논문 11

Longitudinal Effects of Career Guidance on College Students' Satisfaction With Their Academic Majors

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요 약

본 연구는 2009~2011년 한국교육고용패널조사(KEEP) 데이터를 활용하여 대학생들의 진로지도의 전공만족도에 관한 종단적 효과에 대해 분석하였다. 대학생들의 진로지도에 관한 분석결과, 학교에서 학생들을 위한 상담, 진로정보 제공, 그리고 교과목 선택에 대하여 교수들의 지도가 잘 이루어질수록, 점차적으로 학생들의 자아효능감이 올라갔으며, 이는 곧 전공만족도에 종단적이고 긍정적인 효과가 있었다. 분석 결과, 남학생들이 여학생들보다 자아효능감이 높게 나타났으며, 4년제 이상 대학에 재학하는 학생들이 전문대학에 재학하는 학생들보다 전반적으로 전공만족도가 높게 나타났다. 또한 학교소재지가 서울 등 대도시보다 작은 도시나 시골에 있을수록 교수들의 학과목 선택에 있어서의 지도가 잘 이루어진다고 학생들이 인식하고 있었고 전공만족도 또한 높았다. 이 결과는 학교소재지가 소규모 도시일수록 능력, 선호, 삶의 중요도, 진로결정 자아효능감 등 대부분의 학생들의 자아효능감이 높게 나타나 진로지도, 자아효능감 그리고 전공만족도와의 관계를 도시 규모에 따라 실증적으로 보여주었다. 본 연구는 진로지도가 학생들의 자아효능감, 그리고 전공만족도에 미치는 영향를 매개효과검증을 통해 실증적으로 분석하고 그 종단적 효과를 보여주었음에 큰 의의가 있다.

I. Introduction

The increased policy interest in career guidance provision is evident in the overlapping policy reviews conducted in the last decade by influential international organizations including OECD, the World Bank, and the European Commission and its agencies (Watts, 2012). According to OECD definition (OECD, 2004), career guidance is services intended to assist individuals, of any age and at any point throuhout their lives, to make educational, training and occupational choices and to manage their careers (OECD, 2004). Internationally, in reaction to the changing demands of the society and the labour market, schools increasingly acknowledge their responsibility towards guiding young people in lifelong learning and career development (Mittendorff et al, 2008; Schaap et al, 2009). Educational innovations related to competence-based education include stimulating the development of career competence (Whiteley, 1984). Among

1) 한국직업능력개발원 전문연구원

them, career guidance historically has played a significant role in counseling research and practice (Mittendorff et al, 2008; Whiteley, 1984).

The implementation of competence-based environments encouraged many schools to implement a system of integral career guidance (Mittendorff et al, 2008), used to guide students in planning their personal development and to supply a context in which students can explore their ambitions, strengths and weaknesses and spell out future plans (Meijers, 2008). The overarching goal is to help students develop the necessary career competencies by reflecting on the experiences undertaken in school. According to Watts (2012), the concepts of career guidance have been changed from career choice to career construction. Policy goals also have been reframed to support policies for lifelong learning, linked to sustained employability (Watts, 2012).

There is significant variation in effectiveness among different treatment approaches (Swanson, 1995; Whiteley, 1984). Further, the literature on the long-term effectiveness of career guidance is imited (Hughes, Bosley, Bowes, & Bysshe, 2002; OECD, 2004). The cost of conducting longitudinal studies and the difficulty of obtaining long-term data survey account for this lack of longitudinal effectiveness studies. Thus, only a few researchers have conducted quantitative longitudinal studies investigating the evolution of career guidance outcomes and the long-term impact is often overlooked (Perdrix, Stauffer, Masdonati, Massoudi, & Rossier, 2011).

With this necessity, this study aimed to investigate the long-term stability of the positive effects gained through the career guidance. Especially this study focused on longitudinal effects of counseling, career information, and professor guidance on college students' major satisfaction.

