109
Evaluation Method 2	.365	.285	.685	.326	-.049	.310
Understanding the world of work 2	.578	.221	.661	.301	.015	.100
Understanding the world of work3	.498	.118	.573	.321	.397	.132
Understanding the world of work 1	.484	.132	.501	.477	.046	.230
Sense of duty 3	-.034	.389	.202	.812	.007	.058
Understanding and practicing educational ideology 2	-.013	.269	.098	.784	.070	.323
Understanding the knowledge of the major 1	.357	.039	.208	.772	.246	-.002
Understanding the knowledge of the major 2	.357	.004	.333	.744	.268	.080
Philosophy of Education 2	.406	-.079	.313	.706	.052	.344
Philosophy of Education 1	.391	.006	.303	.703	.101	.227
Work ethic2	.289	.016	.407	.678	.388	.083
Work ethic 3	.017	.362	.017	.674	-.044	-.227
Industry-academia cooperation1	.237	.442	.297	.160	.711	.183
Industry-academia cooperation2	.367	.503	.111	.167	.696	.054
Community exchange 2	.271	.237	.072	.560	.577	.177
Understanding Learners 2	.189	.250	.325	.242	.105	.786

Instructional Design 2	.373	.213	.437	.115	.128	.679
Understanding Learners 1	.316	.362	.122	.364	.195	.678

After deriving this test item, an exploratory factor analysis was conducted on university A teachers. The purpose of exploratory factor analysis is to determine the appropriateness of the items for each item's descriptive statistics and factor analysis, so research subjects with unanswered questions should be excluded, but exploratory factor analysis was conducted on all 27 participants.

Before conducting an exploratory factor analysis to confirm the factor structure of the test tool, it was confirmed whether the core competency diagnosis tool was suitable for factor analysis through the standard suitability of KMO (Kaiser-Meyer-Olkin) and Bartlett's sphericity verification. As a result of confirmation, the standard suitability of KMO is. It was shown as 929 (KMO standard conformity value is close to 1), and Barlett's sphericity verification showed $\chi 2=5773.295$, df=1081, p<.It appeared as 001 and confirmed that it was suitable for conducting factor analysis.

confirmed through factor analysis, exploratory factor analysis was performed using the main component analysis and the Varimax method using the maximum likelihood analysis method. As a result, the factor load is.The criteria for selecting and removing factors were applied by excluding questions with a correlation of less than 40 and other factors with a correlation of .30 or more with the questions.

The specific Berry Max rotation component matrix table of the exploratory factor analysis results is as follows. the practical teaching competencies consisted of one factor: questions 1 and 2 of industry-academic cooperation and questions 2 of community exchange. The key contents of the confirmatory factor analysis results for each factor are summarized as follows. First, the preliminary scale for this test consisted of a total of 11 sub-factors, but as a result of confirmatory factor analysis, it can be confirmed that the questions consisted of a total of 6 factors.
Second, in communication teaching competency, student consideration, diversity recognition 1, 2, listening 1, career guidance individual qualifications 1, 3, and resource linkage 1 were analyzed as one factor, and questions 2, 3, and 1 were excluded. Third, it was analyzed that the factors of external cooperation among In the exploratory factor analysis conducted thereafter, the number of factors with an eigenvalue value of 1.0 or more was

Fourth, it was confirmed that a total of 9 questions, including questions 1, 2, and 3 of the operation of industry-academic classes, 1st, 2nd, and 3rd questions of employment guidance, and 1st question of community exchange, were appropriate. Fifth, in terms of creative

teaching competency, the evaluation methods 1, 2, 3, feedback technology 3, self-reflection 3, and learning practical guidance 1 and 3 were analyzed as one factor, so, the factors of lecture organization were evaluated, feedback, and self-development. Sixth, in terms of creative teaching capabilities, questions 1 and 2 of learner understanding and 2 of class design were analyzed as one factor, and all data development items were excluded from the factors. Seventh, educational philosophy 1 and 2, vocational ethics 2 and 3, major knowledge understanding 1 and 2, and educational ideology and practice 2 and mission 3 of school value realization factors were analyzed to be one factor.

Eighth, as a result of factor analysis, it was confirmed that lecture operation capabilities consisting of lecture clarity, learning promotion, and lecture management factors were not appropriate as factors for teaching competency diagnosis, and all questions were excluded.

5. Conclusion

As a basic study to establish a teaching support system at A University, this study developed a core competency diagnosis scale for teachers at A University to derive future implications for the teaching support system at A University.

The research results shown through this study can be summarized as follows.

The core competencies of A University teachers were set based on the educational goals of A University, such as basic teaching competency, creative teaching competency, practical teaching competency, and communication teaching competency. As a result of exploratory factor analysis of sub-competencies and item composition by competency derived based on the results of previous studies, questions that meet the criteria for finding the appropriateness of each factor analysis and model identification were derived.

In detail, questions about basic teaching competency consisted of 8 questions, and questions to measure creative teaching competency consisted of 13 questions, including 3 lecture preparation competency factors and 10 lecture development factors. In addition, the questions to measure practical teaching competency consisted of 12 questions, including 9 questions for professionalism promotion and 3 questions for external cooperation, and finally, the communication teaching competency consisted of a total of 8 questions.

5.1. Suggestions

Considering the above research results, it is possible to suggest the following future research and application.

First, efforts should be made to establish the A University teaching support system, focusing on the developed A University professor core competency scale. Each university is striving to strengthen teachers' capabilities, but efforts are not being made well even though teaching capabilities such as lecture evaluation and teaching support programs must be implemented in an interconnected manner to maximize their effectiveness. (No & Choi, 2004). This integrated effort is also due to the lack of clear definitions and standards for teaching core competencies (Eom et al., 2015). These restrictions on the establishment of a teaching support system have been resolved through these studies, and it is true that the establishment of a teaching support system has been sporadic as needed or on a unit program basis since then. Therefore, in order to establish a comprehensive, systematic, and scientific teaching support system, which is the ultimate purpose of this study, it is very urgent for departments related to University A to have a willingness to cooperate and connect. As a result, the core competency scale of university professor A derived from this study has secured validity and reliability, so it is most desirable to have a unified planning, execution, management, evaluation, and reflux system based on this.

In addition, advanced research on the teaching core competency diagnosis scale should be continuously conducted. This study was conducted based on data from 27 people. In order to increase the reliability and validity of the professor's core competency diagnosis scale, it is necessary to refine the diagnosis scale through analysis of a lot of data for more professors. Since the concept of teaching core competency is not a fixed concept, advancement of the teaching core competency diagnosis scale should be implemented from another perspective. Strictly speaking, the core competency of a professor depends on the talent required by society, and the concept of a desirable professor's role requested by a professor in a neutral sense and a talent for students educated at the university are mixed. In other words, university professors are required to change their roles according to changes in society, so the core competencies of university professors suitable for the times are inevitably variable. In addition, students are also required to change their roles according to changes in society, and since the subject of educating the students is a university professor, the capabilities required for professors should be emphasized according to the changing human resources. This means that the concept and factors of the core competency of professors are likely to change, and in the end, continuous efforts to upgrade and apply research on core competency of professors are essential to quickly and organically respond to changes in competency required to increase the competitiveness of universities.

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