

## Abstract

### A study on the survey design of the higher education stage of the Korean longitudinal study for the gifted and talented education

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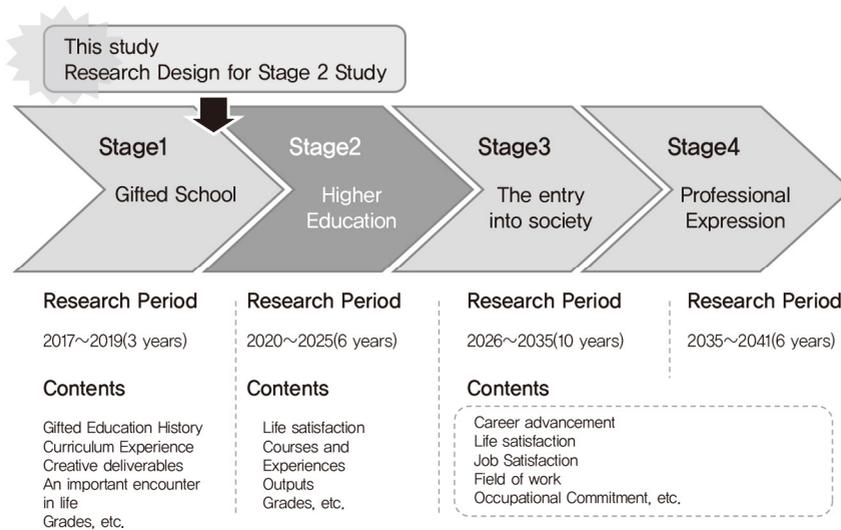
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#### Introduction

This study is a research and design study for the promotion of the 2nd phase research (higher education period) in 2020, as the 1st phase research (the gifted school period) of the Korea Research Institute for Gifted and Talented Education is completed in 2019. Accordingly, a research procedure was conducted to provide an empirical and scientific basis for reviewing the development, growth, and educational experience of gifted school graduates in higher education.

The main purpose of this study is to build a research model and to develop a research tool to examine the various college experiences and growth of students entering college after graduating from gifted school. Furthermore, as the data of the Korea Research Center for Gifted Education accumulate, we proposed an analysis method (analytical design and implications), a method of conducting a survey (design and implementation of the survey, and a method of presenting the results of the research) and a policy application method of the research data. Therefore, this study comprehensively includes survey model design, analysis design, survey design, and practical use of results.

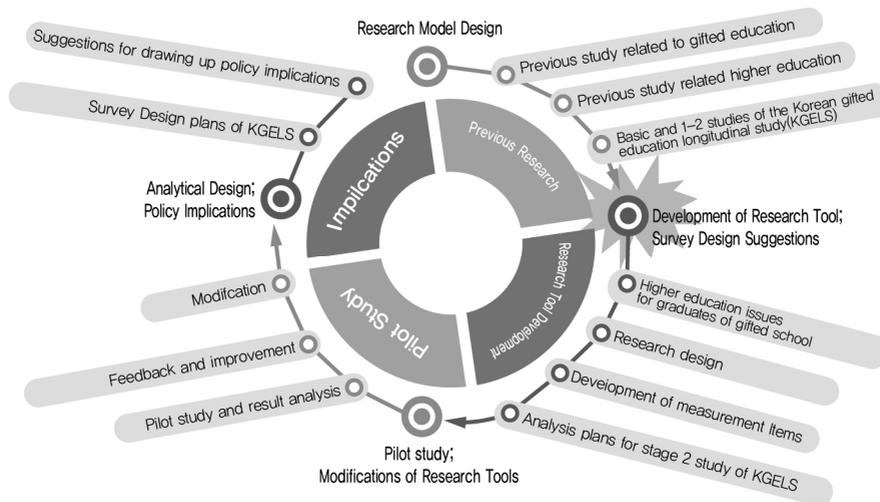


[Figure 1] Progressive study design for Korean gifted education longitudinal study

The purpose of this study is to reflect the results of the Delphi survey on higher education in the basic survey design study for Korean longitudinal study for gifted and talented education(Kim et al., 2016), and the main issues which gifted education graduates experience in higher education. Through this, the main issues necessary for the higher education stage of gifted education beneficiaries were revealed in the survey model. On the other hand, the research model was constructed based on the fact that the university life experienced by the gifted school graduates is equally experienced by the non-gifted school graduates. In other words, assuming that all college students experience the same in college courses, what we considered, more importantly, was that an important basic premise in the research design process of this study was to build a research model that explores diverse experiences and growth of gifted education graduates in the higher education. Therefore, we used the basic framework, Astin's model (I-E-O), which explores the relationship between experiences and achievements of university education, and moreover we put an effort to embrace the main issues of university education of gifted school graduates reflected in the model.