Ⅱ. Literature Review

1. Career Guidance

Three main traits characterized the current concept of career development interventions in the postmodern era. First, career interventions are conceived as being applied over the life span (Super, 1980). Second, the career development process is viewed as including all the transitions that an individual experiences; school, job, and personal (Schlossber, 1984). Third, clients are considered to be "actors" in their own career development. The goal is to help them to be the subject of their own existence. Such concepts are a major change from earlier career guidance practices that were created

almost a century ago in industrialized countries. At that time, career guidance took the form of relatively directive advice given by an expert to adolescnets who were leaving school and beginning a job apprenticeship (Huteau, 2002; Parsons, 1909). In todays contexts, three components of career guidance services can be distinguished (Watts, 2010)

1) Career counseling: conducted on a one-to-one basis or in small groups, in which attention is focused on the distinctive career issues faced by individuals.
2) Career education: as part of the curriculum, in which attention is paid to helping groups of individuals to develop the competences for managing their career development.
3) Career information, provided in various format (increasingly, web-based), concerned with information on courses, occupations and career paths. This includes labor market information.

For a few years, integral career guidance has been introduced and implemented in many senior secondary schools (Winters et al, 2009). Teachers are expected to guide students in using instruments such as a portfolio and to stimulate a process of reflection and meaning-making that helps students to gain more insight into themselves and the labour market, and guide them in taking control over their own learning and career development process (Winters et al, 2009).

2. Effects of Career Guidance

The career guidance's effectiveness has always been a very popular topic among vocational psychologists (Heppner & Heppner, 2003; Swanson, 1995; Watts, 2012). This appears from the many meta-analyses that have been performed on career counseling outcome studies in the previous decades (Oliver & Spokane, 1988; Prideuaz, Creed, Muller & Patton, 2000). Nevertheless, there have been idendified several gaps in the career guidance outcome research. A first concern in career counsling outcome research is the strong emphasis on learning outcomes (OECD, 2004; Swanson, 1995). Learning outcomes refer to skills, knowledge and attitudes that are believed to facilitate career decision making usch as self-awareness, opportunity awareness, certainty of decision, internal locus of control and anxiety. Consequently, longer term behavioral outcomes are often neglected (Heppner & Heppner, 2003). Moreover, career outcomes have receive meager attention in career guidance. Career outcomes include career attitudes, behaviors and states, such as job and career satisfaction, salary, performance turnover, organizational commitment and career self-management. These outcomes are frequently

studied in organizational psychology research and hence, their neglect in career counseling research can be linked to the more general lack of interaction between organizational and vocational psychology (Kidd, Jackson & Hirsh, 2003; Lent, 2001; Savickas, 2001).

Many researchers have expressed a concern about the lack of longitudinal designs in career guidance outcome studies (Heppner & Heppner, 2003; OECD 2004; Watts, 1999). Only few career guidance evaluations follow up their participants after the intervention. This lack of longitudinal outcome studies has several drawbacks. First of all, little is known about the sustainability of the short-term effects found (Heppner & Heppner, 2003). Secondly, some effects may only occur or become manifest after some time and hence remain undiscovered when the evaluation study is short-term (Maguire & Killeen, 2003; OECD, 2004). A third result of this practice is that the effects that are studied have not yet been evaluated (Heppner & Heppner, 2003). Put otherwise, it has not yet been tested whether what career guidance succeeds to do needs to be done; whether what career guidance researchers assess needs to be assessed. Further most career guidance outcome studies are on contrieved guidance settings. Outcome studies tend to examine the effects of career interventions with recruited participants, rather than with real counseling people (Heppner & Heppner, 2003; Swanson, 1995).

3. Self-efficacy

Career guidance has often been related to an important explanatory construct, self-efficacy (Fouad, 1995; Luzzo and Ward, 1995), or more specifically, career decision-making self-efficacy (Osipow, 1999; Rivera et al, 2007). Self-efficacy pertains to one's judgement of one's own capabilities to organize and realize certain actions in order to perform or to achieve something(Bandura, 1991; Lent, Brown, and Hackett, 1994). Whether students can or will reflect on their individual career is related to their own self-efficacy in terms of career decision-making (Osipow, 1999).

The importance of self-efficacy has received increased empirical attention in the mentoring process literature (Judge, Erez & Bono, 1998). Self-effficacy is defined as one's belief in one's overall competence to effect requisite performance across a wide variety of achievement situations or as individuals' perception of their ability to perform across a variety of situations (Judge, Erez & Bono, 1998). It is conceived as a relatively stable, individually different construct, arising from the accumulation of an individual's choice behavior, his effort to overcome obstacles, his feelings of stress and anziety, and his performance and coping behavior.

Day and Allen (2004) examined the role of self-efficacy in career success. The high

self-efficacious individuals have greater outcome expectations than their low self-efficacious counterparts. Greater outcome expectation may lead to stronger effort, better performance, and satisfaction. Research has also shown that low levels of self-efficacy in career decision-making will lead to an avoidance of career development or career decision-making tasks and bahavior, and that high levels of self-efficacy in career decision-making are related to aspects of career development such as career planning or career decisiveness (Luzzo and Ward, 1995).

4. Major Satisfaction

Major satisfaction represents an important goal of career guidance and is regarded as an indicator of effective career decision making. It is a widely examined outcome variable in vocational research (Astin, 1965; Allen, 1996; Graunke & Woosley, 2005). For student, major satisfaction is analogous to job satisfaction because, like work environments, academic environments vary with respect to reinforcer patterns, opportunities to use various skills and interests, and opportunities to implement one's self-concept (Allen, 1996). For research and practice with college students, major satisfaction represents an important construct in its own right, as it is associated with academic performance (Graunke & Woosley, 2005) and certainty of career plans. Major satisfaction also has potential as a proxy for later job satisfaction because many degree programs share characteristics with their respective occupational environments (Astin, 1965). Surprisingly, studies investigating major satisfaction are fairly infrequent in the career development literature and the findings have been inconclusive (Nauta, 2007).

Ⅲ. Method

1. Participants

This study used Korea Education and Employment Panal (KEEP) data produced by Korea Research Institute for Vocational Education Training (KRIVET) from the year of 2009 to 2011, as it contains various educational and vocational variables related to students, parents, teachers, and school administers. KEEP has gathered cohort data consisting of third graders of middle, high school students, and vocational & technical schools since 2004. Among those three cohorts, this study used the college student panel data because the cohort contained data from middle school going stage to college

going stage. This made it possible to figure out the long-term effect of various factors on college life including career guidance which had affected from when the students were 3 years younger.

The final number of observations in the data of this study was 357. As shown in Table 1, male students comprised 32.2% of the sample, while female students comprised 67.8% of the sample. Also presented are students' gender, major, school type, school location for the current study.

Table 1 Frequency Distribution of Students Participants

Variables		N	Percentage
Gender	Male	115	32.2
	Female	242	67.8
	Total	357	100
Major	Humanities	46	12.9
	Social Science	116	32.5
	Education	6	1.7
	Engineering	85	23.8
	Natural Science	73	20.4
	Medical Science	6	1.7
	Art & Sports	24	6.7
	etc	1	0.3
	Total	357	100
School Type	Professional college	25	7.0
	University	331	92.7
	etc	1	0.3
	Total	357	100
School Location	Seoul Metropolis	123	34.5
	Metropolitan City	135	37.8
	Provincial-rural Areas	98	27.4
	etc	1	0.3
	Total	357	100

2. Instruments

This study utilized the KEEP data from 2009 to 2011 to explore the relationship among students' career guidance and counseling, self-efficacy and major satisfaction in time series. Specifically, the data related to career guidance, self-efficacy, and major satisfaction was collected in 2009, 2010, and 2011 correspondingly and selected for the purpose. Items for each variable, and item numbers are reported in table 2.