## Structure of the Study

The study consisted of nine chapters. The first chapter included the necessity and purposes of the study, the contents of the study, and the research method. Specific research contents are survey model design, research tool development, research tool validity and improvement plans for the main survey, analysis design and survey plans. As a research method to implement this research, the research model development and validity process were systematically performed, and then we revealed the results derived from this process. Specific research methods involved literature, experts' advices to identify major issues related to college life of gifted school graduates, meetings with the research team, experts' opinions for questionnaire development and experts' opinions surveys, pilot study, validity analysis, and improvement plans. It is to draw up an improvement plans and implications of the study by diverse opinions.



[Figure 2] The structure of this study

## Research Model Design

We analyzed the previous research related to gifted education and reviewed the current status of large-scale surveys related to higher education and longitudinal research. Therefore, this study was based on the results of various researches on basic research and design of Korea's endeavors for gifted education, gifted education and higher education.

Designing the Survey Model and Developing a Survey Tool is a comprehensive analysis of the results of the Delphi survey of the basic study for the Korean longitudinal study on gifted school students(Kim et al., 2016), a comprehensive analysis of previous studies presented in Chapters 2 and 3, and the university life of gifted school graduates. This was done through a survey of expert opinions on key issues. This study considered the followings in designing the survey model. First, the survey model is based on the issues in college life of gifted education graduates. Second, the survey model is constructed to examine the diverse experiences of the gifted school graduates and the cognitive and affective growth and development. Third, by including survey contents that can be compared with the results of other survey studies, the growth of gifted and non-gifted school graduates can be compared. Fourthly, it includes survey contents for time series analysis with the first stage research. This survey model and measurement items were developed through a total of nine research team meetings and modified through expert opinions. The survey model includes seven aspects and more than 77 factors (see [Fig. III-2]).

To systematically carry out the 2nd stage research of the Korea longitudinal study for Gifted and Talented Education, we suggest as follows. This study did not propose a survey plan for recruitment or sampling because students will participate in the survey at the time of higher education after graduation from

the gifted schools. Regarding the survey method, it will be conducted through an online survey, and through a research firm the survey target should be systematically managed so that the data of the longitudinal research should not be not leaked. In the first half-year in the investigation, the survey proceeds survey items improvement and IRB permission. In the second half-year, the survey should be conducted in September–October and then researchers should conduct data cleaning and provide a technical report. In the next year after the survey is conducted, a yearly plan for the survey is established by conducting an in-depth analyses of the results of the previous year. In summary, in the first year of the 2020 longitudinal study, it should provide the research plan, survey implement, data cleaning, technical report, and then in the second year of the survey in 2021, in-depth analyses and results will be carried out.

### **Validity of Measurements**

Chapter 5 Validity of Survey Tools is the result of preliminary research on the continuous variables that need to be validated among the survey items. We planed 400 participants, about 15% of first- to fourth-year students at their university, who graduated from gifted school between 2016 and 2019. Of these, Respondent recruitment was done through SNS of the gifted school graduates. At this time, the purpose of the research and the rights of the participants were provided. The response period was from August 26 to September 16, 2019, and a total of 337 responses were collected during this period. The respondents were 284 male students (84.3%) and 53 female students (15.7%), which can be understood as the majority of gifted school graduates are male students. Also, data showed by grade, 191 (56.7%) in first grade, 80 (23.7%) in second grade, 44 (13.1%) in third grade, 22 (6.5%) in fourth grade, and 280 students in Seoul and Daejeon (83.1%).