Table 2 The Main Variables and Items

Variables	Items	Year of Survey	Item Number
Career Guidance	1) There is good general counseling at our school. [Counseling]	2009	F5Y01082
	2) There is good career information and counseling at our school [Career Information]		F5Y01083
	3) Professors guide students with subject choice properly at our school. [Professor Guidance]		F5Y01085
Self-efficacy	1) I know what I can do better [Ability]	2010	F6Y13005
	2) I know what I like to do [Preference]		F6Y13006
	3) I know what is important in my life [Life-Value]		F6Y13007
	4) I can make a decision with my life [Decision-making]		F6Y13008
	5) I can do what I planned to do [Planning]		F6Y13009
	6) I think I am a good person [Self-respect]		F6Y13010
Major Satisfaction	Are you satisfied with your choice (major)?	2011	F7Y01049
	Are you satisfied with your department?		F7Y01055
	Are you satisfied with your academic major?		F7Y01060

3. Procedure & Data Analysis

As suggested by Baron and Kenny (1986), I estimated mediation effects through structural equation modeling (SEM) techniques. The statistical software SPSS 18.0 and AMOS 18.0 were used. With SEM, I was able to incorporate multiple indicators (i.e., ability, preference, life value, career decision self-efficacy) of our hypothesized mediator construct directly into the model. This enabled me to at least partially deal with the bias that measurement error can introduce in the estimation of mediated effects. Further, the variables used in the analysis were approximately normally distributed, which helped speed the approach to normality of the sampling distributions of the parameters.

The procedure contained 3 steps; First, the independent variable must affect the mediation variable significantly. Second, the independent variable must affect the dependent variable significantly. Third, mediation variable must affect the dependent variable significantly and the effect of independent variable on the third stage must be smaller that in the second stage. In this regression, if the effect of independent variable in the third stage is significantly different from 0, the relationship among them is partial mediation. If the effect of independent variable in the third stage is not significantly different from 0, the relationship among them is complete mediation. The research model for this study is as follows (see Figure 1).

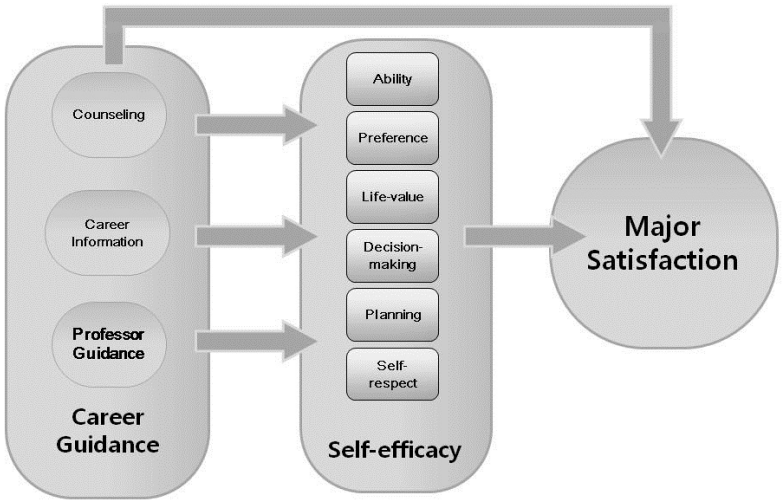

Figure 1 Research Model

With this model, the following research questions and hypotheses are posted for this study.

Research Question 1. Does career guidance have longitudinal and positive effects on college students' satisfaction with their academic majors?

Hypothesis 1.1 Counseling will have longitudinal and positive effects on students' satisfaction with their academic majors.

Hypothesis 1.2 Career information will have longitudinal and positive effects on students' satisfaction with their academic majors.

Hypothesis 1.3 Professor guidance will have longitudinal and positive effects on students' satisfaction with their academic majors.

Research Question 2. Does self-efficacy have mediated effect between career guidance & counseling and students' satisfaction with their academic majors?

Hypothesis 2.1 Students' self-efficacy will have mediated effect between career guidance & counseling and students' satisfaction with their academic majors.

Ⅳ. Results

1. Descriptives

All the means of career guidance items ranged from 3.04 to 3.23. Among self-efficacy items, the mean of life value item was the highest (3.83), and then

preference (3.81), self-respect (3.76), and ability (3.62) were high in order. The mean of major satisfaction was 3.83 which was close to 4 (a good part of). Means, standard deviations, and item-total correlation for the variables are reported in table 3.

Table 3 The Descriptive Statistics of Main Variables and Items

Variables	Items	M	SD	Item-total Correlation
Career Guidance (α=.71)	1) There is good general counseling at our school. [Counseling]	3.04	.83	.592
	2) There is good career information and counseling at our school [Career Information]	3.16	.85	.619
	3) Professors guide students with subject choice properly at our school. [Professor Guidance]	3.23	.95	.498
Self-efficacy (α=.89)	1) I know what I can do better [Ability]	3.62	.79	.702
	2) I know what I like to do [Preference]	3.81	.80	.662
	3) I know what is important in my life [Life-Value]	3.83	.77	.641
	4) I can make a decision with my life [Decision-making]	3.53	.83	.646
	5) I can do what I planned to do [Planning]	3.58	.79	.651
	6) I think I am a good person [Self-respect]	3.76	.79	.661
Major Satisfaction	Are you satisfied with your choice (major)? Are you satisfied with your department? Are you satisfied with your academic major?	3.83	.83	-

Note. All scores are 5 likert-scaled scores. 1=Rarely or Not at All; 2=Just a little; 3=Some; 4=A good part of; 5=Most of all or Absolutely

2. Preliminary Correlation Analysis

Pearson product correlation analyses were conducted to examine the relationships between major variables such as career guidance, self-efficacy, and major satisfaction. The correlations of the measured variables are summarized in Table 4.

For this study, gender was found to be correlated with self-efficacy, designating that male students had higher self-efficacy than their female counterparts ($r=-.165$, $p<.01$). The school type was correlated with students' major satisfaction. This indicated that university students were more satisfied with their academic majors than professional college students ($r=.116$, $p<.01$). In terms of career guidance, counseling was strongly correlated with decision making self-efficacy ($r=.216$, $p=.01$). Career information was also associated with decision making self-efficacy ($r=.149$, $p=.01$). Professor guidance was not found to be correlated with any of self-efficacy variables.

Table 4 Pearson Product Correlations for Measured Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Gender															
2. School Type	.092														
3. School Location	.056	-.092													
4. Counseling	-.062	.052	-.042												
5. Career information	-.066	.014	-.047	.658**											
6. Professor Guidance	.072	-.084	.112*	.345**	.379**										
7. Overall Career Guidance	-.018	-.012	.015	.818**	.836**	.745**									
8. Ability	-.145**	-.074	-.152**	.181**	.139**	.061	.156**								
9. Preference	-.082	-.099	-.094	.130*	.137**	.072	.140**	.669**							
10. Life-value	-.110*	-.098	-.129*	.117*	.072	-.002	.074	.518**	.582**						
11. Decision-making	-.144**	-.043	-.106*	.216**	.149**	.101	.192**	.509**	.439**	.481**					
12. Planning	-.113*	-.008	-.129*	.179**	.097	.094	.152**	.484**	.406**	.467**	.618**				
13. Self-respect	-.172**	-.027	-.097	.083	.122*	.055	.107*	.545**	.500**	.476**	.493**	.576**			
14. Overall Self-efficacy	-.165**	.075	-.152**	.196**	.155**	.083	.178**	.803**	.774**	.756**	.767**	.766**	.773**		
15. Overall Major satisfaction	-.101	.116*	-.179**	.185**	.178**	.090	.186**	.248**	.227**	.115*	.189**	.163**	.174**	.241**	