As a primary research question, the validity of the survey tool in this study is about the continuous variables. As the analysis method, we analyzed factor analysis, descriptive statistics, reliability, correlations with total score items, and reliability when removing items. In the case of factor analysis, when we developed the items, exploratory factor analysis was used and provided factor names which were elicited by the analyses. On the other hand, when the validity of the measurement model was confirmed through previous studies, the model fits were provided through confirmatory factor analysis. Factor analysis was conducted on 21 measurement models, 52 sub-factors were derived. Also, we conducted descriptive statistical analyses of sub-factors were used, and definitions of the factors were derived. Also, based on the results of factor analysis, basic statistical analysis and reliability analysis, measurement items constituting factors were deleted, corrected and supplemented. The analysis results of each factor and the definition, as well as deletion and revision of the each item are presented.

### **Suggestions to Improve the Measurements**

The results and future directions for the improvement of the survey tools were summarized and presented through the analysis of the survey. To do this, we received opinions on items and the model from ten college students who participated in the pilot study, the four teachers of the gifted schools, and nine professors. Based on the analysis results, the results of the revision of the survey questions were presented. The survey in the next year will perform using these results. With reference to the contents of this study, the research tool can be supplemented in the planning process of early 2020 to carry out the actual research.

## **Results of preliminary study**

Results and Conclusions of the Preliminary Survey related to the issues of gifted school graduates and the issues the previous research. We provided the results regarding categorical variables and excluded continuous ones. Also, we presented conclusions as the implications of the analysis results. However, there are limitations to obtain and interpret the results. For example, this study is the preliminary research as a survey design study, and based on the basic statistical analyses, and thus these conclusions are based on that results. Therefore, more in-depth analysis will be available through the next year's survey. Despite these limitations, the results of the research presented in this chapter may provide implications for conducting in-depth analysis in the next year's study on freshmen in higher education, whom were graduated from gifted schools.

## **Implications**

The implications of this study are as follows. First, it is meaningful in that the research procedure was derived by conducting the basic research for the study of higher education in Korea for the gifted education, and developing and verifying the measurement tool. Second, it secured the credibility of the research contents by reflecting the issues related to adaptation to college life of gifted school graduates and by considering the characteristics of the survey subjects. Third, as research on gifted education regarding the higher education level made up 4% of the total research, this study is able to supply systematic research materials for the fundamental study for the higher education level of gifted school graduates. Fourth, some factors, including factors and questions of other longitudinal studies related to higher education, can be compared with time series changes of gifted school graduates and growth of non-gifted school graduates. Fifth, a survey model embraces the experiences and growth of the

higher education level of gifted school graduates. Lastly, the significance of the study is that it has laid the foundation for empirical data that can examine the growth process of gifted education beneficiaries as national creative talents.

### **Suggestions for Analysis Plans and Policy Implications of KGELS**

The suggestions for the Korean Longitudinal Study on Gifted and Talented Education proposes an analysis design and application plans and policy application plans. Regarding the analysis design, it is as follows. First, the analytical design proposed the linkage between the first and second research data. Second, eight analysis methods were proposed for the developmental characteristics of gifted education subjects and for the growth model. Third, we proposed an analysis methods related to college life adaptation issues of gifted school graduates.

Finally, this study considers academic contributions in that it is a fundamental study to provide an empirical and scientific bases for examining the development, growth, and educational experiences of gifted school graduates at the higher education level. In addition, this study proposes the policy application plans of the Korean longitudinal study for gifted and talented education as follows. First, it will be used as basic data for social demand and policy change of gifted education. Second, it will be used as the data to develop the gifted education program and suggest the new educational system model by sharing longitudinal research data and results. Third, we can derive support measures for growth as creative talents for graduates of gifted schools. Fourth, we can prepare an educational supportive system for self-directed growth. Fifth, it will be used to prepare a plan for the growth of character and accountability as beneficiaries of gifted education. Sixth, it will be used as a basis for discussion and cooperation among related ministries and institutions to enhance the gifted

education effects. Seventh, it will be used as the data to enhance the outcome of the gifted education policy and to spread the outcome through sharing results. Lastly, we will regularly share the policy implications of the results of Korea's endowment of gifted education and use it as a clue key for all institutions related to gifted education to discuss important outcomes and to promote policies cooperatively.