Note. N=357, ** : p<.01, * : p<.05 (Gender: 1=Male, 2=Female; School Type: 1=Professional college, 2=University; School Location: 1=Seoul Metropolis, 2=Metropolitan City, 3=Provincial-Rural Areas)

3. Mediation analysis

All four of Baron and Kenny's(1986) conditions for mediation were met in my analysis. (a) career guidance was significantly associated with self-efficacy (β=.157, p<.001); (b) career guidance was significantly associated with major satisfaction (β=.222, p<.001); (c) self-efficacy were significantly associated with major satisfaction (β=.291, p<.001); (d) the impact of career guidance on major satisfaction in the presence of the mediators was smaller (β=.176, p<.001) compared with (b) (see Table 5). The mediated model test in the condition fit the data. X^2=(33, N=357)=114.2, p<.001, comparative fit index (CFI) = .934, goodness-of-fit index (GFI) = .937.

Table 5 Summary of Investigating Baron and Kenny's Conditions for Mediation

Path			B	S.E	β	t
Stage 1						
Career Guidance	→	Self-efficacy	.157	.046	.178	3.407***
Counseling	→	Self-efficacy	.146	.039	.196	3.770***
Career information	→	Self-efficacy	.113	.038	.155	2.956**
Professor Guidance		Self-efficacy	.054	.034	.083	1.571
Stage 2						
Career Guidance	→	Major Satisfaction	.222	.062	.186	3.565***
Counseling	→	Major Satisfaction	.186	.053	.185	3.541***
Career information	→	Major Satisfaction	.175	.051	.178	3.403***
Professor Guidance	→	Major Satisfaction	.079	.046	.090	1.710
Stage 3						
Career Guidance	→	Major Satisfaction	.176	.062	.148	2.850***
Self-efficacy			.291	.070	.215	4.145***
Counseling	→	Major Satisfaction	.144	.052	.143	2.745**
Self-efficacy			.289	.071	.213	4.093***
Career information	→	Major Satisfaction	.142	.051	.144	2.784***
Self-efficacy			.296	.070	.219	4.236***
Professor Guidance	→	Major Satisfaction	.062	.045	.071	1.373
Self-efficacy			.319	.070	.235	4.556***

Note. N=357, ** : p<.01 *** : p<.001

Specifically, I tried to investigate each component of career guidance, so I analyzed for the each three questions on the part of career guidance because these questions contained different information related with career guidance. Two components-counseling, career information-of career guidance met the all four of Baron and Kenny's (1986) conditions in our analysis. First, (a) counseling was significantly (β=.146, p<.001) associated with self-efficacy; (b) counseling was significantly associated with major satisfaction (β=.186, p<.001); (c) self-efficacy were significantly associated with major satisfaction (β=.289, p<.001); (d) the impact of counseling on major satisfaction in the

presence of the mediators was smaller (β=.144, p<.01) compared with (b). Second, (a) career information was significantly associated with self-efficacy (β=.113, p<.01); (b) career information was significantly associated with major satisfaction; (c) self-efficacy was significantly associated with major satisfaction (β=.296, p<.001); (d) the impact of career information on major satisfaction in the presence of the mediators was smaller (β =.142, p<.01) compared with (b). However, professor guidance about subject matters was not only significantly associated with self-efficacy(β=.054, p>.05); but also significantly associated with major satisfaction (β=.079, p>.05).

The results indicated different influences of career guidance on self-efficacy and major satisfaction. Especially, counseling and career information were more effective variables for enhancing students' self-efficacy and subsequent their major satisfaction compared with professor guidance. Furthermore, the result showed partial mediation of self-efficacy between career guidance and students' major satisfaction.

I then tested whether it was plausible to consider the path from career guidance to major satisfaction as equal to zero. The chi-square for this model differed significantly from our preliminary mediated model X^2=(34, N=357)=122.5, p<.001, comparative fit index (CFI) = .928, goodness-of-fit index (GFI) = .932. Thus, the preliminary model was retained and is illustrated in Figure 2. The indirect effect of career guidance was significant, z=2.116, p<.05. The results are summarized in Table 6.

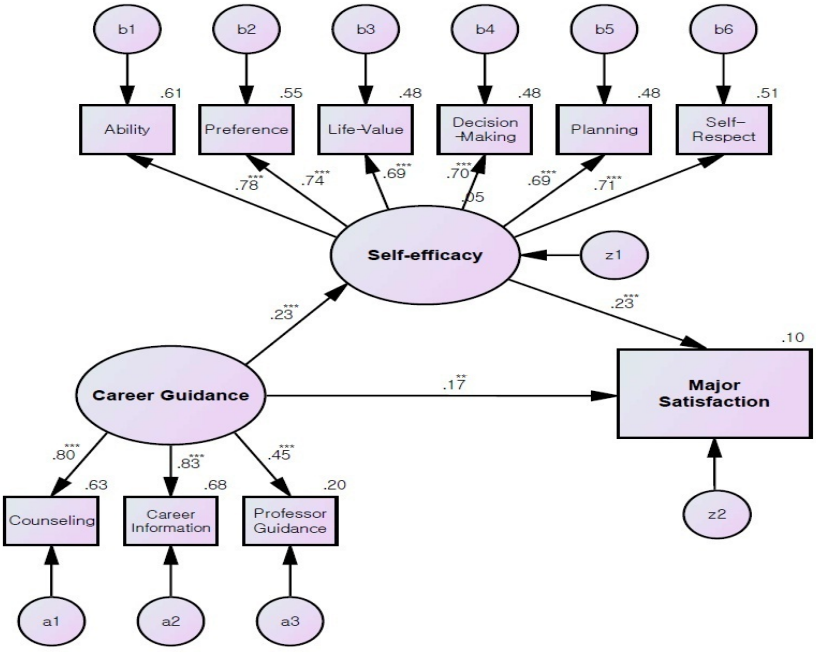

Figure 2 Mediation Model.

Note. X^2=(33, N=357)=114.2, p<.001, comparative fit index (CFI) = .934, goodness-of-fit index (GFI) = .937, adjusted goodness-of-fit index (AGFI) = .895, ** : p<.01, *** : p<.001

Table 6 Estimates in Mediation Model

Path			Unstandardized estimates (Standardized estimates)
Career Guidance	→	Counseling	1.547(.795)***
Career Guidance	→	Career information	1.646(.827)***
Career Guidance	→	Professor Guidance	1.000(.446)***
Career Guidance	→	Self-efficacy	.331(.228)***
Career Guidance	→	Major Satisfaction	.333(.170)**
Self-efficacy	→	Ability	1.000(.780)***
Self-efficacy	→	Preference	.954(.740)***
Self-efficacy	→	Life-Value	.858(.693)***
Self-efficacy	→	Decision-Making	.927(.695)***
Self-efficacy	→	Planning	.889(.692)***
Self-efficacy	→	Self-Respect	.914(.714)***
Self-efficacy	→	Major Satisfaction	.304(.226)***

Note: N=357, ** : p<.01, *** : p<.001

V. Discussion

The results show that individual differences of students are causing the large effects, but I believe that it is too early to reach this conclusion. While in this study, the effects of differences in students' gender, major, school type, and school location were not studied in detail, it is very likely that when students has more distinguished characteristics, the outcomes could be quite different. The most important outcome of the present study is the longitudinal effects of career guidance on students' satisfaction for their academic majors with the mediation effect of self-efficacy. Thus, when the goal of career guidance is to help students develop a vocational identity and plan their learning process and career development, career issues such as future ambitions of students or reasons for participating in the course, should definitely be on the agenda. Furthermore, schools have to focus on several elements important for integral career guidance. Guidance in work practice for example, and conversations between teacher, student and apprenticeship are also important factors that contribute to career competency development of students (Winters et al, 2009).

In our sample, however, the fact that schools indicated they are providing career guidance for some years does not imply that every participating people was experienced in providing career guidance. Some faculty who has been giving career guidance for several years, for example, cannot yet be considered competent. All schools in this research indicated that they used counseling, career information, and professor guidance to guide students in their careers, but this is still a very new aspect of the educational

practice in Korea. More time and effort could be put into the training and facilitation of faculty to fulfill this new task.

Faculty members, for example, should learn how to talk to students about career issues, besides school issues. Earlier studies have already shown that teachers often stick to talking about school subjects and find it difficult to broaden their perspective to discuss the possible careers of students and the professional practice students will be working in (Mittendorff, 2010; Winters et al. 2009). Also teachers should be trained in acting less teacher-centered while providing guidance. When they want a learning environment in which students learn to initiate actions for their career and become more self-directed, teachers should demonstrate less directing behavior and enable students to learn to control and to plan their own career development. Further research may contribute to how this training and facilitation of teachers can best be shaped.

Certain limitations of the present study warrant consideration and suggest possibilities for further research. First the study was done using the KEEP data, thus, results can only limitedly be generalized to all colleges in Korea and to an even lesser degree to other school types internationally. Further research should further refine analyses on career guidance by using larger and more widespread data-sets. It would be interesting to investigate how other countries use these kinds of guidance efforts in their educational systems, and compare the results of our studies with other studies on effects of career guidance.

Lastly, the study focused only on outcomes in terms of students' satisfaction with their academic majors while students were still at school. Other student outcomes such as the development of a vocational identity or drop-out rates could be considered (Wijers and Meijers, 1996), as well as long-term effects with regard to skills for career development, to be measured when students are entering the labour market. Research by Morris (2004) has shown that students with high career exploration skills were more likely to make transitions within the labour market that indicated progression than students with lower career exploration skills. Further research should investigate the effectiveness with respect to career development after school for which more indicators of desired effects remain to be developed. Finally, since the quantitative measurement instruments provide only a few broad general results, it could be recommended to examine through mixed methods. The use of multiple methodologies could include the combination of self-reports, interviews, and case studies with the survey method. Thus, the use of quantitative and qualitative methods would have been preferable, since interview and observation data could have explained some more facts that were not explained through self-reported surveys.

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Abstract

Longitudinal Effects of Career Guidance on College Students' Satisfaction With Their Academic Majors

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The purpose for this study was to investigate the long-term stability of the positive effects gained through the career guidance. Especially this study focused on longitudinal effects of career guidance on students' major satisfaction. Data from Korea Education and Employment Panel (KEEP) was analyzed by applying SPSS 18.0 and AMOS 18.0 to investigate the mediation effect of students' self-efficacy between career guidance and students' major satisfaction. Results indicated a continual increase of self-efficacy in the long-term stabilization with regard to students' satisfaction with their academic majors. Gender was found to be an important variable in relation to students' self-efficacy. Students who went to 4-year universities tended to have higher major satisfaction compared with students who went to professional colleges. Students in rural area also tended to be more satisfied with their professor guidance and academic majors. This study quantitively investigated the long-term stability of the positive effects gained through the career guidance. Although the findings were somewhat tentative, there was preliminary support for the inclusion of three critical ingredients-counseling, career information, and professor guidance in all types of career guidance. Additional research, however, is needed to identify which students benefit from which career guidance under what circumstances.

Key words: keep, longitudinal effect, career guidance, self-efficacy, major satisfaction, mediation